Notes on the birds of Equatorial Guinea, including nine first country records

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Notes sur les oiseaux de la Guinée équatoriale, dont neuf espèces nouvelles pour le pays. À l'occasion d'inventaires effectués en Guinée équatoriale continentale et sur l'île de Bioko en novembre 2013 et décembre 2014, 246 espèces d'oiseaux ont été recensées, dont six étaient nouvelles pour le pays (Aigle de Wahlberg *Hieraaetus wahlbergi*, Chouette-pêcheuse de Pel *Scotopelia peli*, Indicateur à queue-en-lyre *Melichneutes robustus*, Bulbul à gorge claire *Atimastillas flavicollis*, Hirondelle d'Éthiopie *Hirundo aethiopica* et Tisserin à lunettes *Ploceus ocularis*). Des nouvelles données concernant l'aire de répartition et l'étendue altitudinale de plusieurs espèces ont été notées. Des observations récentes importantes effectuées par d'autres observateurs sont mentionnées, parmi lesquelles trois additions supplémentaires à l'avifaune du pays (Anserelle naine *Nettapus auritus*, Tourterelle maillée *Streptopelia senegalensis* et Capucin pie *Spermestes fringilloides*).

Summary. During surveys of mainland Equatorial Guinea and Bioko in November 2013 and December 2014, 246 bird species were recorded, including six that were new for the country (Wahlberg's Eagle *Hieraaetus wahlbergi*, Pel's Fishing Owl *Scotopelia peli*, Lyre-tailed Honeyguide *Melichneutes robustus*, Yellow-throated Leaflove *Atimastillas flavicollis*, Ethiopian Swallow *Hirundo aethiopica* and Spectacled Weaver *Ploceus ocularis*). We also extended the distribution and elevational range of several species within the country. Important recent sightings by other observers are also listed, including three other additions to the country's avifauna (African Pygmy Goose *Nettapus auritus*, Laughing Dove *Streptopelia senegalensis* and Magpie Mannikin *Spermestes fringilloides*).

Equatorial Guinea is among the world's most poorly surveyed countries from an ornithological perspective (Pérez del Val 2001). The country comprises three separate regions: the relatively well-known island of Bioko, the seldom-visited island of Annobón, and the largely unsurveyed mainland, commonly referred to as Río Muni or the Región Continental. Over the past 15 years, the small amount of ornithological work completed within the country has added several species to its avifauna (Pérez del Val et al. 1997, Dowsett-Lemaire & Dowsett 1999, Larison et al. 1999). Most of this previous work was conducted on Bioko, where surveys were biased towards the more accessible areas (Pérez del Val 1996, Lenton et al. 2000, Zafra-Calvo et al. 2010).

In November 2013 and December 2014, we conducted surveys near Parque Nacional de los Altos de Nsork (PNLAN, Región Continental) and maintained daily lists of audio-visual records for other localities in the Región Continental and Bioko. The results are presented here.

Study Areas and Methods

Our field work was principally undertaken in the Región Continental, along the southern edge of PNLAN, Wele-Nzas (c.550 m) in the extreme south-east, and on Bioko, in the vicinity of the Bioko Biodiversity Protection Program (BBPP) field station north of Moka, at c.1,400 m, Bioko Sur. In the Región Continental, we were based in Bata before travelling to the southern edge of PNLAN, not far from the only other surveys conducted in the region (Larison et al. 1999). During our brief time in PNLAN in 2013, we conducted limited mist-netting operations and audio-visual surveys over three days while scouting locations for future work. When we returned in 2014, we surveyed 16 localities in PNLAN, split equally between primary and secondary forest. At each site we set up six 12×3 m mist-nets for five hours, for a total of 30 mist-net hours per site. The avifauna of each site was further assessed with two 20-minute area searches, the results of which were uploaded into eBird at the coordinates of each mistnet-line's centre. These results were supplemented with daily lists of all species seen or heard in the same general area as mist-netting and surveys were

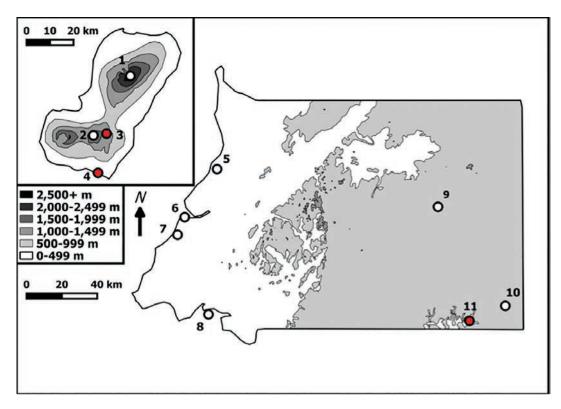


Figure 1. Map of localities in Equatorial Guinea visited in November 2013 and December 2014: (1) Parque Nacional del Pico Basilé; (2) Pico Biao; (3) Bioko Biodiversity Protection Program field station, Moka; (4) Moaba; (5) Bata; (6) Mbini; (7) Reserva Natural de Punta Llende; (8) Río Muni Estuary; (9) Oyala (Djibloho); (10) Nsork (town); (11) Parque Nacional de los Altos de Nsork. White dots represent localities where only audio-visual observations were made; red dots represent those where mist-netting was also undertaken. Map based on Natural Earth and ESRI World Topographic base maps.

Carte des localités en Guinée équatoriale visitées en novembre 2013 et décembre 2014 : (1) Parque Nacional del Pico Basilé ; (2) Pico Biao ; (3) station de terrain du Bioko Biodiversity Protection Program, Moka ; (4) Moaba ; (5) Bata ; (6) Mbini ; (7) Reserva Natural de Punta Llende; (8) estuaire du Río Muni ; (9) Oyala (Djibloho) ; (10) Nsork (ville); (11) Parque Nacional de los Altos de Nsork. Les points blancs représentent les localités où des observations audiovisuelles ont été effectuées, les points rouges celles où des captures au filet japonais ont également été effectuées. Carte basée sur les cartes de base topographiques Natural Earth et ESRI World.

conducted. Furthermore, we made short visits to the university under construction at Oyala, Wele-Nzas, to the Río Muni estuary upstream from Cogo (an area known as Cuatro Ríos), and to the *praderas* (coastal grasslands) within the Reserva Natural de Punta Llende (hereafter Punta Llende). On Bioko, we conducted audio-visual surveys and small-scale banding operations at the BBPP station (2013: 160 mist-net hours over four days; 2014: 90 mist-net hours over two days; *c.6* hours covering *c.2* km of trail), travelled to the montane forests on Pico Biao (one day each in 2013 and 2014; *c.6* hours covering *c.4* km of trail), and hiked to the southern coast (where observations were largely incidental due to heavy rain). We also spent two hours covering c.2 km of road at 2,000 m on Pico Basilé. Localities are shown in Fig. 1.

