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The birds of Gola Forest and Tiwai Island, Sierra Leone

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Summary

Recent surveys identified 294 species of birds in Gola Forest and the neighbouring Tiwai Island, of which 287 were recorded in Gola and 133 on Tiwai. These results bring the total number of species recorded in these areas to 327, of which 313 in Gola and 176 on Tiwai Island. Of these, 27 species were new records for these areas, and two are new to Sierra Leone. Around 80 species were restricted to forest habitats, of which nine were confined to primary forest. All species of global conservation concern that have previously been recorded from Gola were found, including significant numbers of White-breasted Guineafowl *Agelastes meleagrides* and Yellow-headed Picathartes *Picathartes gymnocephalus*, and several records of the endangered Rufous Fishing-owl *Scotopelia ussheri*. However, Western Wattled Cuckoo-shrike *Lobotos lobatus*, Nimba Flycatcher *Melaenornis annamarulae* and Gola Malimbe *Malimbus ballmanni* were very rare. The high avian diversity and healthy populations of several threatened species confirm the importance of Gola for bird conservation.

Résumé

Les oiseaux de la forêt de Gola et de l'île Tiwai, Sierra Leone. Des études récentes ont identifié 294 espèces d'oiseaux dans la forêt de Gola et l'île Tiwai située à proximité, dont 287 observées dans Gola et 133 sur Tiwai. Ces résultats portent le nombre total d'espèces enregistrées dans ces zones à 327, dont 313 dans Gola et 176 sur l'île Tiwai. Parmi elles, 27 espèces sont de nouvelles observations pour ces zones et deux sont nouvelles pour la Sierra Leone. Environ 80 espèces sont restreintes à des habitats forestiers, dont neuf confinées à la forêt primaire. Toutes les espèces considérées comme menacées au plan global qui avaient été antérieurement observées dans Gola l'ont été à nouveau, dont en nombres significatifs la Pintade à poitrine blanche *Agelastes meleagrides* et le Picathartes de Guinée *Picathartes gymnocephalus*, et plusieurs observations de la Chouette-pêcheuse rousse *Scotopelia ussheri*. Cependant,

l'Echenilleur caronculé *Lobotos lobatus*, le Gobemouche du Liberia *Melaenornis annamarulae* et le Malimbe de Gola *Malimbus ballmanni* ont été très rarement observés. La richesse de la diversité aviaire et des populations bien portantes de plusieurs espèces menacées confirment l'importance de Gola pour la conservation des oiseaux.

Introduction

The Upper Guinea forests of West Africa are remnants of a belt of lowland rainforest that stretched from Guinea and Sierra Leone eastwards to Ghana. These forests are one of the most important biodiversity hotspots in the world (Myers *et al.* 2000) and are a high priority for conservation. Isolation from the Lower Guinea or Congolian forest block resulted in significant levels of endemism, including around 15 forest birds.

Gola Forest is the largest area of lowland forest (*c.* 710 km²) left in Sierra Leone. Highlighted early on by ICBP (Collar & Stuart 1988) and subsequently listed as an Important Bird Area (Fishpool & Evans 2001) the forest holds a high proportion of the threatened and endemic species of the region and a good representation of Guinea-Congolian forest biome species. The forest is also important for other taxa, notably mammals, with populations of Chimpanzee *Pan troglodytes*, African Forest Elephant *Loxodonta (africana) cyclotis* and Pygmy Hippopotamus *Hexaprotodon liberiensis* (Davies *et al.* 1987, Lindsell *et al.* in press).

Preliminary surveys of the birds of Gola Forest were carried out by G. Field (reported in Allport *et al.* 1989), Davies (1987) and Allport *et al.* (1989). Access to Gola was limited during Sierra Leone's civil war (1991–2002) but Thompson (1997) undertook some work on Yellow-headed Picathartes in the area. After 2002, Gola became accessible again and a major conservation programme was initiated by the Royal Society for the Protection of Birds (RSPB), the Conservation Society of Sierra Leone (CSSL) and the Forest Department of Sierra Leone. A large-scale biodiversity survey was undertaken to re-assess the conservation status of Gola's wildlife after the war. In contrast to earlier work, which focused on a small number of study sites, the present survey covered all parts of the forest. In this paper we review the diversity and status of Gola's avifauna and provide an updated species list. We also include records from neighbouring Tiwai Island, since it forms part of the same landscape unit and is managed in close co-operation with the Gola Forest Programme. For each species recent information on status, distribution and habitat is given.

