Ethiop. J. Biol. Sci. **13(1): 37-48, 2014**
 ISSN: 1819-8678

SPECIES RICHNESS AND COMPOSITION OF BIRD COMMUNITY IN ABALO-GUNACHO FOREST, SOUTHERN ETHIOPIA

Addisu Asefa[1]

ABSTRACT: This paper presents results of avifaunal survey made in Abalo-Gunacho forest, southern Ethiopia, in May 2014 to determine the species richness and to examine guild composition of bird community of the forest. Birds were surveyed using Timed-Species Count technique along eight randomly selected transects. Fifty-one species were observed during the survey period, while Chao 2 species richness estimator predicted that the total number of species pool of the forest's bird community would be 55 species, suggesting that only few species were missed. This species pool comprises of seven (near) endemic species and ten highland biome- and six Somali-Masai-restricted species, indicating that this forest has significant importance for bird conservation. Based on mean values of the relative abundance index scores obtained from the eight transects, over half of the species recorded were rare. At guild level, bird community of this forest is dominated by those considered to be forest (i.e., dense and woodland forests) species guild, which accounted for about three-fourth of the total species, and by insectivore feeding guild [33 species (65%)]. As these two guilds are known to be very sensitive to forest conversion, their dominance in the present study area may reflect that this forest is relatively in a good condition. In general, regardless of some recently emerging threats (such as cultivation, settlement and gold mining), Abalo-Gunacho forest may represent one of the forest patches in the country where the original natural Moist Evergreen Tropical Forest habitats and their associated biota are still retained. However, urgent conservation measures are required in order to ensure the long-term persistence of this forest and its associated avifauna.

Key words/phrases: Abalo-Gunacho forest, Assemblage/guild composition, Important bird area, Rarefaction, Species richness, Timed-Species Count.

INTRODUCTION

Ethiopia harbours *c*.837 bird species, of which 18 are endemic to the country (Ash and Atkins, 2009). To promote conservation of these species, as well as their habitat, 69 Important Bird Areas (IBAs) have been identified and described so far (EWNHS, 2001). However, ornithological information for many of these sites is inadequate (EWNHS, 2001; Addisu Asefa and Kinahan, 2014). In view of the speed with which important wildlife habitats of the country are being destroyed, the need for undertaking ornithological

[1] Ethiopian Wildlife Conservation Authority, P.O. Box 386, Addis Ababa, Ethiopia. E-mail:aa.mitiku@gmail.com

expeditions in poorly known IBAs is a matter of urgency (EWNHS, 2001). Information derived from such assessments could help decision makers understand the conservation importance and status of sites and develop appropriate conservation actions needed if the sites are to retain their conservation significance (EWNHS, 2001; Addisu Asefa and Kinahan, 2014; Addisu Asefa, 2015).

This paper presents results of a study conducted to determine species richness and examine assemblage composition of bird community of the Abalo-Gunacho forest of the Guji Zone, southern Ethiopia. This forest patch is part of the Anferara forest IBA (IBA code ET058; EWNHS, 2001). Anferara forests IBA encompasses a large tract of contiguous forest areas, often named as Bore–Anferara–Wadera forests, which together represent the majority of the high elevation forest in southern Ethiopia (EWNHS, 2001). These forests are thought to hold a high number of the population of Ruspoli's Turaco (*Tauraco ruspolii*), and known to contain 22 of the 98 species of Somali–Masai biome-assemblage species found in the country (EWNHS, 2001). However, the forests are currently highly fragmented due to crop cultivation such as maize (*Zea mays*), Enset (*Ensete ventricosum*) and coffee (*Coffea arabica*) and due to illegal logging by migrants from Gedeo and Hararghe zones and only some patches, such as the Abalo-Gunacho, still contain the original natural forest vegetation (EWNHS, 2001; OFWE-BGB, 2013; Addisu Asefa, Unpubl. data). The specific objectives of this study were to: (1) determine the species richness of the area's bird community; (2) determine species' relative abundances and (3) examine the relative contributions of avian guilds (i.e., habitat and feeding guilds) to the total species pool of bird community of the forest.

MATERIALS AND METHODS

Study area

Abalo-Gunacho (N: 638500-643000; E: 493000-497500) forest is situated in the Guji Zone of the Oromia National Regional State, southern Ethiopia, at a distance of ~ 440 km south of the capital Addis Ababa. This forest has an area of ~ 800 ha on a landscape ranging in elevation from 1700 m a.s.l. to 2000 m a.s.l. The natural vegetation type of this forest (which represents about 88% of the total area) can be categorized as 'Moist Evergreen Tropical Forest' (Friis, 1992; EWNHS, 2001), which is characterized by *Podocarpus falcatus*, *Aningeria adolfi-friedericii* and *Albizia gummifera*. A small portion of the forest (~12% of the total area) is covered by *Cupressus* and *Eucalyptus* plantations (OFWE-BGB, 2013). Key wild mammal species

recorded from this forest include the globally threatened, endemic Mountain Nyala (*Tragelaphus buxtoni*), which is the first confirmed record of the species and represents most southern limit of its distribution (Malcolm and Evangelista, 2005), and the endemic sub-species Menilik's bushbuck (*T. scriptus menilikii*). Although the surrounding area is impacted from human activities, this forest, perhaps, represents one of the few intact natural forests of its kind remaining in the country at present. Nevertheless, some traces of recent human activities (house construction, gold mining along valleys and illegal hunting) were noticed during the field work