Audio-visual surveys and area searches were primarily conducted by JCC. Informal surveys utilised road cuts and existing forest trails around the banding locations, whereas area searches were confined to a 50-m radius around the centre of the locality's mist-net line. Whenever possible, photographs were taken and audio-recordings made. Mist-netting locations were chosen primarily by forest quality and, secondarily, by their ability to bisect vegetation for understorey birds along existing forest trails; mist-nets were primarily run by LLP & JDW with help from two Equatoguinean field technicians from INDEFOR-AP. Mist-netted birds were photographed and measured.

Daily lists and surveys have been made publicly available via eBird (http://ebird.org/ebird/country/ GQ?yr=all; eBird 2012). Checklists contain specific GPS coordinates for all sightings, and are linked to photographs and sound-recordings obtained at each location. All recordings are available at Xeno-Canto (with archival numbers 'XC###' listed under the relevant species).

Results

In total, we recorded 246 species—214 in the Región Continental and 111 on Bioko (see Appendix 1)—and mist-netted 396 birds representing 49 taxa (Appendix 2). Details of the most significant records are given below.

Wahlberg's Eagle Hieraaetus wahlbergi

One observed near Econg, at the southern edge of PNLAN, on 13 December 2014 (Fig. 2). First record for Equatorial Guinea.

Common Greenshank Tringa nebularia

A *Tringa* sandpiper flushed at the mouth of the Río Eola, east of Ureca, on the night of 21–22 November 2013 was identified by call as this species. Second record for Bioko, the first being in 1943 (Pérez del Val 1996). The species is a locally common migrant on the mainland and is probably regular on Bioko.

Wood Sandpiper Tringa glareola

One near a dammed creek along a road under construction at Liana de Agua, Wele Nzas, on 28 November 2013 (Fig. 3). First record for the Región Continental and the first for Equatorial Guinea since 1939 (Pérez del Val 1996).

Klaas's Cuckoo Chrysococcyx klaas

One at *c*.2,000 m on Pico Basilé on 30 November 2013 and a pair at *c*.1,600 m on Pico Biao on 23 December 2014 (XC209711). Previously known to occur up to *c*.1,400 m (Pérez del Val 1996).

Pel's Fishing Owl Scotopelia peli

One gave a drawn-out series of low hoots at the edge of a palm swamp within PNLAN on 15–16 December 2014 (XC283909) and another was

heard distantly in mature secondary forest *c*.2 km to the east-southeast on 17 December 2014. First records for Equatorial Guinea. The species is probably a rare resident in the eastern Región Continental.

Unidentified swift Apus sp.

Apus swifts with overall black bodies and darker wings were repeatedly seen in November 2013 and December 2014. A bird observed at close range on 26 November called several times, giving African Black Swift *A. barbatus*-like calls. Poorquality photographs were obtained that do not permit specific identification but do eliminate Bates's Swift *A. batesi* and other resident swifts. Additional observations confirmed that the birds were not Common Swifts *A. apus*. Based on our field notes, we suspect they were Fernando Po Swifts *A. sladeniae*.

Speckled Tinkerbird Pogoniulus scolopaceus

Observed near the BBPP field station at c.1,400 m on 19–20 November 2013. Previously noted up to c.1,000 m (Pérez del Val (1996).

Lyre-tailed Honeyguide Melichneutes robustus

A displaying male was heard in secondary forest near PNLAN on 13 December 2014 and another in primary forest in PNLAN on 15 December. Identified by the distinctive, accelerating series of nasal sounds, which matched published recordings (Chappuis 2000). First records for Equatorial Guinea.

Kestrel sp. Falco naumanni | tinnunculus

A falcon *Falco* sp. mobbed by Pied Crows *Corvus albus* was seen at Bata Airport on 25 November 2013. It had a long tail, whitish underwings, bluegrey upperwings and tail, and a rufous body. No photographs could be taken. It was either a Lesser or a Common Kestrel; neither species has been previously recorded in Equatorial Guinea.

Grey Parrot Psittacus erithacus

Still quite common in Bioko Sur, with flocks of 30–50 seen daily at the BBPP field station. Markedly less common in the Región Continental, where observed at Mbolozoc and Liana de Agua in Wele-Nzas. The Región Continental may prove vital by potentially serving as a source population for neighbouring areas with depleted



Figure 2. Wahlberg's Eagle / Aigle de Wahlberg *Hieraaetus wahlbergi*, Parque Nacional de los Altos de Nsork, Wele-Nzas, Equatorial Guinea, 13 December 2014 (Jacob C. Cooper)



Figure 3. Second country record (and first for the Región Continental) of Wood Sandpiper *Tringa glareola*, Parque Nacional de los Altos de Nsork, Wele-Nzas, Equatorial Guinea, 28 November 2013 (Jacob C. Cooper)

Deuxième mention pour le pays (et la première pour la Región Continental) du Chevalier sylvain *Tringa glareola*, Parque Nacional de los Altos de Nsork, Wele-Nzas, Guinée équatoriale, 28 novembre 2013 (Jacob C. Cooper)



Figure 4. Ethiopian Swallow *Hirundo aethiopica*, Nsork, at south-east border of Parque Nacional de los Altos de Nsork, Wele-Nzas, Equatorial Guinea, 6 December 2014 (Jacob C. Cooper)

Hirondelle d'Éthiopie *Hirundo aethiopica*, Nsork, à la limite sud-est du Parque Nacional de los Altos de Nsork, Wele-Nzas, Guinée équatoriale, 6 décembre 2014 (Jacob C. Cooper)

Grey Parrot numbers. The ruggedness of Bioko makes trapping birds impractical, and may ensure the continued survival of this isolated, yet sizeable, population.

