

# Bird observations around Huye (Butare), southern Rwanda

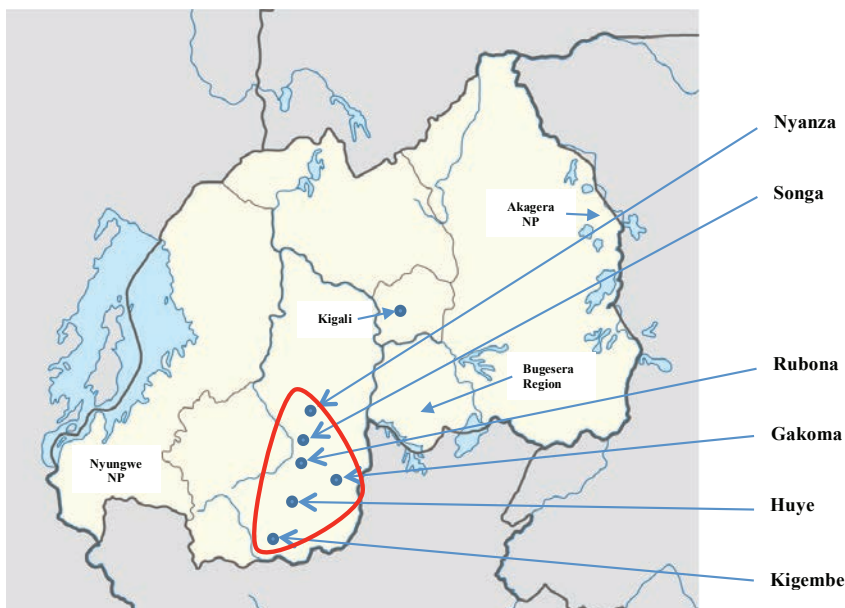
Bruno Boedts

**Observations des oiseaux aux environs d'Huye (Butare), sud du Rwanda.** L'avifaune de la région centre-sud du Rwanda présente à la fois certaines espèces caractéristiques des forêts de montagne de l'ouest et d'autres plus nombreuses des régions de marais et savanes situées à l'est. Un séjour de longue durée à Huye au début des années 1990, complété par des séjours plus courts entre 1994 et 2015, m'ont permis d'observer 194 espèces dans la zone concernée. La diversité des espèces dans la zone, qui ne comprend pas d'aires protégées, est restée élevée au cours de la période et en comparaison avec des données plus anciennes datant des années 1957–58. Cependant, quelques changements ont été notés, par exemple pour les espèces des vallées, suite aux aménagements rizicoles entrepris ces dernières années.

**Summary.** The avifauna of the south-central region of Rwanda possesses certain species characteristic of both western montane forests and others more numerous in swamps and savanna regions to the east. A long stay in Huye in the early 1990s, complemented by shorter periods between 1994 and 2015, permitted me to observe 194 species in the region. The diversity of species in the area, which does not include any protected areas, has remained high during the study and in comparison to earlier periods dating back to 1957–58. However, some changes have been noted, for example for species found in valleys, following rice scheme developments in recent years.

The avifauna of Huye, previously called Butare (and Astrida prior to independence), was studied by Brother Aurélien, who published his observations in 1957–58 (Aurélien 1957a,b, 1958). Country-wide information on birds in Rwanda is provided by Vande weghe & Vande weghe (2011), based principally on observations made during the late 1980s and early 1990s. However, massive changes in terms of human population and resulting habitat alteration that

are likely to have had a major impact on some species have occurred in recent years, and there is a general lack of recent data on avifaunal distributions and populations in Rwanda. I was resident at Huye, situated south of the central plateau at 1,700 m (02°33'S 29°46'E; Fig. 1) and made ornithological observations, mainly around the town, in December 1989–July 1991 and, additionally, during short stays in March 1994, July 2006 and July 2015.



**Figure 1.** Location of sites visited around Huye (study area framed in red), Rwanda.

Situation des principaux sites visités dans les environs d'Huye (zone d'étude encadrée en rouge), Rwanda.



**Figure 2.** View of the Arboretum of Ruhande and, in the foreground, Rwasave fish ponds (right) and rice fields (left), Huye, Rwanda, July 2015 (B. Boedts)

Vue sur l'arboretum de Ruhande et, en avant-plan, les étangs piscicoles de Rwasave (à droite) et les rizières (à gauche), Huye, Rwanda, juillet 2015 (B. Boedts)



**Figure 3.** View of savanna woodlands, Rubona, Rwanda, July 2015 (B. Boedts)

Vue sur la savane arborée, Rubona, Rwanda, juillet 2015 (B. Boedts)

### Study area

Two sites close to Huye city centre, the fish farm of Rwasave and the Arboretum of Ruhande near the National University of Rwanda (Fig. 2), were visited regularly each week between 1989 and 1991 (*c.*60 visits over 20 months) and occasionally between 1994 and 2015 (*c.*10 visits). The fish farm, in existence since 1983, covers a total area of 18 ha and includes 60 production and research ponds, mainly of *Tilapia nilotica*. The Arboretum of *c.*200 ha was established in 1934. It includes >207 species of local and exotic trees, including 67 species of *Eucalyptus* (Nsabimana 2013). In the valley bottoms near Huye, many formerly cultivated fields of maize, sorghum, sweet potatoes and beans have been converted into rice fields.