Data collection

Eight transects (six in the natural forest and two across both the natural and plantation forests) of each 5-8 km long were randomly established in the forest covering all the representative habitats. Timed-Species Count method was used to record birds (Pomeroy, 1992; Gibbons *et al*., 1996). This method is recommended over the use of other bird census methods (such as, transects and point counting methods) for rapid ornithological assessments particularly in poorly known tropical forests such as the present case (Pomeroy, 1992; Gibbons *et al*., 1996). This method involves recording species seen and/or heard within a specified time period (1 hour was used in the present study) while also recording the time at which each species was first seen. Each transect was visited on different days between 18–29 May 2014 early in the morning (between 06:30–09:00) while birds are more active (Pomeroy, 1992; Gibbons *et al*., 1996). Birds were recorded while walking slowly in the forest along transects. Identification was aided by 8 × 40 Nikon binoculars and a field guidebook (Redman *et al*., 2009).

Data analysis

Using species presence-absence data obtained during each of the eight 1-hour sampling periods, sample-based rarefaction curves (both observed and estimated) were computed to assess the degree of sampling representivity and to estimate the total number of species pool making up the bird community of the area (Sutherland, 1996; Gotelli and Colwell, 2001). The observed rarefaction curve was calculated using a moment-based interpolation method (i.e., Mau Tau) with EstimateS v. 8.2 software (http://viceroy.eeb.uconn.edu/estimates; Colwell, 2009). The Chao 2 richness estimator was used to estimate the total number of species (including species not recorded during the survey period) as it is more suitable for qualitative data and the index provides conservative but accurate richness estimates compared to the other richness estimators [for detail on

the performances of the various richness estimators available in the EstimateS package, see Gotelli and Colwell (2001) and Colwell (2009)]. Sampling is considered adequate if the observed rarefaction curve (i.e., the Mau Tau) approaches an asymptote or if it converges closely with an appropriate richness estimator (Chao 2). Further, the number of species remained unrecorded during the sampling period was estimated as the difference of the estimated (based on Chao 2) and the observed richness (Mau Tau) values (Gotelli and Colwell, 2001; Colwell, 2009).

The simplistic assumption in using Timed-Species Count for estimating abundance is that, when one is recording birds, common birds are on average the first to be seen, while rare birds usually take longer time to find (Gibbons *et al*., 1996). Following this assumption, each one-hour survey time along each transect was divided into six ten-minute intervals, and species recorded in the first ten-minute interval of each one-hour were assigned a score of 6, those seen in the second a score of 5, the third a score of 4, and so on. The mean of these scores from the eight one-hour repeated counts provided an estimation of the relative indices of abundance of each species in that community (Pomeroy, 1992; Gibbons *et al*., 1996). Based on the mean values of their scores, bird species were categorized into three broad relative abundance categories following Addisu Asefa (2015) as: common (i.e., those species with mean relative abundance score of >= 4), uncommon (>= 2 and < 4) and rare (< 1.5).

Bird species were categorized into two sets of guild types: habitat and feeding guilds. Based on the information provided on main habitat requirements in Redman *et al*. (2009), bird species were categorized into four habitat guilds: (1) open habitat species (using fields, grazing areas and cliffs), (2) shrubland species (using shrubby areas and edge habitat), (3) woodland species (using open forests, wooded savanna, forest edge, bushy thickets and parks), and (4) forest species (using dense closed forests) (see Appendix). Following Addisu Asefa (2013) and Gove *et al*. (2013), bird species were also categorized into five feeding guilds as: carnivore, frugivore, granivore, insectivore and omnivore. Then, the relative contribution (measured as a percentage) each habitat guild and feeding guild makes to the total number of species recorded in the forest was calculated and Chi-square test was used to examine if guilds (separately for the habitat and feeding guilds) significantly differed in their relative contributions.

RESULTS AND DISCUSSION

The sample-based rarefaction curve (i.e., Mau Tau curve) formed a plateau; it did almost reach an asymptote and converged closely with the observed Chao 2 richness estimator (Fig. 1). This suggests that representative sample size was taken (Sutherland, 1996; Gotelli and Colwell, 2001). Accordingly, a total of 51 species were encountered during the survey period (Appendix), while Chao 2 species richness estimator showed that a total of 55 species would be expected to be found in the area. This indicates that 93% of the species pool of the community was sampled and only four species would be recorded if additional samples were taken (Gotelli and Colwell, 2001). However, species richness reported here was lower compared to what has been documented from other forests of Ethiopia. For instance, Gove *et al*. (2008) reported the presence of 106 species in and around the Bonga forest, west Ethiopia; Addisu Asefa (2013) reported 66 species from the Afromontane forest in the northern Bale mountains; Anteneh Shimelis *et al*. (2013) reported 77 species from the Harenna forest in the southern Bale Mountains; and Addisu Asefa (2015) reported 82 species from Muktar mountain forest in eastern Ethiopia.