Bioko Batis Batis poensis

A male, foraging in the canopy adjacent to a clearing along the Biao Trail above Moka at *c*.1,300 m, was observed for several minutes on 19 November 2013 and again on 23 December 2014, when it was carrying food. The nominate race is a widespread, albeit rarely encountered, resident endemic on Bioko that was previously known to occur up to 1,100 m (Pérez del Val 1996).

Grey Cuckooshrike Coracina caesia

One in a mixed-species flock in montane forest on the upper slopes of Pico Biao at *c*.1,600 m, on 19 November 2013. There are just four previous records: three from the Pico Biao–Moka area and one from Pico Basilé (Pérez del Val 1996). Probably more widespread, and its apparent rarity may be due to the inaccessibility of montane regions.

Slender-billed Greenbul Stelgidillas gracilirostris

An individual that appeared to be ill was trapped at the BBPP field station at c.1,400 m on 20 November 2013. Usually encountered below c.400 m (Pérez del Val (1996).

Yellow-throated Leaflove Atimastillas flavicollis

A family group of these large, pale-throated greenbuls was foraging at the edge of a treefall gap in PNLAN on 15 December 2014 and another group was seen two days later in secondary forest immediately south of PNLAN. Calls matched published recordings (Chappuis 2000). First records for Equatorial Guinea.

Ethiopian Swallow Hirundo aethiopica

Several pairs were observed in the town of Nsork, Wele-Nzas, on 6 December 2014 (Fig. 4). First record for Equatorial Guinea, in keeping with the species' recent range expansion (Turner 2004).

Red-chested Swallow Hirundo lucida

One in the port town of Cogo on 29 November 2013. A discontinuously distributed pan-African species, it is included on the ABC checklist on the basis of a single sight record (Shirley & Harter in prep.).

Preuss's Cliff Swallow Petrochelidon preussi

We found a colony of *c*.100 individuals in Mbini, south of the mouth of the Río Wele, and observed foraging birds in adjacent open areas. The extent of the species' breeding range in Equatorial Guinea is unknown.

Willow Warbler Phylloscopus trochilus

One on Pico Basilé at c.2,000 m on 30 November 2013, foraging in vines adjacent to the road. There are just three previous records for Bioko: two specimens collected in November and December 1902 and one sighting in December–January 1966 / 67 (Pérez del Val 1996).

Black-capped Apalis Apalis nigriceps

One at the BBPP field station on 20 November 2013, foraging in low scrub, at the edge of cultivation beside a tract of riparian woodland. An uncommon resident, which was rarely recorded prior to Pérez del Val's (1996) field work, and he found it at just a few localities, the BBPP field station being near one of these.

Garden Warbler Sylvia borin

One on Pico Biao on 19 November 2013, one mist-netted at the BBPP field station on 22 December 2014, and five observed on Pico Biao on 23 December 2014. There are just two previous records for Bioko (Pérez del Val 1996). A common Palearctic migrant in neighbouring countries, which probably occurs regularly on Bioko.

Spectacled Weaver Ploceus ocularis

One observed at close range in an urban garden in Bata on 9 December 2014. It was identified by its yellow eye, head more orange than body, and distinct black eyestripe (bolder than in Orange Weaver *P. aurantius*) extending from a sharp black bill. Although the species is stated to occur in Equatorial Guinea by Fry & Keith (2004), there are no documented previous records (Dowsett *et al.* 2015). It is widespread in neighbouring Cameroon (Borrow & Demey 2014).

Magpie Mannikin Spermestes fringilloides

A foraging flock of *c*.30 birds was photographed near Mbolozoc, Wele-Nzas, on 13 December 2014. Third record for Equatorial Guinea (see below).

Noteworthy records by other observers

In the course of research for our visits, we located the following noteworthy records.

African Pygmy Goose Nettapus auritus

One photographed at Moaba on 7 November 2014 (Guenthner 2014). First record for Equatorial Guinea.

Osprey Pandion haliaetus

One south-west of Luba on 15 March 2006 and another at Playa Moraka from 20 October 2014 to 9 March 2015 (Langrand 2006, Hart 2014a). First and second records for Bioko.

African Fish Eagle Haliaeetus vocifer

A pair south-west of Luba on 15 March 2006 and another pair at Playa Moraka on 19 December 2014 (Langrand 2006, Hart 2014b). Second and third records for Bioko.

African Skimmer Rynchops flavirostris

One at 'Playa C' west of Ureca on 28 October 2014 (Cronin 2014). First record for Bioko.

Laughing Dove Streptopelia senegalensis

One at Playa Moraka on 8 March 2015 (Hart 2015). First record for Equatorial Guinea.

Magpie Mannikin Spermestes fringilloides

Two on 12 June 2002 and one the next day at the eastern edge of Parque Nacional de Monte Alen, Región Continental (Yale Peabody Museum, New Haven, CT: 100576, 100642, 137903). First records for Equatorial Guinea.

Discussion

In recent years, the massive influx of oil revenue in Equatorial Guinea has led to rapid infrastructural development. Several locations we visited that were once several days' travel from Bata are now merely hours away. Development has led to increased forest clearance and the accessibility of new regions to bushmeat hunting. Road building is occurring at a phenomenal rate, and we witnessed the clearing of old-growth forest for road development. The government is actively countering this development with the preservation of several sizeable areas as national parks and increasing awareness of conservation programmes. Additionally, anti-poaching regulations are being enforced at a heretofore unprecedented level and the government is working towards improved protection for the country's biodiversity (Fernández & McCabe 2013). There was a marked decrease in poached animals available for purchase between our visits in 2013 and 2014, and anti-poaching signs are now a regular sight near protected areas. The government's resolve to protect the country's natural areas became evident when we encountered illegal loggers in Punta Llende. Our co-worker from the Instituto Nacional de Desarrollo Forestal y Manejo del Sistema de Áreas Protegidas (INDEFOR-AP), Cayetano Ebana Ebana Alene, immediately confronted the group and confiscated five chainsaws while we were present. The experience not only revealed difficulties in maintaining protected areas in the region, but illustrated the zeal of local conservationists for preserving Equatorial Guinea's natural capital.