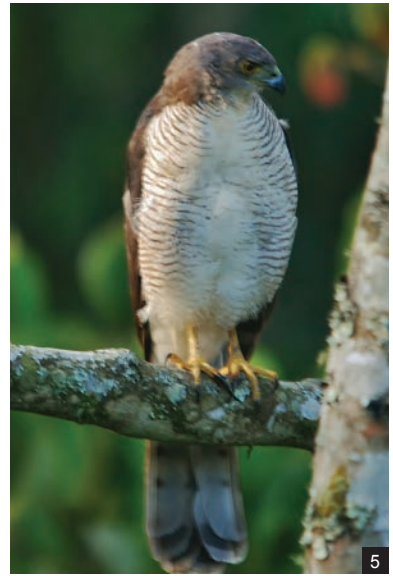
I also made observations in savanna woodlands at Rubona and Songa, north of Huye on the road to Kigali, owned by the Rwanda Agricultural Board (two visits in 1989–91 and three in 2015) (Fig. 3). In addition, wetlands at the southern

border of Rwanda were visited occasionally between 1989 and 1991, mainly the Gakoma wetlands in the east (once in May 1990), and Kigembe fish farm in the south (two visits, in February and August 1990).

The climate of Rwanda includes two dry seasons (a short one in January–February and a long one in July–September) and two wet seasons (a short one in October–December and a long one in March–June) (Kanyamibwa 2001).

### Results

Of the 194 species I observed (see Appendix 1), one is classified as Endangered (Grey Crowned Crane *Balearica regulorum*) and two as Near Threatened (Bateleur *Terathopius ecaudatus* and Great Snipe *Gallinago media*). The majority (91.8%) are widespread Afrotropical species, including at least 16 intra-African migrants, ten Afromontane, two Zambesian and one Guineo-Congolian. The remaining 8.2% comprises 16 Palearctic migrants.



**Figure 4.** Pink-backed Pelicans *Pelecanus rufescens* and Yellow-billed Stork *Mycteria ibis* (right), fish ponds near Kigabiro, Eastern Province, Rwanda, July 2015 (B. Boedts)

Pélican gris *Pelecanus rufescens* et Tantale ibis *Mycteria ibis*, étangs piscicoles aux environs de Kigabiro, Province de l'Est, Rwanda, juillet 2015 (B. Boedts)

**Figure 5.** African Goshawk / Autour tachiro *Accipiter tachiro*, Gisakura, Nyungwe forest, Rwanda, July 2015 (B. Boedts)

**Figure 6.** Black-morph Augur Buzzard *Buteo augur*, between Huye and Kigali, near Rusatira, Rwanda, July 2015. Identified by white patches on secondaries and rufous uppertail (B. Boedts)

Buse augure *Buteo augur* forme noire, entre Huye et Kigali aux environs de Rusatira, Rwanda, juillet 2015. Identifié par les taches blanches sur les rémiges secondaires et le dessus de la queue roux (B. Boedts)

**Figure 7.** Immature Long-crested Eagle *Lophaetus occipitalis*, between Huye and Kigali, around Nyanza, Rwanda, July 2015. Identified by barred tail, white feathered legs and upright posture (B. Boedts)

Aigle huppard *Lophaetus occipitalis*, immature, entre Huye et Kigali, près de Nyanza, Rwanda, juillet 2015. Identifié par la queue barrée, les plumes blanches des pattes et la posture droite (B. Boedts)

**Figure 8.** Spot-flanked Barbet / Barbican funèbre *Tricholaema lacrymosa*, Rubona, Rwanda, July 2015 (B. Boedts)

## Notes on selected species

The following notes provide details on species that were irregularly observed in the study area and are noteworthy for southern Rwanda or are globally Endangered (EN) or Near Threatened (NT) (BirdLife International 2015).

### Great White Pelican *Pelecanus onocrotalus*

Just two observations of singles: at Rwasave ponds on 14 and 17 October 1990. Fairly common visitor to Rwanda (Vande weghe & Vande weghe 2011) but not previously recorded at Huye.

### Black-crowned Night Heron *Nycticorax nycticorax*

Fifteen occupied nests, with those of Sacred Ibises *Threskiornis aethiopicus* (ten pairs) and Black-headed Herons *Ardea melanocephala* (two pairs) in *Eucalyptus* trees along the road from Huye to Kigali, near Nyanza, on 23 July 2015. Not recorded in 1989–91.

### Squacco Heron *Ardeola ralloides*

In non-breeding plumage at Rwasave ponds on 8–9 December 1990 and 3 January 1991. Although the plumage of some birds was rather dark, they were not identified with certainty as Madagascar Pond Heron *A. idae* as this species is usually found outside Madagascar only in April–September. However, Madagascar Pond Heron has been collected in February at Huye (Vande weghe & Vande weghe 2011).

### African Openbill *Anastomus lamelligeris*

One at Huye rice fields on 21 April 1991 and 15 at Rwasave ponds in July 2015. Has perhaps benefited from the development of rice schemes.

### African Spoonbill *Platalea alba*

One at Rwasave ponds on 2 February 1990 and one at Huye rice fields on 21 April 1991. A scarce resident visiting rice schemes (Vande weghe & Vande weghe 2011) but recently reported as common at paddies in the east (J. Anderson *in litt.* 2015).

### White-faced Whistling Duck *Dendrocygna viduata*

Just one near Gakoma on 29 April 1990. Breeding visitor arriving in Huye from January but not seen in some years (Aurelien 1957a).

### Black-chested Snake Eagle *Circaetus pectoralis*

One flying over Rwasave ponds on 1 November 1990. Considered an uncommon resident, becoming rare in Rwanda since 1994 (Vande weghe & Vande weghe 2011).

### Bateleur *Terathopius ecaudatus* NT

One at Songa on 24 March and 10 April 1991. In the 1950s, a pair resided at Mont Huye, c.10 km west of Huye, from where they flew every day to their hunting grounds near Bugesera (Aurélien 1957a). Notwithstanding a substantial decline during the last 30 years, it is described as a common breeding resident in Rwanda (Vande weghe & Vande weghe 2011), although the species may now be extinct as a breeder outside Akagera National Park (J. Anderson *in litt.* 2015).