Study site and methods

Gola Forest is located in the Eastern Province of Sierra Leone, and consists of three forest blocks (Fig. 1): Gola West (67 km²) and Gola East (205 km²) which are

contiguous, and Gola North (417 km²) and its Extension 2 (61 km²). Gola West and East are predominantly low-lying and swampy, whereas Gola North is more rugged with some hills reaching up to 500 m altitude. Tiwai Island (12 km²) is located in the Moa River northwest of Gola West and is low lying. Total annual rainfall in 2007 was 3117 mm with a single strong peak in July–August. The months of December to March are mostly dry. The main vegetation type is moist evergreen forest, with dominant tree species including *Heritiera utilis*, *Cynometra leonensis*, *Brachystegia leonensis* and *Parinari excelsa*. Additional habitats include swamp forest, forest regrowth and secondary forest, and farmbrush which is often dominated by the invasive shrub *Chromolaena odorata*. Tiwai Island is covered in secondary forest, palm swamps and riverine forest. Dominant tree species on Tiwai include *Funtumia africana* and *Pentaclethra macrophylla* (Davies 1987).

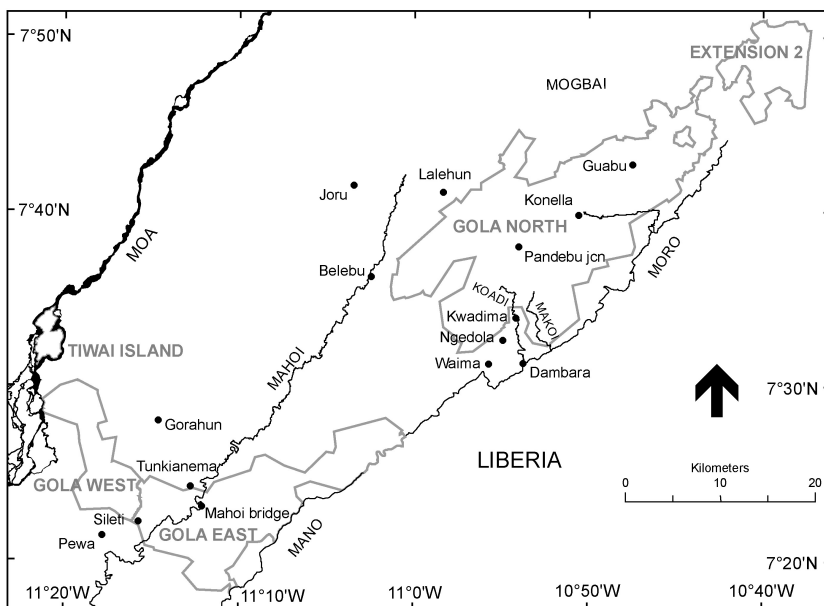


Figure 1. Gola Forest reserves and Tiwai Island showing locations mentioned in the text.

Various census methods were used during the bird survey. Point counts (Bibby *et al.* 2000) were conducted by EK over the entire forest. The points were spaced at 200 m intervals along a series of transects which followed a systematic segmented grid sampling design (Buckland *et al.* 2004) that was randomly superimposed onto the

area. Point counts were carried out in two dry seasons, starting in Dec 2005 and ending in Mar 2007. Six weeks of intensive searches, focusing on key species, were conducted in Jan–Mar 2007 (Dowsett-Lemaire & Dowsett 2008) along with nine days of mist-netting at five locations. Surveys of watercourses for riverine species were conducted in Nov–Dec 2006 by G. Anderson, G. Shorrocks and F. Hunter, and a one-month survey of nest colonies of Yellow-headed Picathartes was undertaken in Oct–Nov 2006 by S. Wotton and T. Morris (summarised in Wotton *et al.* 2010). These records are on file as unpublished reports at the RSPB, and are referred to in the species list by the observers' initials, as are unpublished records by F. Dowsett-Lemaire and R. Dowsett. Additional records were made *ad hoc* by the authors and further information compiled from visiting birders and trip reports. Although no systematic survey was undertaken on Tiwai Island, several visits were made to the island by the authors and others. Sites mentioned in the text are shown in Fig. 1. Taxonomy and nomenclature follow Borrow & Demey (2001).

Results

During visits to 627 count points, of which 61 were in Gola West, 186 in Gola East, 333 in Gola North and 47 in Extension 2, 140 bird species were recorded. A further 122 species were recorded as *ad hoc* observations by the authors. Dowsett-Lemaire & Dowsett (2008) and Wotton *et al.* (2010) recorded an additional 32 species, bringing the total to 294 species in 57 families recorded during this survey in or close to Gola Forest and Tiwai Island. The presence of an additional five species needs further confirmation (Table 1). Including records from previous surveys results in a total of 313 species in Gola, of which 251 species have been recorded within the boundaries of the forest reserves. A total of 133 species were recorded on Tiwai, bringing the total for the island to 176. Species not recorded within the boundaries of the Gola reserves, including species recorded only on Tiwai Island, are enclosed in square brackets. The 14 species that were recorded only on Tiwai are indicated by a ¹. A ² indicates new records for the Gola area since the studies of the 1980s (see Introduction) and a ³ indicates the new species for Sierra Leone that were found during this survey (see Dowsett-Lemaire & Dowsett 2008, Lindsell *et al.* 2008). For each species, the 2009 IUCN Red List category is given, where NT = Near-Threatened, VU = Vulnerable, EN = Endangered and DD = Data Deficient. Species where no Red List category is mentioned are listed by IUCN as Least Concern (LC).