Many national park localities have surprising diversity for being so accessible, and well illustrate their ability to protect the region's diversity thus far. At Akoc Esakira, PNLAN, we found two unoccupied Grey-necked Rockfowl *Picathartes oreas* nests within several hundred metres of the road. Additionally, while banding on a roadside trail, our guides informed us

that Western Lowland Gorillas Gorilla gorilla occur and can often be heard. In the area, however, a large amount of bushmeat hunting for personal subsistence occurs, and we observed a hunting blind and a poacher in PNLAN. During our travels, several local people admitted eating hornbills (Bucerotidae) and we found a dead Great Blue Turaco Corythaeola cristata in a local market. These species, while common in relatively remote regions, are noticeably rarer and shyer in more accessible areas. While the pressure is not nearly as great on local bird populations as it is on mammals, species will undoubtedly be affected by increased hunting pressure as previously remote areas become more accessible (Albrechtsen et al. 2007, Whytock et al. 2014).

Knowledge regarding shorebirds in Equatorial Guinea is poor and potentially crucial wintering grounds remain insufficiently surveyed (Pérez del Val 2001). Our few observations of waterbirds (e.g. Wood Sandpiper) are some of the only observations of these species in the country. These birds certainly occur more frequently, and their current status in the country is a reflection of poor observer coverage.

It is to be expected that many bird species associated with open country will become more common as development progresses. Forest fragmentation will increase, possibly leading to local extinctions of forest-dependent species. Further work is required to quantify the effects of development on local birdlife and ensure continued protection of the region's biodiversity.

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References

- African Bird Club. 2014. Equatorial Guinea. www. africanbirdclub.org (accessed 6 February 2014).
- Albrechtsen, L., Macdonald, D. W., Johnson, P. J., Castelo, R. & Fa, J. E. 2007. Faunal loss from bushmeat hunting: empirical evidence and policy implications in Bioko Island. *Environ. Sci. & Policy* 10: 654–667.
- Borrow, N. & Demey, R. 2014. Field Guide to the Birds of Western Africa. Second edn. Princeton, NJ: Princeton University Press.
- BirdLife International. 2014. Species factsheet: *Psittacus erithacus.* www.birdlife.org (accessed 5 February 2014).
- Boyes, S. 2013. Unsustainable Grey Parrot trade in South Africa. *Natl. Geogr. Explorer's J.* http:// voices.nationalgeographic.com/2013/03/19/ unsustainable-grey-parrot-trade-in-south-africa/
- Chappuis, C. 2000. African Bird Sounds: Birds of North, West and Central Africa and Neighbouring Atlantic Islands. 15 CDs. Paris: Société d'Études Ornithologiques de France & London, UK: British Library.
- Cronin, D. 2014. eBird checklist: http://ebird.org/ ebird/view/checklist?subID=S20758044. eBird: an online database of bird distribution and abundance. eBird, Ithaca, NY. www.ebird.org (accessed 5 October 2015).
- Dowsett, R. J., Atkinson, P. W. & Caddick, J. A. 2015. Checklist of the birds of Equatorial Guinea. www. africanbirdclub.org (accessed 25 September 2015).
- Dowsett-Lemaire, F. & Dowsett, R. J. 1999. Birds of the Parque Nacional de Monte Alen, mainland Equatorial Guinea, with an updating of the country's list. *Alauda* 67: 179–188.
- eBird. 2012. eBird: an online database of bird distribution and abundance. eBird, Cornell Lab of Ornithology, Ithaca, NY. www.ebird.org.
- Fernández, D. & McCabe, G. 2013. Recent cases of implementation of the law regulating the hunting of bushmeat on Bioko Island, Equatorial Guinea. Unpubl. rep. Bioko Biodiversity Protection Program, Philadelphia, PA.
- Fry, C. H. & Keith, S. (eds.) 2004. *The Birds of Africa*. Vol. 7. London, UK: Christopher Helm.
- Gill, F. & Donsker, D. (eds.) 2015. IOC World Bird List (v. 5.4). www.worldbirdnames.org.

- Guenthner, G. 2014. eBird checklist: http://ebird.org/ ebird/view/checklist?subID=S25318670. eBird: An online database of bird distribution and abundance. eBird, Ithaca, NY. www.ebird.org (accessed 9 October 2015).
- Hart, C. 2014. eBird checklist: http://ebird.org/ebird/ view/checklist?subID=S25222567. eBird: an online database of bird distribution and abundance. eBird, Ithaca, NY. www.ebird.org (accessed 6 October 2015).
- Hart, C. 2014. eBird checklist: http://ebird.org/ebird/ view/checklist?subID=S25222517. eBird: an online database of bird distribution and abundance. eBird, Ithaca, NY. www.ebird.org (accessed 6 October 2015).
- Hart, C. 2014. eBird checklist: http://ebird.org/ebird/ view/checklist?subID=S25222635. eBird: an online database of bird distribution and abundance. eBird, Ithaca, NY. www.ebird.org (accessed 6 October 2015).
- Langrand, O. 2006. eBird checklist: http://ebird.org/ ebird/view/checklist?subID=S12580288. eBird: an online database of bird distribution and abundance. eBird, Ithaca, NY. www.ebird.org (accessed 5 October 2015).
- Larison, B., Smith, T. B., Girman, D., Stauffer, D., Milá, B., Drewes, R. C., Griswold, C. E., Vindum, J. V., Ubick, D., O'Keefe, K., Nguema, J. & Henwood, L. 1999. Biotic surveys of Bioko and Rio Muni, Equatorial Guinea. Unpubl. rep. Biodiversity Support Program. http://hdl.handle. net/1834/303 (accessed 5 February 2014).
- Lenton, S. M., Fa, J. E. & Pérez del Val, J.. 2000. A simple non-parametric GIS model for predicting species distribution: endemic birds in Bioko Island, West Africa. *Biodiver. & Conserv.* 9: 869–885.
- Lepage, D. 2014. Avibase the world bird database. http://avibase.bsc.eoc.org (accessed 8 February 2014).
- Pérez del Val, J. 1996. Las Aves de Bioko, Guinea Ecuatorial: Guía de Campo. León: Edilesa.
- Pérez del Val, J. 2001. Equatorial Guinea. 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.
- Pérez del Val, J., Castroviejo, J. & Purroy, F. J. 1997. Species rejected from and added to the avifauna of Bioko Island (Equatorial Guinea). *Malimbus* 19: 19–31.
- Shirley, M. H. & Harter, B. B. in prep. Notable sightings in mainland Equatorial Guinea.

