

Additions to the avifauna of Bwindi Impenetrable Forest and Echuya Forest Reserve, Uganda

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Bwindi Impenetrable forest is located in the extreme southwest of Uganda and contains one of the most diverse forest avifaunas in Africa (Keith *et al.* 1969, Butynski & Kalina 1993). Nearly all of the forest is protected as the Bwindi Impenetrable National Park (BINP), covering 331 km² (Kalina & Butynski 1996). Sixty-nine of the 77 bird species representative of the Albertine Rift Afromontane forests (Keith *et al.* 1969) and 24 of the 36 species endemic to the Albertine Rift Mountains Endemic Bird Area (Stattersfield *et al.* 1998) have been recorded at BINP. Bwindi is one of the few remaining forests in Africa that spans elevations from lowland (1160 m) to high montane (2650 m). Geological, climactic and vegetation details are discussed in Keith *et al.* (1969).

This area has been extensively surveyed for birds with the first comprehensive summary by Keith *et al.* (1969). Subsequently, additions to the known avifauna, both specimen and sight records, have been published (Friedmann & Williams 1970, Bennun 1986, Butynski & Kalina 1993, Kalina & Butynski 1996). Including the most recently published additions, 350 species of birds are known to occur within the boundaries of the park, and another 19 have been recorded just outside it (Kalina & Butynski 1996).

From 10 March through 23 May 1997, a team of researchers conducted censuses of the avifauna at three sites adjacent to BINP as well as at Echuya Forest Reserve (EFR), near the town of Kisoro in southwestern Uganda and straddling the Uganda and Rwanda border. The institutions represented were Makerere University, Kampala, Uganda; African Tropical Biodiversity Program; Institute of Tropical Forest Conservation, Ruhija, Uganda; and the Field Museum of Natural History, Chicago, USA.

Our censuses added six species to the list of birds known from the Bwindi area, all of which may occur in BINP itself, and 15 to the known avifauna of EFR. In this note we also include some natural history observations and briefly discuss ecological, taxonomic, and conservation implications.

Methods

Censuses were conducted at each site for 6–12 days using mist nets for quantitative population assessments and observation for additional records of species presence. Mist nets were set up in lines of 20–30 consecutive 12 m nets to assess the occurrences and relative abundance of understorey bird taxa. Small series of birds were collected and preserved with all standard label data including weight, reproductive status, moult condition, fat level and age based on skull ossification. Any stomachs containing food remains were preserved in alcohol.

Results and discussion

Except where noted, all new records are documented by voucher specimens housed either at Makerere University Museum of Vertebrate Zoology or Field Museum of Natural History. A complete list of the species encountered is lodged at Makerere University and can be obtained from the authors. Taxonomy below follows the standard East African checklist of the birds of East Africa (Ornithological Sub-committee 1996).

Sites bordering Bwindi-Impenetrable National Park

Byumba 00°55.685' S, 29°41.75' E, elevation 1540 m, 10–16 March 1997. This site is near the town of Byumba at the western side of the Northern Sector of BINP.

This area consists of slash and burn agricultural land dominated by banana plantations and secondary forest. The bird species we documented here were largely characteristic of cultivated land with a number of non-forest weaver species (*Ploceus* spp.), as well as open-country sunbirds and shrikes dominating the fauna. New to Bwindi forest from this site were Whistling Cisticola *Cisticola lateralis* and the Palaearctic migrant Garden Warbler *Sylvia borin* which was also netted at Ngoto. A few species that are better known from primary forest (Bennun *et al.* 1996), e.g., Least Honeyguide *Indicator exilis*, Mountain Illadopsis *Illadopsis pyrrhopterum*, Scaly-breasted Illadopsis *Illadopsis albipectus*, and Red-tailed Bristlebill *Bleda syndactyla*, were found in second growth.

Ngoto Swamp 00°53.806' S, 29°43.964' E, elevation 1500 m, 16–21 March 1997. This site is located near the town of Kirima in the northeast corner of the Northern Sector of BINP. It is adjacent to the national park and consists mostly of secondary (regenerating) forest. There is an extensive papyrus swamp, contiguous with a small area of the same habitat in the park, where a stream drains the swamp. Mist nets were run within the papyrus swamp as well as in the regenerating forest at its edges. We recorded five bird species previously unknown from the park or its boundary areas. Three of these, Papyrus Gonolek *Laniarius mufumbiri*, Speckle-breasted Woodpecker

Dendropicos poecilolaemus and White-winged Warbler *Bradypterus carpalis* were found only in the heart of the swamp; they may have been missed in earlier surveys because of the inhospitable nature of the habitat. The Bamboo Warbler *Bradypterus alfredi* is an inconspicuous skulking species that we found near a stream at the edge of the papyrus; it may have been missed in earlier studies owing to its secretive behaviour and the difficulty of identifying it in the field.

Ngoto swamp is one of several areas proposed for gazettelement to BINP (T. Butynski, *in litt.*). The presence of these species in the extensive papyrus swamp adjacent to the park boundary strengthens the argument for its gazettelement.