Podicipedidae

[¹*Tachybaptus ruficollis* Little Grebe. One record from Tiwai Island (Davies 1987).]

Phalacrocoracidae

Phalacrocorax africanus Long-tailed Cormorant. One immature bird on Mahoi River below Mahoi Bridge, Mar 2007; also recorded at Tiwai Island (Davies 1987).

sites recorded for the latter is the highest known to date. For all these species the conservation of Gola forest can be expected to contribute significantly to their conservation. On the other hand, the Endangered Gola Malimbe was recorded very rarely, but any site where it occurs must be regarded as a high priority for its conservation. Western Wattled Cuckoo-shrike and Nimba Flycatcher were also recorded rarely and it is unclear how significant Gola Forest is for their conservation. Neither species was found commonly by Allport *et al.* (1989), although G.D. Field (pers. comm.) found the cuckoo-shrike quite frequently in the 1970s; it is possible that this species has declined in the last 30 years. Black-headed Rufous Warbler (NT) is the only forest bird of conservation concern in the region that has not been recorded. Although it has been found elsewhere in Sierra Leone (Okoni-Williams *et al.* 2001), it probably does not occur in Gola.

Over 180 species recorded during this survey were found in primary or secondary forest, including 163 species characteristic of the Guinea-Congolian forest biome. Nearly 80 of these species appear to be restricted to forest habitat, although some may occasionally occur at the ecotone of forest and more open habitats. Another *c.* 100 species occur in forest but were also frequently found in other habitats such as forest edges or clearings inside the forest. Nine species were found to be restricted to primary forest: Lemon Dove, Black-collared Lovebird, Shelley's Eagle-owl, Brown-chested Alethe, Nimba Flycatcher, Dusky Crested Flycatcher, Yellow-bellied Wattle-eye, Lagden's Bush-shrike and Gola Malimbe. In addition, Lyre-tailed Honeyguide was nearly restricted to primary forest, with only a few records from tall secondary forest. Most of these species are rare or uncommon; only the honeyguide and the wattle-eye were more common. Evidently the conservation of these species depends entirely on the preservation of large tracts of undisturbed closed-canopy forest, mainly in Gola North (*e.g.* the Mogbai area) and, possibly, the northeastern part of Gola East.

Over 80 species recorded during this survey did not normally occur inside forest, but were restricted to forest edges and farmbrush. However, some species were found in large clearings inside the forest reserves, such as the Sileti compound in Gola East and the clearings at Konella and Gombu in Gola North. A total of 34 species were restricted to riverine habitats, whereas 25 species were frequently found in all habitats. These habitat generalists include *e.g.* African Harrier Hawk, Tambourine Dove and Collared Sunbird.

The bird list for Tiwai is still far from complete, as several common species are not yet recorded. A number of species present in Gola are likely to be absent from Tiwai, such as those species restricted to primary forest or those found only in hilly terrain (*e.g.* Black-capped Apalis). Thirteen species known from Tiwai have so far not been recorded in Gola, excluding Northern Black Flycatcher *Melaenornis edolioides* and Senegal Batis *Batis senegalensis*, which were listed for Tiwai by Davies (1987) but are certainly erroneous. Most of these 13 species are associated with water bodies.

A number of species are known to occur in the forests of Liberia, Ivory Coast or other parts of Sierra Leone have so far not been recorded from Gola Forest. Allport *et*

al. (1989) listed 34 species from Tai Forest in Ivory Coast (Gartshore *et al.* 1995) that could occur in Gola. During the present survey, 11 of these species were found. Some of the remaining 23 are unlikely to occur in Gola because of habitat preferences, but others may have been overlooked. For example, Buff-spotted Flufftail *Sarothrura elegans* (Rallidae) and Sandy Scops Owl *Otus icterorhynchus* (Strigidae) are known to occur on the Liberian side of Gola (Gatter 1997). A puzzling absentee from Gola is Black-and-white-casqued Hornbill *Bycanistes subcylindricus* (Bucerotidae) which is widespread throughout West Africa (Kemp 1995). Given its conspicuous habits it is unlikely to have been missed during this survey. Blue-headed Coucal *Centropus monachus* (Cuculidae) was recorded in herbaceous marshes between Kenema and Gola Forest in 2007 (Dowsett-Lemaire & Dowsett 2008), and its occurrence in suitable habitat inside Gola is likely.

The results of this survey confirm the importance of Gola Forest for bird conservation. Current surveys recorded 294 species bringing the total to 327, which is amongst the highest of the Upper Guinean Forests. Of this total, 27 species are new records for the area and two of them new to Sierra Leone (Brown Nightjar and Black-collared Lovebird). Besides the high species diversity, several threatened species occur in good numbers. It appears that the war in the region has had little impact on the avifauna and this site remains a top priority for conservation.

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