- Turner, A. K. 2004. Family Hirundinidae (swallows and martins). In del Hoyo, J., Elliott, A. & Christie, D. A. (eds.) Handbook to the Birds of the World. Vol. 9. Barcelona: Lynx Edicions.
- Whytock, R. C., Buij, R., Virani, M. Z. & Morgan, B. J. 2014. Do large birds experience previously undetected levels of hunting pressure in the forests of Central and West Africa? Oryx 50: 76-83.
- Zafra-Calvo, N., Lobo, J. M., Suzart de Albuquerque, F., Cabezas, F., Espigares, T., Olalla-Tárraga, M. Á., Pérez del Val, J., Rueda, M., Velayos, M. & Rodríguez, M. Á. 2010. Deriving species richness, endemism, and threatened species patterns from incomplete distribution data in the Bioko Island, Equatorial Guinea. Natureza & Conservação 8: 1-5.

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Appendix 1. Bird species recorded in Equatorial Guinea, November 2013 and December 2014.

Sequence and scientific nomenclature generally follow Gill & Donsker (2015). English names are those used in Borrow & Demey (2014).

Additions to the avifauna of Equatorial Guinea are marked *.

Annexe 1. Espèces d'oiseaux observées en Guinée éguatoriale en novembre 2013 et décembre 2014.

L'ordre et la nomenclature scientifiques suivent en général Gill & Donsker (2015). Les noms anglais sont ceux utilisés dans Borrow & Demey (2014). Les additions à l'avifaune de la Guinée équatoriale sont marquées d'un *.

		Bioko	Río Muni
ANATIDAE			
Hartlaub's Duck	Pteronetta hartlaubii		Х
PHASIANIDAE			
Latham's Forest Francolin	Peliperdix lathami		Х
Scaly Francolin	Pternistis squamatus		Х
PODICIPEDIDAE			
Little Grebe	Tachybaptus ruficollis	Х	
CICONIIDAE			
Woolly-necked Stork	Ciconia episcopus		Х
THRESKIORNITHIDAE			
Hadada Ibis	Bostrychia hagedash	Х	Х

		Bioko	Río Muni
ARDEIDAE			
Green-backed Heron	Butorides striata	Х	Х
Cattle Egret	Bubulcus ibis	Х	Х
Grey Heron	Ardea cinerea		Х
Black-headed Heron	Ardea melanocephala		Х
Great Egret	Ardea alba		Х
Little Egret	Egretta garzetta		Х
Western Reef Heron SCOPIDAE	Egretta gularis	Х	Х
Hamerkop	Sconus umbratta		Х
	Scopus umbretta		^
Pink-backed Pelican	Pelecanus rufescens		Х
PHALACROCORACIDAE			
Long-tailed Cormorant	Microcarbo africanus		Х
African Harrier Hawk	Polyboroides typus		Х
Palm-nut Vulture	Gypohierax angolensis	Х	X
Congo Serpent Eagle	Dryotriorchis spectabilis	~	X
Long-crested Eagle	Lophaetus occipitalis		X
*Wahlberg's Eagle	Hieraaetus wahlbergi		X
Ayres's Eagle	Hieraaetus ayresii		X
Cassin's Hawk Eagle	Aquila africana		X
Lizard Buzzard	Kaupifalco monogrammicus		X
Long-tailed Hawk	Urotriorchus macrourus		X
Red-chested Goshawk	Accipiter toussenelii	Х	X
Black Sparrowhawk	Accipiter melanoleucus	Λ	X
Yellow-billed Kite	Milvus aegyptius	х	X
Red-necked Buzzard	Buteo auguralis	Λ	X
SAROTHRURIDAE	Dutto dugurans		Λ
White-spotted Flufftail	Sarothrura pulchra		Х
RALLIDAE	Galolinara palolina		Λ
Nkulengu Rail	Himantornis haematopus		Х
Black Crake	Amaurornis flavirostra		Х
SCOLOPACIDAE			
Common Snipe	Gallinago gallinago		Х
Whimbrel	Numenius phaeopus		Х
Common Greenshank	Tringa nebularia	Х	Х
Wood Sandpiper	Tringa glareola		Х
Common Sandpiper	Actitis hypoleucos	Х	Х
LARIDAE			
Royal Tern	Thalasseus maximus		Х
COLUMBIDAE			
Afep Pigeon	Columba unicincta		Х
Cameroon Olive Pigeon	Columba sjostedti	Х	
Western Bronze-naped Pigeon	Columba iriditorques		Х
Lemon Dove	Aplopelia larvata	Х	Х
Red-eyed Dove	Streptopelia semitorquata	Х	Х
Blue-spotted Wood Dove	Turtur afer		Х
Tambourine Dove	Turtur tympanistria		Х
Blue-headed Wood Dove	Turtur brehmeri		Х