### Ayres's Eagle *Hieraetus ayresii*

Singles over the Arboretum of Ruhande on 17 June 1990 and 14 July 2006. A scarce visitor already reported from the Huye area (Vande weghe & Vande weghe 2011).

### Grey Crowned Crane *Balearica regulorum* EN

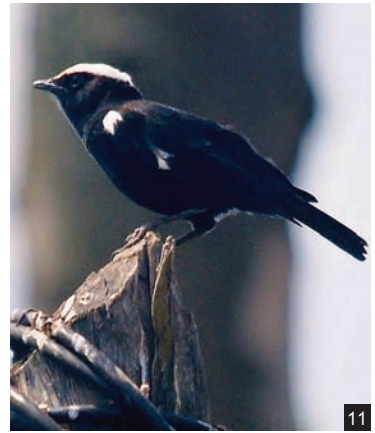
Often in pairs, passing through the valleys of Huye all year, except in the short dry season. In the late 1950s, there was a roost of 100 in the centre of Huye (Aurélien 1957a). Still considered a common resident throughout the country, but the Rwandan population has declined dramatically in recent years due to the capture of chicks for the bird trade (Vande weghe & Vande weghe 2011).

### African Wattled Lapwing *Vanellus senegallus*

Just one record at Huye of a single on 21 April 1991. By 2015, had become common at Huye paddyfields. A common breeding resident in Rwanda and the most adaptable of the larger plovers (Vande weghe & Vande weghe 2011).

### Long-toed Lapwing *Vanellus crassirostris*

Two seen during most visits to Rwasave ponds in 1989–91, but none in 2006 and 2015. Described as a common breeding resident in Rwanda, which has also become well established in paddyfields (Vande weghe & Vande weghe 2011), but this is apparently not the case at Huye today, where it formerly bred (Aurélien 1957a).



**Figure 9.** Red-capped Robin Chat *Cossypha natalensis*, near the Arboretum of Ruhande, Huye, Rwanda, July 2015 (B. Boedts)

Cossyphé à calotte rousse *Cossypha natalensis*, près de l'arboretum de Ruhande, Huye, Rwanda, juillet 2015 (B. Boedts)

**Figure 10.** Miombo Rock Thrush / Monticola angolais *Monticola angolensis*, Rubona, Rwanda, July 2015 (B. Boedts)

**Figure 11.** Male Ruaha Chat *Myrmecocichla collaris*, between Huye and Kigali, near Nyanza, Rwanda, July 2015 (B. Boedts)

Traquet du Ruaha *Myrmecocichla collaris*, mâle, entre Huye et Kigali, près de Nyanza, Rwanda, juillet 2015 (B. Boedts)

**Greater Painted-snipe** *Rostratula benghalensis*

One at Rwasave ponds on 8 December 1990. Uncommon visitor throughout the country (Vande weghe & Vande weghe 2011).

**Great Snipe** *Gallinago media* NT

One at Rwasave ponds on 7–9 December 1990. Formerly numerous in all of the valleys (Aurélien 1957a) but has declined considerably since 1970 (Vande weghe & Vande weghe 2011).

**Ruff** *Calidris pugnax*

Singles at Rwasave ponds on 19 November 1990 and 7 December 1990. A common visitor to Rwanda on both passages (Vande weghe & Vande weghe 2011), but Rwasave ponds are perhaps not attractive to the species.

**Verreaux's Eagle Owl** *Bubo lacteus*

One near rice fields at Huye on 21 April 1991. An uncommon breeding resident that occasionally occurs on the central plateau (Vande weghe & Vande weghe 2011).

**African Palm Swift** *Cypsiurus parvus*

Five at Rwasave ponds in July 2015. Not recorded in the study area in 1989–91. Common breeding resident in eastern Rwanda where there

are palms, but does not occur much above 1,300 m and is curiously absent from the Bugesera region (Vande weghe & Vande weghe 2011).

**Narina's Trogon** *Apaloderma narina*

One in early-growth *Eucalyptus* forest near Rwasave ponds on 3 July 1991 and another near rice fields at Rubona on 26 July 2015. The species was previously known to occur annually in *Eucalyptus* forest at Huye during the dry season (Aurélien 1957a).

**Blue-cheeked Bee-eater** *Merops persicus*

In small groups. Max. 5, at Songa on 24 March 1991. Occurs until the end of April, occasionally on the central plateau (Vande weghe & Vande weghe 2011).

**African Grey Hornbill** *Tockus nasutus*

An unusual record of one at Songa on 10 April 1991, in the wet season. Considered to be an austral visitor, which normally occurs during the dry season (Vande weghe & Vande weghe 2011).

**Red-throated Wryneck** *Jynx ruficollis*

Four records of singles: at the Arboretum of Ruhande on 26 June 1990; near Rwasave ponds on 24 May 1990 and 3 January 1991; and at



12

**Figure 12.** Singing Cisticola / Cisticole chanteuse *Cisticola cantans*, Rubona, Rwanda, July 2015 (B. Boedts)



13

**Figure 13.** Grosbeak Weaver *Amblyospiza albifrons*, near the Arboretum of Ruhande, Huye, Rwanda, July 2015 (B. Boedts)

Amblyospize à front blanc *Amblyospiza albifrons*, près de l'arboretum de Ruhande, Huye, Rwanda, juillet 2015 (B. Boedts)

Rubona on 7 July 2015. Uncommon resident, most frequently recorded on the central plateau (Vande weghe & Vande weghe 2011).