Nteko 01°02.49' S, 29°36.97' E, elevation 1600 m, 12–23 May 1997. This site is a privately owned parcel of land adjacent to BINP, with its boundary with the park delineated by the Kashasha River. There is a history of selective pit sawing in this area, but in general, the forest is intact and healthy, and it supports populations of many species characteristic of the forests of southwestern Uganda. Given the rarity of forest patches outside the park boundaries and the apparent health of Nteko, it would make a logical extension of the park if such were ever considered.

The bird species we found at Nteko are documented in earlier reports of the Bwindi-Impenetrable avifauna (Matthews 1996a). At least one species may deserve further scrutiny. The black boubou shrikes, represented in montane western Uganda by Fülleborn's Black Boubou *Laniarius fülleborni holomelas*, are a problematic complex of species. Fülleborn's Black Boubou generally is described in the literature (Chapin 1954), and through our own work, as having dark brown to reddish brown irides. At Nteko, we found four individual black shrikes with blue-grey irides. While some descriptions of juveniles have mentioned grey eyes, the specimens we collected included both immatures and adults. While this eye color may simply be a variable or age-related character, it suggests an area for future research and the possibility of a cryptic taxon. Genetic analyses of the tissues collected with these specimens may shed some light on the issue.

Echuya Forest Reserve 01°14.67' S, 29°47.63' E, elevation 2350 m, 10–19 April 1997. This site is a moderately high elevation mixed deciduous and bamboo forest. A rush/reed marsh lies in the valley. We mist-netted in two locations. One transect was on a slope in deciduous forest. The second transect ran across the marsh, into the adjacent transitional forest and subsequently into the bamboo forest. The avifauna shows many similarities to that of the Rwenzori Mountains, and both the forest and the marsh are inhabited by many Albertine Rift endemic or endangered species.

Table 1. Species of global or regional concern encountered during this survey. V = Vulnerable, NT = Near Threatened, EN = Endangered. Regional status follows Bennun & Njoroge (1996), Global status follows Collar *et al.* (1994).

Species	Locality				Status	
	Byumba	Ngoto Swamp	Nteko	Echuya	Regional	Global
Least Honeyguide <i>Indicator exilis</i>	+				V	—
Grey-winged Robin <i>Sheppardia polioptera</i>	+				V	—
Papyrus Gonolek <i>Laniarius mufumbiri</i>		+			NT	NT
Bamboo Warbler <i>Bradypterus alfredi</i>		+			V	—
Red-throated Alethe <i>Alethe poliophrys</i>			+	+	V	—
Kivu Ground Thrush <i>Zoothera tanganjicae</i>			+	+	EN	NT
Grauer's Rush Warbler <i>Bradypterus graueri</i>				+	V	V
White-bellied Robin-Chat <i>Cossypha roberti</i>			+		EN	—
Grey-chested Illadopsis <i>Kakamega poliothorax</i>			+		V	—

Our surveys documented six species from the marsh/bamboo transect, and an additional nine from the deciduous forest transect, that are not included in the most recently published list of the birds of Echuya (Matthews, 1996b). From the marsh, these were Red-chested Flufftail *Sarothrura rufa*, African Snipe *Gallinago nigripennis*, Malachite Sunbird *Nectarinia famosa*, Scarlet-tufted Malachite Sunbird *N. johnstoni*, Bronze Sunbird *N. kilimensis* and Baglafaecht Weaver *Ploceus baglafaecht*. From the forest several Albertine Rift endemics were recorded. These were Archer's Robin-chat *Cossypha archeri*, Red-throated Alethe *Alethe poliophrys*, Kivu Ground Thrush *Zoothera tanganjicae*, and Mountain Masked Apalis *Apalis personata*. Also recorded as additions to the avifauna were Mountain Illadopsis *Illadopsis pyrrhopterum*, Tawny-flanked Prinia *Prinia subflava*, and Strange Weaver *Ploceus alienus*. In addition we made sight records of Slender-billed Starling *Onychognathus tenuirostris* and Variable Sunbird *Nectarinia venusta*.

The occurrence of the two malachite sunbird species in sympatry is particularly surprising, given that *johnstoni* and *famosa* are normally altitudinally segregated, with *johnstoni* at much higher elevations (3000–4500 m) associated with giant *Lobelia* and *Senecio* (Lewis & Pomeroy 1989). A *johnstoni* specimen from 2150 m in the Pare Mountains of Tanzania is cited by these authors as a rare incident of wandering, and there seem to be no other published records of *johnstoni* from elevations lower than 3000 m. The presence of at least three individuals at Echuya is possibly indicative of a dispersal phenomenon more widespread than previously known. Although our only records of *johnstoni* are the three we captured, it is likely that there were additional birds in the area mixed with the very common *famosa*. With four previously unrecorded species of *Nectarinia* occurring at

Echuya during our survey, it is conceivable that some tree in flower is seasonally drawing these sunbirds from nearby habitats and elevations.

The African Grass Owl *Tyto capensis* is a scarce bird with very local distribution. Matthews (1996b) cites an old record from Echuya, but his own survey did not find the species. We observed at least one individual of this species on several occasions over the marsh at dusk. Pellets were collected which should help document the diet of this species in Echuya.

Bwindi and Echuya are both well-surveyed areas. The addition of this many species to their avifaunas, including several globally and regionally threatened species (Collar *et al.* 1994, Bennun & Njoroge 1996, Table 1), shows the importance of these areas in regional and global conservation efforts as well as of continued systematic surveys of Uganda's forests.

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