		Bioko	Río Muni			Bioko	Río Muni
African Green Pigeon	Treron calvus	Х	Х	Red-billed Dwarf Hornbill	Tockus camarus		Х
MUSOPHAGIDAE		~	~	White-crested Hornbill	Horizocerus albocristatus		Х
Great Blue Turaco	Corythaeola cristata	Х	Х	Piping Hornbill	Bycanistes fistulator		X
Green Turaco	Tauraco persa	~	Х	White-thighed Hornbill	Bycanistes albotibialis		X
Yellow-billed Turaco	Tauraco macrorhynchus	Х	Х	Black-and-white-casqued	Bycanistes subcylindrica		X
CUCULIDAE		~	Λ	Hornbill	Byournolog Guboyinnunou		~
Gabon Coucal	Centropus anselli		Х	Black-casqued Hornbill	Ceratogymna atrata	Х	Х
Yellowbill	Ceuthmochares aereus	Х	Х	LYBIIDAE			
Yellow-throated Cuckoo	Chrysococcyx flavigularis	X	X	Speckled Tinkerbird	Pogoniulus scolopaceus	Х	Х
Didric Cuckoo	Chrysococcyx caprius		Х	Red-rumped Tinkerbird	Pogoniulus atroflavus		Х
Klaas's Cuckoo	Chrysococcyx klaas	Х	Х	Yellow-throated Tinkerbird	Pogoniulus subsulphureus	Х	Х
African Emerald Cuckoo	Chrysococcyx cupreus	X	Х	Yellow-rumped Tinkerbird	Pogoniulus bilineatus	Х	Х
Olive Long-tailed Cuckoo	Cercococcyx clivinus	Λ	X	Yellow-spotted Barbet	Buccanodon duchaillui		Х
Red-chested Cuckoo	Cuculus solitarius		X	Hairy-breasted Barbet	Tricholaema hirsuta		Х
TYTONIDAE	Guculus solitarius		Λ	Yellow-billed Barbet	Trachyphonus purpuratus		Х
Barn Owl	Tyto alba	Х		INDICATORIDAE			
STRIGIDAE	1 yi0 alba	~		Zenker's Honeyguide	Melignomon zenkeri		Х
*Pel's Fishing Owl	Scotopelia peli		Х	Least Honeyguide	Indicator exilis		Х
African Wood Owl	Strix woodfordii	Х	X	*Lyre-tailed Honeyguide	Melichneutes robustus		Х
	Suix woodiordii	~	Λ	PICIDAE			
Mottled Spinetail	Telacanthura ussheri		Х	Green-backed Woodpecker	Campethera cailliautii		Х
	Rhaphidura sabini	Х	X	Buff-spotted Woodpecker	Campethera nivosa		Х
Sabine's Spinetail Cassin's Spinetail	Neafrapus cassini	^	X	Brown-eared Woodpecker	Campethera caroli		Х
African Palm Swift		Х	X	FALCONIDAE			
Common Swift	Cypsiurus parvus	^	X	Lesser / Common Kestrel	Falco naumanni / tinnunculus		Х
	Apus apus	Х	X	PSITTACIDAE			
Little Swift	Apus affinis	^	X	Grey Parrot	Psittacus erithacus	Х	Х
Bates's Swift	Apus batesi		X	EURYLAIMIDAE			
swift sp.	Apus sp.		^	Rufous-sided Broadbill	Smithornis rufolateralis		Х
COLIIDAE	Coline strictus		х	PLATYSTEIRIDAE			
Speckled Mousebird TROGONIDAE	Colius striatus		٨	Black-and-white Flycatcher	Bias musicus		Х
	Analadarma angustariala		Х	Bioko Batis	Batis poensis	Х	Х
Bare-cheeked Trogon	Apaloderma aequatoriale		٨	Chestnut Wattle-eye	, Dyaphorophyia castanea		Х
CORACIIDAE	Furnatamus gularia		Х	Yellow-bellied Wattle-eye	Dyaphorophyia concreta		Х
Blue-throated Roller	Eurystomus gularis		X	Black-necked Wattle-eye	Dyaphorophyia chalybea	Х	
Broad-billed Roller ALCEDINIDAE	Eurystomus glacurus		٨	MALACONOTIDAE	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	I lalavan hadia		Х	Many-coloured Bush-shrike	Chlorophoneus multicolor		Х
Chocolate-backed Kingfisher	Halcyon badia			Sabine's Puffback	Dryoscopus sabini		Х
Blue-breasted Kingfisher	Halcyon malimbicus		Х	Mountain Sooty Boubou	Laniarius poensis	Х	
Woodland Kingfisher	Halcyon senegalensis		X	Lühder's Bush-shrike	Laniarius luehderi		Х
African Pygmy Kingfisher	Ispidina picta	V	X	CAMPEPHAGIDAE			
White-bellied Kingfisher	Corythornis leucogaster	Х	Х	Grey Cuckooshrike	Coracina caesia	Х	
Malachite Kingfisher	Corythornis cristatus		Х	ORIOLIDAE			
Giant Kingfisher	Megaceryle maxima		Х	Western Black-headed Oriole	Oriolus brachyrhynchus		Х
MEROPIDAE			V	DICRURIDAE			
Black Bee-eater	Merops gularis		Х	Velvet-mantled Drongo	Dicrurus modestus		Х
Blue-breasted Bee-eater	Merops variegatus		Х	MONARCHIDAE			
Rosy Bee-eater	Merops malimbicus		Х	Blue-headed Crested Flycatcher	Trochocercus nitens		Х
	Te alura facariat		v	Rufous-vented Paradise	Terpsiphone rufocinerea		X
African Pied Hornbill	Tockus fasciatus		Х	Flycatcher	- Petrone - Transland		