**Bearded Woodpecker** *Dendropicos namaquus*

One at Rwasave ponds on 24 May 1990. Uncommon breeding resident in central Bugesera region (Vande weghe & Vande weghe 2011).

**Common Sand Martin** *Riparia riparia*

A late record of ten at Songa on 10 April 1991. Common visitor, mostly noted on passage in October–November and February–April, throughout the country but more abundantly in low-lying savannas and areas bordering Lake Kivu (Vande weghe & Vande weghe 2011).

**Mountain Wagtail** *Motacilla clara*

One at Rwasave ponds on 20 April 1991. Uncommon resident that formerly visited Huye annually during the rains (Vande weghe & Vande weghe 2011), but rarely seen today.

**Cape Robin Chat** *Cossypha caffra*

One at the Arboretum of Ruhande on 27 October 1990. Common resident in western montane forests (Vande weghe & Vande weghe 2011), but no previous mention for Huye.

**Red-capped Robin Chat** *Cossypha natalensis*

A few singles at the Arboretum of Ruhande, in June 1990 and 1991, near valley bottoms. Many singles also there in July 2015 (Fig. 9) and in early-growth *Eucalyptus* forest at Rubona. Common visitor in May–October in Rwanda (Vande weghe & Vande weghe 2011).

**Miombo Rock Thrush** *Monticola angolensis*

One singing at Rubona on 26 July 2015 (Fig. 10). Scarce resident occurring sporadically on the central plateau (Vande weghe & Vande weghe 2011).

**Ruaha Chat** *Myrmecocichla collaris*

One male singing from an electricity pole along the Huye–Kigali road near Nyanza on 23 July 2015 (Fig. 11). Common resident in eastern Rwanda and until at least the late 1970s in southern Bugesera region (Vande weghe & Vande weghe 2011).

**Abyssinian Thrush** *Turdus abyssinicus*

Singles near Rwasave ponds, on 14 May and 1 November 1990. Also one near Gakoma, on 29 April 1990. Occurs locally on the central plateau and has been observed in the Arboretum of Ruhande (Vande weghe & Vande weghe 2011).

### **African Yellow Warbler** *Iduna natalensis*

Year-round in the valley bottoms bordering the Arboretum of Ruhande. Considered an uncommon breeding resident (Vande weghe & Vande weghe 2011).

### **Singing Cisticola** *Cisticola cantans*

Two together at Rubona on 26 July 2015 (Fig. 12). Uncommon breeding resident, sporadically recorded on the central plateau (Vande weghe & Vande weghe 2011); overlooked in the past but now found at many sites in Rwanda (G. Vande weghe *in litt.* 2016).

### **Eastern Black-headed Oriole** *Oriolus larvatus*

Singles at the Arboretum of Ruhande on 26 June 1990 and 3 July 1991. Occasionally recorded on the central plateau (e.g. at Huye) where considered a seasonal wanderer (Vande weghe & Vande weghe 2011).

### **Grosbeak Weaver** *Amblyospiza albifrons*

In small groups, max. 10, most of the year in the valleys of the Arboretum of Ruhande (Fig. 13). Fairly common resident and wanderer on the central plateau, but largely restricted to the major river valleys (Vande weghe & Vande weghe 2011).

## **Discussion**

Some species that are uncommon in southern Rwanda were observed around Huye, e.g. African Spoonbill, Black-chested Snake Eagle, Ayres's Eagle, Greater Painted-snipe, Verreaux's Eagle Owl, Red-throated Wryneck and African Yellow Warbler. Around Rubona in 2015, some species that are rarely seen around Huye were recorded, e.g. Singing Cisticola, Miombo Rock Thrush and Ruaha Chat, the latter two Zambezan elements.

The important wetlands in the Bugesera region and the Ruzizi Delta north of Lake Tanganyika in neighbouring Burundi, explain the presence of at least eight Palearctic shorebirds on passage or wintering at Huye, including Great Snipe, Common Snipe *Gallinago gallinago*, Ruff, Common Greenshank *Tringa nebularia*, Wood Sandpiper *T. glareola*, Green Sandpiper *T. ochropus*, Little Stint *Calidris minuta* and Common Sandpiper *Actitis hypoleucos*.

In recent years, certain species found in the valleys have been recorded in newly developed rice

schemes, including previously less common species such as Black-crowned Night Heron (which nested near Huye in 2015), African Openbill and Wattled Lapwing. Even some species not typically associated with wetlands appear to have benefited, such as Long-crested Eagle *Lophaetus occipitalis*, Speckled Pigeon *Columba guinea* and African Palm Swift.

The majority of birds observed around Huye (85.1%) were widespread Afrotropical species. Some species that principally inhabit montane forests and associated habitats in western Rwanda, but are also widespread in riparian forest or moist woodlands (5.2%), are common around Huye, such as Cinnamon-chested Bee-eater *Merops oreobates*, White-eyed Slaty Flycatcher *Melaenornis fischeri*, Chubb's Cisticola *Cisticola chubbi*, Bronze Sunbird *Nectarinia kilimensis*, Baglafaecht Weaver *Ploceus baglafaecht*, Western Citril *Crithagra frontalis* and Thick-billed Seedeater *C. burtoni*. Other species less common outside montane forests were also seen in the study area, such as Mountain Wagtail, Cape Robin Chat and Abyssinian Thrush. Palearctic and Zambezan species represent 8.2% and 1.0% respectively of birds recorded around Huye. Just one Guineo-Congolian species (0.5%), Vieillot's Black Weaver *Ploceus nigerrimus*, was recorded in the study area.

Comparison of personal observations with data from the years 1957–58 shows a decrease in abundance for certain species such as Black-chested Snake Eagle, Bateleur, Grey Crowned Crane and Great Snipe. In general, however, bird diversity at Huye remains high, which is partly due to the fact that birds are generally not hunted by Rwandans (Vande weghe & Vande weghe 2011).