		Bioko	Río Muni			Bioko	Río Muni
Red-bellied Paradise Flycatcher	Terpsiphone rufiventer	Х	Х	Grey Longbill	Macrosphenus concolor		Х
African Paradise Flycatcher	Terpsiphone viridis	~	X	Green Crombec	Sylvietta virens		Х
CORVIDAE				Lemon-bellied Crombec	Sylvietta denti		Х
Pied Crow	Corvus albus	Х	Х	INCERTAE SEDIS			
STENOSTIRIDAE		~		Green Hylia	Hylia prasina	Х	Х
African Blue Flycatcher	Elminia longicauda		Х	Tit-hylia	Pholidornis rushiae	~	X
Dusky Crested Flycatcher	Elminia nigromitrata		X	PHYLLOSCOPIDAE			~
White-bellied Crested Flycatcher		Х		Black-capped Woodland Warbler	Phylloscopus herberti	Х	
NICATORIDAE		~		Willow Warbler	Phylloscopus trochilus	Х	
Western Nicator	Nicator chloris		Х	Wood Warbler	Phylloscopus sibilatrix		Х
Yellow-throated Nicator	Nicator vireo		Х	ACROCEPHALIDAE	,		
PYCNONOTIDAE				Melodious / Icterine Warbler	Hippolais polyglotta / icterina		Х
Common Bulbul	Pycnonotus barbatus		Х	LOCUSTELLIDAE	FF F - 75		
Western Mountain Greenbul	Arizelocichla tephrolaema	Х		Evergreen Forest Warbler	Bradypterus lopezi	Х	
Slender-billed Greenbul	Stelgidillas gracilirostris	Х	Х	CISTICOLIDAE			
Little Greenbul	Eurillas virens	Х	Х	Chattering Cisticola	Cisticola anonymus		Х
Little Grey Greenbul	Eurillas gracilis		Х	Zitting Cisticola	Cisticola juncidis		Х
Ansorge's Greenbul	Eurillas ansorgei		Х	Banded Prinia	Prinia bairdii		Х
Cameroon Sombre Greenbul	Eurillas curvirostis		Х	Green Longtail	Urolais epichlorus	Х	
Yellow-whiskered Greenbul	Eurillas latirostis	Х	Х	Black-capped Apalis	Apalis nigriceps	Х	
Golden Greenbul	Calyptocichla serinus		Х	Buff-throated Apalis	Apalis rufogularis		Х
Honeyguide Greenbul	Baeopogon indicator		Х	Grey Apalis	Apalis cinerea	Х	
Sjostedt's Honeyguide Greenbul	Baeopogon clamans		Х	Grey-backed Camaroptera	Camaroptera brachyura		Х
Spotted Greenbul	Ixonotus guttatus		Х	Yellow-browed Camaroptera	Camaroptera superciliaris		Х
Yellow-necked Greenbul	Chlorocichla falkensteini		Х	Olive-green Camaroptera	Camaroptera chloronota	Х	Х
Simple Greenbul	Chlorocichla simplex		Х	PELLORNEIDAE			
*Yellow-throated Leaflove	, Atimastillas flavicollis		Х	Blackcap Illadopsis	Illadopsis cleaveri		Х
Swamp Palm Bulbul	Thescelocichla leucopleura		Х	Pale-breasted Illadopsis	Illadopsis rufipennis		Х
Cameroon Olive Greenbul	Phyllastrephus poensis	Х		Brown Illadopsis	Illadopsis fulvescens		Х
Icterine Greenbul	Phyllastrephus icterinus		Х	SYLVIIDAE			
White-throated Greenbul	Phyllastrephus albigularis		Х	African Hill Babbler	Sylvia abyssinica	Х	
Red-tailed Bristlebill	Bleda syndactylus		Х	Garden Warbler	Sylvia borin	Х	
Lesser Bristlebill	Bleda notatus		Х	ZOSTEROPIDAE			
Eastern Bearded Greenbul	Criniger chloronotus		Х	African Yellow White-eye	Zosterops senegalensis	Х	Х
Red-tailed Greenbul	Criniger calurus	Х	Х	HYLIOTIDAE			
HIRUNDINIDAE				Violet-backed Hyliota	Hyliota violacea		Х
Square-tailed Saw-wing	Psalidoprocne nitens		Х	STURNIDAE			
Mountain Saw-wing	Psalidoprocne fuliginosa	Х		Purple-headed Glossy Starling	Hylopsar purpureiceps		Х
Black Saw-wing	Psalidoprocne pristoptera		Х	Splendid Glossy Starling	Lamprotornis splendidus		Х
Grey-rumped Swallow	Pseudhirundo griseopyga		Х	Waller's Starling	Onychognathus walleri	Х	
Barn Swallow	Hirundo rustica	Х	Х	TURDIDAE			
Red-chested Swallow	Hirundo lucida		Х	Red-tailed Ant Thrush	Neocossyphus rufus		Х
*Ethiopian Swallow	Hirundo aethiopica		Х	White-tailed Ant Thrush	Neocossyphus poensis	Х	Х
White-throated Blue Swallow	Hirundo nigrita		Х	Rufous Flycatcher Thrush	Stizorhina fraseri		Х
Lesser Striped Swallow	Cecropis abyssinica	Х	Х	African Thrush	Turdus pelios	Х	Х
Rufous-chested Swallow	Cecropis semirufa		Х	MUSCICAPIDAE			
Preuss's Cliff Swallow	Petrochelidon preussi		Х	Fire-crested Alethe	Alethe castanea	Х	Х
Forest Swallow	Petrochelidon fuliginosa		Х	Brown-chested Alethe	Chamaetylas poliocephala	Х	Х
MACROSPHENIDAE				Forest Robin	Stiphrornis erythrothorax	Х	Х
Yellow Longbill	Macrosphenus flavicans		Х	Bocage's Akalat	Sheppardia bocagei	Х	

		Bioko	Río Muni			Bioko	Río Muni
Lowland Akalat	Sheppardia cyornithopsis		Х	Black-billed Weaver	Ploceus melanogaster	Х	
White-bellied Robin Chat	Cossyphicula roberti	Х		Village Weaver	Ploceus cucullatus	Х	Х
African Stonechat	Saxicola torquatus	Х		Vieillot's Black Weaver	Ploceus nigerrimus		Х
African Forest Flycatcher	Fraseria ocreata		Х	Dark-backed Weaver	Ploceus bicolor	Х	
Cassin's Flycatcher	Muscicapa cassini		Х	Brown-capped Weaver	Ploceus insignis	Х	
Olivaceous Flycatcher	Muscicapa olivascens		Х	Yellow Bishop	Euplectes capensis	Х	
African Dusky Flycatcher	Muscicapa adusta	Х		ESTRILDIDAE			
Little Grey Flycatcher	Muscicapa epulata		Х	White-breasted Negrofinch	Nigrita fusconotus	Х	
NECTARINIIDAE				Chestnut-breasted Negrofinch	Nigrita bicolor		Х
Fraser's Sunbird	Deleornis fraseri		Х	Grey-headed Negrofinch	Nigrita canicapillus	Х	
Little Green Sunbird	Anthreptes seimundi		Х	Shelley's Oliveback	Nesocharis shelleyi	Х	
Green Sunbird	Anthreptes rectirostris	Х		Green Twinspot	Mandingoa nitidula	Х	
Collared Sunbird	Hedydipna collaris	Х	Х	Red-faced Crimsonwing	Cryptospiza reichenovii	Х	
Reichenbach's Sunbird	Anabathmis reichenbachii		Х	Western Bluebill	Spermophaga haematina		Х
Green-headed Sunbird	Cyanomitra verticalis		Х	Orange-cheeked Waxbill	Estrilda melpoda		Х
Blue-throated Brown Sunbird	Cyanomitra cyanolaema		Х	Common Waxbill	Estrilda astrild	Х	Х
Cameroon Sunbird	Cyanomitra oritis	Х		Black-crowned Waxbill	Estilda nonnula	Х	
Olive Sunbird	Cyanomitra olivacea	Х	Х	Black-headed Waxbill	Estrilda atricapilla		Х
Green-throated Sunbird	Chalcomitra rubescens	Х	Х	Bronze Mannikin	Spermestes cucullata	Х	Х
Olive-bellied Sunbird	Cinnyris chloropygius	Х	Х	Black-and-white Mannikin	Spermestes bicolor	Х	Х
Tiny Sunbird	Cinnyris minullus		Х	Magpie Mannikin	Spermestes fringilloides		Х
Northern Double-collared Sunbird	Cinnyris reichenowi	Х		VIDUIDAE Pin-tailed Whydah	Vidua macroura	Х	х
Superb Sunbird	Cinnyris superbus		Х		viuua iliacioula	Λ	^
PASSERIDAE				Long-legged Pipit	Anthus pallidiventris		Х
Northern Grey-headed Sparrow	Passer griseus	Х	Х	FRINGILLIDAE			~
PLOCEIDAE				Oriole Finch	Linurgus olivaceus	Х	
*Spectacled Weaver	Ploceus ocularis		Х			~	

Appendix 2. Taxa mist-netted in Equatorial Guinea, with year of capture and principal measurements.

Annexe 2. Taxons capturés au filet japonais en Guinée équatoriale, avec année de capture et mensurations principales.

Species		Total caught	2013	2014	Right wing (mm)	Tail (mm)	Mass (g)
Red-chested Goshawk	Accipiter toussenelii	1	0	1			
Chestnut-breasted Sparrowhawk / Red-chested Goshawk	Accipiter castanilius / toussenelii	1	1	0	155	132	
Tambourine Dove	Turtur tympanistria	1	0	1	115	84	68.5
African Green Pigeon	Treron calvus	1	0	1	164	87	
African Pygmy Kingfisher	Ispidina picta	1	0	1	53	24	13.0
White-bellied Kingfisher	Corythornis leucogaster	3	2	1	55–63	24–26	14.6–18.3
African Pied Hornbill	Tockus fasciatus	1	0	1			
Yellow-rumped Tinkerbird	Pogoniulus bilineatus	2	1	1	59–64	29-32	13.0–14.8
Rufous-sided Broadbill	Smithornis rufolateralis	1	0	1	62	41	21.4
Chestnut Wattle-eye	Dyaphorophyia castanea	3	0	3	58–61	26–27	13.0–14.1
Yellow-bellied Wattle-eye	Dyaphorophyia concreta	4	4	0	58-60	27–28	12.5–14.2
Black-necked Wattle-eye	Dyaphorophyia chalybea	2	2	0	52	29–36	10.0–11.3
Mountain Sooty Boubou	Laniarius poensis	1	0	1	72	62	38.1
Red-bellied Paradise Flycatcher	Terpsiphone rufiventer	5	3	2	76–85	84–108	15.2-17.9
Dusky Crested Flycatcher	Elminia nigromitrata	1	0	1	65	61	10.8
White-bellied Crested Flycatcher	Elminia albiventris	1	1	0	61	61	8.7

Species		Total caught	2013	2014	Right wing (mm)	Tail (mm)	Mass (g)
Western Mountain Greenbul	Arizelocichla tephrolaema	6	4	1	77–83	72–78	29.7-35.4
Little Greenbul	Eurillas virens	8	7	1	71–80	66-74	18.7–32.3
Yellow-whiskered Greenbul	Eurillas latirostris	92	21	71	46-88	62-84	17.0-30.9
Phyllastrephus greenbul	Phyllastrephus sp.	4	3	1	69–75	64–72	16.0–18.0
Red-tailed Bristlebill	Bleda syndactylus	8	0	8	101–112	93–101	46.7-50.4
Lesser Bristlebill	Bleda notatus	30	2	28	81–98	72–92	27.3-40.5
Eastern Bearded Greenbul	Criniger chloronotus	1	1	0	86	76	
Red-tailed / White-bearded Greenbul	Criniger calurus / ndussumensis	4	0	4	86–95	84-86	23.8-31.1
Green Hylia	Hylia prasina	8	6	2	57–67	40-48	11.8–15.6
Grey-backed Camaroptera	Camaroptera brachyura	1	0	1	49	33	11.1
Olive-green Camaroptera	Camaroptera chloronota	6	3	3	54–55	20-33	11.8–13.4
Pale-breasted Illadopsis	Illadopsis rufipennis	2	0	2	67–75	52–56	24.1-27.8
Garden Warbler	Sylvia borin	1	0	1	78	56	19.2
White-tailed Ant Thrush	Neocossyphus poensis	4	1	3	95-105	78–90	47.0-50.5
African Thrush	Turdus pelios	1	0	1	101	74	63.3
Fire-crested Alethe	Alethe castanea	21	7	14	84–98	67–78	27.9-40.3
Brown-chested Alethe	Chamaetylas poliocephala	7	2	5	70–91	52-73	29.0-45.3
Forest Robin	Stiphrornis erythrothorax	9	6	3	60-71	29–39	16.9-20.2
Bocage's Akalat	Sheppardia bocagei	10	7	3	65–74	45–53	16.9–19.4
Lowland Akalat	Sheppardia cyornithopsis	3	0	3	67–77	47–59	20.8-22.3
White-bellied Robin Chat	Cossyphicula roberti	1	1	0	65	63	16.0
Fraser's Sunbird	Deleornis fraseri	1	0	1	61	45	9.9
Collared Sunbird	Hedydipna collaris	1	1	0			
Blue-throated Brown Sunbird	Cyanomitra cyanolaema	2	2	0			
Cameroon Sunbird	Cyanomitra oritis	4	4	0	57-62	36–43	11.1–13.3
Olive Sunbird	Cyanomitra olivacea	105	25	80	53–78	35–55	8.0-14.2
Northern Double-collared Sunbird	Cinnyris reichenowi	13	9	4	48–57	30–45	6.4-8.9
Village Weaver	Ploceus cucullatus	2	0	2	79–83	48–50	33.3-34.1
Green Twinspot	Mandingoa nitidula	2	1	1	51–53	30–32	10.2-12.0
Red-faced Crimsonwing	Cryptospiza reichenovii	5	2	3	52–54	36–40	12.0-16.9
Western Bluebill	Spermophaga haematina	3	0	3	70–72	56	25.9-27.1
Oriole Finch	Linurgus olivaceus	1	0	1	73	51	23.6
Unknown bird (juvenile alethe?)	Passeriformes sp.	1	0	1	87	57	35.2
Totals		396	129	266			