## **Acknowledgements**

My thanks to Jason Anderson, James Hogg, Gael Vande weghe and Ron Demey for their helpful comments on earlier versions of this article.

## **References**

- Aurélien, Fr. 1957a. *Rwibinda, lac aux oiseaux*. Astrida: Frères de la Charité, Groupe Scolaire.
- Aurélien, Fr. 1957b. *Les oiseaux du Ruanda-Urundi I*. Astrida: Frères de la Charité, Groupe Scolaire.
- Aurélien, Fr. 1958. *Les oiseaux du Ruanda-Urundi II*. Astrida: Frères de la Charité, Groupe Scolaire.

BirdLife International. 2015. Country profile: Rwanda. [www.birdlife.org/datazone/country/rwanda](http://www.birdlife.org/datazone/country/rwanda), (accessed 29 August 2015).

Dowsett, R. J., Atkinson, P. W. & Caddick, J. A. 2015. Checklist of the birds of Rwanda. [www.africanbirdclub.org](http://www.africanbirdclub.org) (accessed 29 August 2015).

Kanyambwa, S. 2001. Rwanda. In Fishpool, L. D. C. & Evans, M. I. (eds.) *Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation*. Newbury: Pisces Publications & Cambridge, UK: BirdLife International.

Nsabimana, D., Tuyisingize, D. & Gasangwa, Y. 2013. Abundance, distribution and ecology of flycatchers in the arboretum of Ruhande in Rwanda. *Rwanda J., Ser. E: Agri. Sci.* 1: 62–72.

Vande weghe, J. P. & Vande weghe, G. R. 2011. *Birds in Rwanda: An Atlas and Handbook*. Kigali: Rwanda Development Board & Tielt, Belgium: Lannoo.

BP 1387, Abidjan 01, Côte d'Ivoire. E-mail: [boedtsbruno@yahoo.fr](mailto:boedtsbruno@yahoo.fr)

Received 29 August 2015; revision accepted 5 June 2016.

## Appendix 1. Bird species recorded around Huye, Rwanda, 1989–2015.

**Encounter rate:** C = common or quite common (species observed on every visit or >50% of visits in appropriate habitat and season); I = infrequently observed (<50% of visits in appropriate habitat); R = rare (1–3 records).

**Sites visited around Huye:** ● = in 1989–91, ● = in 2006 and 2015

Sequence and taxonomy follow Dowsett *et al.* (2015) with some amendments.

**Annexe 1.** Espèces d'oiseaux observées aux environs d'Huye, Rwanda, 1989–2015.

**Fréquence d'observation :** C = commun ou assez commun (espèce observée à chaque visite ou à >50% des visites dans le bon milieu et la période de l'année appropriée), I = irrégulièrement observé (<50% des visites dans le bon milieu), R = rare (1–3 observations).

**Lieux visités :** ● = environs d'Huye (en 1989–91), ● = environs d'Huye (en 2006 et 2015)

L'ordre et la taxonomie suivent Dowsett *et al.* (2015) avec certains amendements.

		Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)
<b>PODICIPEDIDAE</b>						
Little Grebe	<i>Tachybaptus ruficollis</i>	I	-	●	●	●
<b>PHALACROCORACIDAE</b>						
White-breasted Cormorant	<i>Phalacrocorax lucidus</i>	R	-	-	-	●
Reed Cormorant	<i>Phalacrocorax africanus</i>	R	-	-	●	●
<b>PELECANIDAE</b>						
Great White Pelican	<i>Pelecanus onocrotalus</i>	R	●	-	-	●
Pink-backed Pelican	<i>Pelecanus rufescens</i>	I	●	-	●	●
<b>ARDEIDAE</b>						
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	I	-	-	●	-
Squacco Heron	<i>Ardeola ralloides</i>	I	●	-	●	●
Cattle Egret	<i>Bubulcus ibis</i>	I	-	●	●	●
Little Egret	<i>Egretta garzetta</i>	C	●	●	-	●
Great Egret	<i>Ardea alba</i>	I	●	●	-	-
Purple Heron	<i>Ardea purpurea</i>	R	●	-	-	-
Grey Heron	<i>Ardea cinerea</i>	I	●	-	-	●
Black-headed Heron	<i>Ardea melanocephala</i>	C	●	●	●	●
<b>SCOPIIDAE</b>						
Hamerkop	<i>Scopus umbretta</i>	C	●	●	●	●
<b>CICONIIDAE</b>						
Yellow-billed Stork	<i>Mycteria ibis</i>	C	●	●	●	●
African Openbill	<i>Anastomus lamelligerus</i>	I	-	●	●	-
<b>THRESKIORNITHIDAE</b>						
Hadada Ibis	<i>Bostrychia hagedash</i>	C	●	●	●	●
Sacred Ibis	<i>Threskiornis aethiopicus</i>	C	●	●	●	●
African Spoonbill	<i>Platalea alba</i>	I	●	●	-	-
<b>ANATIDAE</b>						
White-faced Whistling Duck	<i>Dendrocygna viduata</i>	R	-	●	-	-
Yellow-billed Duck	<i>Anas undulata</i>	C	●	●	●	●
<b>ACCIPITRIDAE</b>						
Yellow-billed Kite	<i>Milvus migrans parasitus</i>	C	●	●	●	●
African Fish Eagle	<i>Haliaeetus vocifer</i>	C	●	●	●	●
Black-chested Snake Eagle	<i>Circaetus pectoralis</i>	R	-	-	-	●
Bateleur	<i>Terathopius ecaudatus</i>	R	-	●	-	-
African Harrier Hawk	<i>Polyboroides typus</i>	I	-	●	●	-
African Marsh Harrier	<i>Circus ranivorus</i>	R	-	●	-	-
African Goshawk	<i>Accipiter tachiro</i>	R	-	●	-	-
Little Sparrowhawk	<i>Accipiter minullus</i>	R	●	●	-	-
Black Sparrowhawk	<i>Accipiter melanoleucus</i>	I	-	●	●	●
Augur Buzzard	<i>Buteo augur</i>	C	●	●	●	●
Tawny Eagle	<i>Aquila rapax</i>	R	-	●	-	-
Ayres's Eagle	<i>Hieraetus ayresii</i>	R	-	●	●	-
Long-crested Eagle	<i>Lophoetus occipitalis</i>	C	-	●	●	●



		Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)			Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)
<b>FALCONIDAE</b>							<b>MUSOPHAGIDAE</b>						
Common Kestrel	<i>Falco tinnunculus</i>	I	-	●	●	-	Ross's Turaco	<i>Musophaga rossae</i>	R	-	●	●	●
Grey Kestrel	<i>Falco ardosiaceus</i>	I	●	-	●	-	<b>CUCULIDAE</b>						
Eurasian Hobby	<i>Falco subbuteo</i>	R	-	-	-	●	Levaillant's Cuckoo	<i>Clamator levaillantii</i>	R	-	●	-	-
African Hobby	<i>Falco cuvierii</i>	R	-	-	●	-	Red-chested Cuckoo	<i>Cuculus solitarius</i>	I	-	●	●	-
<b>PHASIANIDAE</b>							Klaas's Cuckoo	<i>Chrysococcyx klaas</i>	I	-	●	-	-
Red-winged Francolin	<i>Scleroptila levaillantii</i>	I	-	●	-	●	White-browed Coucal	<i>Centropus superciliosus</i>	I	-	●	-	●
<b>GRUIDAE</b>							<b>STRIGIDAE</b>						
Grey Crowned Crane	<i>Balearica regulorum</i>	I	-	●	●	●	Verreaux's Eagle Owl	<i>Bubo lacteus</i>	R	-	●	-	-
<b>JACANIDAE</b>							<b>APODIDAE</b>						
African Jacana	<i>Actophilornis africanus</i>	I	●	-	●	-	African Palm Swift	<i>Cypsiurus parvus</i>	I	-	-	●	-
<b>ROSTRATULIDAE</b>							White-rumped Swift	<i>Apus caffer</i>	I	-	●	-	-
Greater Painted-snipe	<i>Rostratula benghalensis</i>	R	-	-	-	●	Little Swift	<i>Apus affinis</i>	I	-	●	-	-
<b>RECURVIROSTRIDAE</b>							<b>COLIIDAE</b>						
Black-winged Stilt	<i>Himantopus himantopus</i>	C	●	-	-	●	Speckled Mousebird	<i>Colius striatus</i>	C	●	●	●	●
<b>CHARADRIIDAE</b>							<b>TROGONIDAE</b>						
Common Ringed Plover	<i>Charadrius hiaticula</i>	R	-	-	-	●	Narina's Trogon	<i>Apaloderma narina</i>	R	-	-	●	●
Three-banded Plover	<i>Charadrius tricollaris</i>	C	●	●	●	●	<b>ALCEDINIDAE</b>						
African Wattled Lapwing	<i>Vanellus senegallus</i>	I	-	●	●	-	Grey-headed Kingfisher	<i>Halcyon leucocephala</i>	R	-	●	-	-
Long-toed Lapwing	<i>Vanellus crassirostris</i>	C	●	●	●	●	Woodland Kingfisher	<i>Halcyon senegalensis</i>	I	-	●	-	-
<b>SCOLOPACIDAE</b>							African Pygmy Kingfisher	<i>Ispidina picta</i>	I	-	●	●	-
Little Stint	<i>Calidris minuta</i>	I	●	-	-	●	Malachite Kingfisher	<i>Corythornis cristatus</i>	C	●	●	●	●
Ruff	<i>Calidris pugnax</i>	R	-	-	-	●	Giant Kingfisher	<i>Megaceryle maxima</i>	I	-	●	●	-
Common Snipe	<i>Gallinago gallinago</i>	I	-	●	-	●	Pied Kingfisher	<i>Ceryle rudis</i>	C	●	●	●	●
Great Snipe	<i>Gallinago media</i>	R	-	-	-	●	<b>MEROPIIDAE</b>						
Common Greenshank	<i>Tringa nebularia</i>	C	●	●	-	●	Cinnamon-chested Bee-eater	<i>Merops oreobates</i>	C	●	●	●	●
Green Sandpiper	<i>Tringa ochropus</i>	I	●	-	-	●	Blue-cheeked Bee-eater	<i>Merops persicus</i>	R	-	●	-	-
Wood Sandpiper	<i>Tringa glareola</i>	C	●	●	-	●	<b>CORACIIDAE</b>						
Common Sandpiper	<i>Actitis hypoleucos</i>	C	●	●	●	●	Lilac-breasted Roller	<i>Coracias caudatus</i>	I	-	●	●	-
<b>COLUMBIDAE</b>							Broad-billed Roller	<i>Eurystomus glaucurus</i>	R	-	●	-	-
African Green Pigeon	<i>Treron calvus</i>	I	-	-	●	-	<b>PHOENICULIDAE</b>						
Tambourine Dove	<i>Turtur tympanistria</i>	C	-	-	●	-	Green Wood-hoopoe	<i>Phoeniculus purpureus</i>	R	-	●	-	-
Blue-spotted Wood Dove	<i>Turtur afer</i>	C	-	●	●	●	<b>BUCEROTIDAE</b>						
Speckled Pigeon	<i>Columba guinea</i>	I	-	-	●	-	African Grey Hornbill	<i>Tockus nasutus</i>	R	-	●	-	-
Red-eyed Dove	<i>Streptopelia semitorquata</i>	C	-	●	●	-	<b>CAPITONIDAE</b>						
Ring-necked Dove	<i>Streptopelia capicola</i>	C	●	●	●	-	Yellow-rumped Tinkerbird	<i>Pogonius bilineatus</i>	I	-	●	-	-
Laughing Dove	<i>Streptopelia senegalensis</i>	C	-	●	●	-	Spot-flanked Barbet	<i>Tricholaema lacrymosa</i>	I	-	●	●	-
<b>PSITTACIDAE</b>							<b>INDICATORIDAE</b>						
Meyer's Parrot	<i>Poicephalus meyeri</i>	I	-	●	●	●	Lesser Honeyguide	<i>Indicator minor</i>	I	-	●	-	●

		Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)			Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)
<b>PICIDAE</b>							<b>ACROCEPHALIDAE</b>						
Red-throated Wryneck	<i>Jynx ruficollis</i>	I	●	●	●	-	African Yellow Warbler	<i>Iduna natalensis</i>	I	●	●	●	-
Cardinal Woodpecker	<i>Dendropicos fuscescens</i>	I	-	●	●	●	<b>CISTICOLIDAE</b>						
Bearded Woodpecker	<i>Dendropicos namaquus</i>	R	-	●	-	-	Green-backed Camaroptera	<i>Camaroptera brachyura</i>	I	-	●	-	-
<b>HIRUNDINIDAE</b>							Singing Cisticola						
White-headed Saw-wing	<i>Psalidoprocne albiceps</i>	I	●	●	●●	-	Chubb's Cisticola	<i>Cisticola chubbi</i>	C	●	●	●●	●
Common Sand Martin	<i>Riparia riparia</i>	R	-	●	-	-	Winding Cisticola	<i>Cisticola galactotes</i>	I	●	●	-	-
Mosque Swallow	<i>Cecropis senegalensis</i>	R	-	●	-	-	Stout Cisticola	<i>Cisticola robustus</i>	I	●	●	-	●
Lesser Striped Swallow	<i>Cecropis abyssinica</i>	I	-	●	●	-	Grey-capped Warbler	<i>Eminia lepida</i>	I	-	●	●	-
Red-rumped Swallow	<i>Cecropis daurica</i>	R	-	●	-	-	<b>MUSCICAPIDAE</b>						
Rock Martin	<i>Ptyonoprogne fulgula</i>	I	●	●	-	-	White-eyed Slaty Flycatcher	<i>Melaenornis fisheri</i>	C	●	●	●●	●
Wire-tailed Swallow	<i>Hirundo smithii</i>	I	●	-	●	●	Southern Black Flycatcher	<i>Melaenornis pammelaina</i>	I	●	●	●●	-
Angola Swallow	<i>Hirundo angolensis</i>	C	-	●	●	●	Spotted Flycatcher	<i>Muscicapa striata</i>	R	-	-	●	●
Barn Swallow	<i>Hirundo rustica</i>	I	-	●	-	-	Dusky-brown Flycatcher	<i>Muscicapa adusta</i>	C	-	●	●	-
<b>MOTACILLIDAE</b>							<b>STENOSTIRIDAE</b>						
Yellow Wagtail	<i>Motacilla flava</i>	I	-	-	-	●	White-tailed Blue Flycatcher	<i>Eminia albicauda</i>	I	-	●	●	●
Cape Wagtail	<i>Motacilla capensis</i>	I	-	●	-	-	<b>MONARCHIDAE</b>						
Mountain Wagtail	<i>Motacilla clara</i>	R	-	●	-	-	African Paradise-flycatcher	<i>Terpsiphone viridis</i>	C	●	●	●	●
White Wagtail	<i>Motacilla alba</i>	R	-	-	-	●	<b>PLATYSTEIRIDAE</b>						
African Pied Wagtail	<i>Motacilla aguimp</i>	I	●	●	-	-	Brown-throated Wattle-eye	<i>Platysteira cyanea</i>	I	●	●	●	●
Plain-backed Pipit	<i>Anthus leucophrys</i>	I	-	●	-	-	Chinspot Batis	<i>Batis molitor</i>	I	-	●	●	-
Yellow-throated Longclaw	<i>Macronyx croceus</i>	I	-	●	●	●	<b>LEIOTHRICHIDAE</b>						
<b>CAMPEPHAGIDAE</b>							Arrow-marked Babbler						
Black Cuckooshrike	<i>Campephaga flava</i>	I	-	●	-	-	Black-lored Babbler	<i>Turdoides sharpei</i>	C	-	●	●	●
<b>PYCNONOTIDAE</b>							<b>NECTARINIIDAE</b>						
Yellow-throated Leaflove	<i>Chlorocichla flavicollis</i>	I	-	-	●	-	Green-headed Sunbird	<i>Cyanomitra verticalis</i>	C	●	●	●●	●
Common Bulbul	<i>Pycnonotus barbatus</i>	C	●	●	●●	●	Olive Sunbird	<i>Cyanomitra olivacea</i>	R	-	-	●	-
<b>TURDIDAE</b>							Scarlet-chested Sunbird						
Cape Robin Chat	<i>Cossypha caffra</i>	R	-	-	-	●	Bronzy Sunbird	<i>Chalcomitra senegalensis</i>	C	●	●	●	●
White-browed Robin Chat	<i>Cossypha heuglini</i>	C	●	●	●●	●	Collared Sunbird	<i>Nectarinia kilimensis</i>	C	●	●	●	●
Red-capped Robin Chat	<i>Cossypha natalensis</i>	I	-	-	●	-	Variable Sunbird	<i>Hedydipna collaris</i>	C	●	●	●	●
White-browed Scrub Robin	<i>Cercotrichas leucophrys</i>	I	●	●	●	●	Olive-bellied Sunbird	<i>Cinnyris venustus</i>	I	-	●	●	-
Common Stonechat	<i>Saxicola torquatus</i>	C	●	●	●	●	<b>ZOSTEROPIDAE</b>						
Miombo Rock Thrush	<i>Monticola angolensis</i>	R	-	-	●	-	African Yellow White-eye	<i>Zosterops senegalensis</i>	C	-	●	●	-
Sooty Chat	<i>Myrmecocichla nigra</i>	I	-	●	●	-	<b>LANIIDAE</b>						
Ruaha Chat	<i>Myrmecocichla collaris</i>	R	-	-	●	-	Grey-backed Fiscal	<i>Lanius excubitorius</i>	I	-	●	●	-
African Thrush	<i>Turdus pelios</i>	I	-	-	●●	-	Mackinnon's Shrike	<i>Lanius mackinnoni</i>	C	●	●	●●	●
Abyssinian Thrush	<i>Turdus abyssinicus</i>	R	-	●	-	●	Common Fiscal	<i>Lanius collaris</i>	C	●	●	●●	●

		Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)			Encounter rate	Short dry season (Jan–Feb)	Long rainy season (Mar–June)	Long dry season (Jul–Sep)	Short rainy season (Oct–Dec)
<b>MALACONOTIDAE</b>													
Brown-crowned Tchagra	<i>Tchagra australis</i>	I	-	●	-	-	Village Weaver	<i>Ploceus cucullatus</i>	I	-	-	●	-
Black-crowned Tchagra	<i>Tchagra senegalus</i>	I	-	●	-	-	Black-headed Weaver	<i>Ploceus melanocephalus</i>	I	-	●	-	-
Northern Puffback	<i>Dryoscopus gambensis</i>	I	-	-	●	-	Grosbeak Weaver	<i>Amblyospiza albifrons</i>	I	●	●	●	-
Tropical Boubou	<i>Laniarius (aethiopicus) major</i>	I	-	●	●	-	Southern Red Bishop	<i>Euplectes orix</i>	R	-	●	-	-
Black-headed Gonolek	<i>Laniarius erythrogaster</i>	I	-	●	-	-	Yellow Bishop	<i>Euplectes capensis</i>	I	●	-	●	-
<b>ORIOLIDAE</b>													
Eastern Black-headed Oriole	<i>Oriolus larvatus</i>	R	-	●	●	-	Red-collared Widowbird	<i>Euplectes ardens</i>	R	-	-	●	-
African Golden Oriole	<i>Oriolus auratus</i>	I	-	●	-	-	Fan-tailed Widowbird	<i>Euplectes axillaris</i>	C	●	●	●	●
<b>DICRURIDAE</b>							<b>ESTRILIDAE</b>						
Fork-tailed Drongo	<i>Dicrurus adsimilis</i>	I	●	●	●	-	Grey-headed Negrofinch	<i>Nigrita canicapillus</i>	R	-	●	-	-
<b>CORVIDAE</b>													
Pied Crow	<i>Corvus albus</i>	C	●	●	●	●	Yellow-bellied Waxbill	<i>Coccyzygia quartinia</i>	I	-	●	-	●
<b>STURNIDAE</b>													
Rüppell's Glossy Starling	<i>Lamprotomis purpuroptera</i>	I	-	●	●	-	Fawn-breasted Waxbill	<i>Estrilda paludicola</i>	I	●	●	-	-
Violet-backed Starling	<i>Cinnyricinclus leucogaster</i>	I	-	●	●	-	Common Waxbill	<i>Estrilda astrild</i>	C	-	●	●	●
<b>PASSERIDAE</b>													
Northern Grey-headed Sparrow	<i>Passer griseus</i>	C	●	●	●	●	Black-crowned Waxbill	<i>Estrilda nonnula</i>	I	-	-	●	●
<b>PLOCEIDAE</b>													
Red-headed Weaver	<i>Anaplectes rubriceps</i>	R	-	●	-	-	Red-cheeked Cordon-bleu	<i>Uraeginthus bengalus</i>	C	-	●	●	-
Baglafaecht Weaver	<i>Ploceus baglafaecht</i>	I	-	●	●	●	Green-winged Pytilia	<i>Pytilia melba</i>	I	-	●	●	-
Black-necked Weaver	<i>Ploceus nigricollis</i>	R	-	-	●	-	Red-billed Firefinch	<i>Lagonosticta senegala</i>	C	●	●	●	●
Spectacled Weaver	<i>Ploceus ocularis</i>	I	-	●	●	●	African Firefinch	<i>Lagonosticta rubricata</i>	I	-	●	-	●
Holub's Golden Weaver	<i>Ploceus xanthops</i>	I	●	●	●	●	Bronze Mannikin	<i>Spermestes cucullata</i>	C	-	●	●	●
Lesser Masked Weaver	<i>Ploceus intermedius</i>	I	-	●	●	-	Black-and-white Mannikin	<i>Spermestes bicolor</i>	C	●	●	●	-
Veillot's Black Weaver	<i>Ploceus nigerrimus</i>	I	●	●	-	●	<b>VIDUIDAE</b>						
							Pin-tailed Whydah						
							Village Indigobird						
							<b>FRINGILLIDAE</b>						
							Western Citril						
							Yellow-fronted Canary						
							Brimstone Canary						
							Thick-billed Seedeater						
							<b>EMBERIZIDAE</b>						
							Golden-breasted Bunting						
							Cinnamon-breasted Bunting						