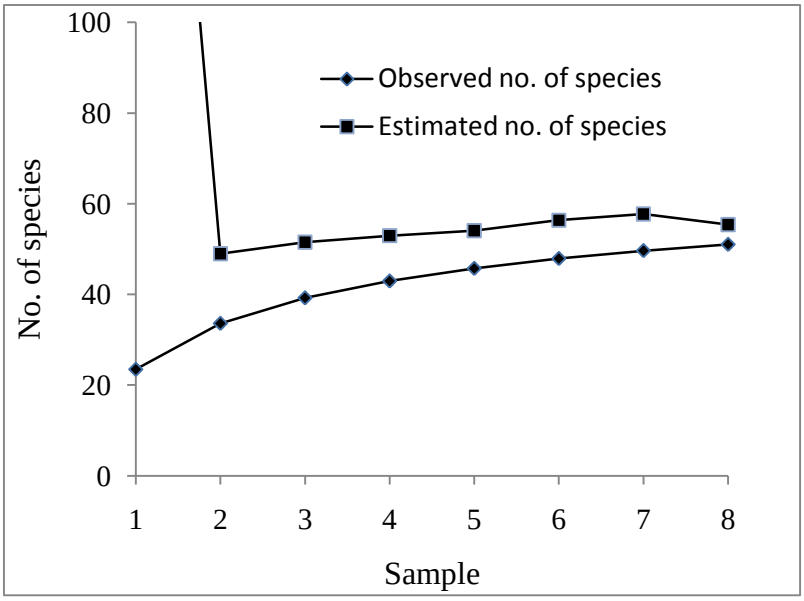

Fig. 1. Sample-based rarefaction curves of observed (based on Mau Tau estimator) and estimated (based on Chao 2 estimator) number of bird species in the Abalo-Gunacho forest.

At least three main reasons might explain the differences in the species richness of birds observed at the study site compared to the other forests mentioned above. First, some of these studies (e.g., Addisu Asefa, 2013; Anteneh Shimelis *et al*., 2013) encompassed both dry and wet seasons and/or were studied over two years compared to the present study. As noted by different authors (e.g., Gibbons *et al*., 1996; Sutherland, 1996), the likelihood of recording more number of species for a given site is often high when the site is repeatedly sampled over different seasons and/or years. Thus, although almost all the species predicted to be present in the forest at the time of the study period were recorded, more number of species would have been observed should temporally replicated additional samples were taken (which was found to be unlikely due to resource constraints). Secondly, compared to the present study area (which covers 8 km^2), all the other previously studied forests have larger sizes [ranges from 86 km^2 - 1440 km^2; for detail of each site, see Gove *et al.* (2008); Addisu Asefa (2013); Anteneh Shimelis *et al*. (2013)]. Thus, this difference could be unsurprisingly expected and would be attributed to the 'Theory of Island Biogeography', which states that, under natural conditions, the relationship between number of species and area of the habitat is usually positive (i.e., larger areas contain greater number of species compared to smaller areas; Wiens, 1989; Sutherland, 1996). Finally, unlike the case of the present study where birds were recorded solely in the forest habitat, in most of these previous studies (Gove *et al*., 2008; Addisu Asefa, 2013; Addisu Asefa, 2015) records from the surrounding areas were also included in the reports.

One endemic [yellow-fronted parrot (*Poicephalus flavifrons*)] and six nearly endemic (shared with Eritrea) bird species were recorded in the area (Appendix). Of the total species recorded, ten (20%) were Afro-tropical highland biome and six (12%) of these were Somali-Masai biome-restricted species (Appendix; see also EWNHS, 2001). The presence of these two biomes of species in the forest demonstrates that it is situated at a transition zone of highland and lowland biomes. The presence of such considerable number of biome-restricted species means that this forest could be considered as one of important sites for bird conservation in the country (EWNHS, 2001). Bird community of the area is mostly dominated by species categorized into rare relative abundance category [represented by 30 (59%) of the total species], followed by those categorized as uncommon [12 species (24%) and common [6 species (12%); Fig. 2a; see also the Appendix for these species)]. This shows that bird community of the area consists of few dominant species, while several rare ones, a pattern that often occurs in

natural communities where there are resource limitations (Maurer, 1990). Under such situation, a few superior competitor species exploit the limited resources and become dominant in the community, but several of the others tend to increase their niche diversity by alternatively using additional resources available in the adjacent habitats (e.g., woodland and open habitats; Maurer, 1990).

Results of Chi-square test showed that the relative contribution of both habitat guilds and feeding guilds were significantly different among the guilds (habitat guilds: χ^2 value=28.4, d.f.=3; χ^2=5.59, d.f.=4, in both cases, P<0.001; Fig. 2b and c). Species considered to be forest inhabitants (i.e., those predominantly preferring dense, closed forests and/or woodland forests; Gove *et al*., 2008) represented about three-fourth of the total species, whereas those considered preferring shrubby habitats contributed the least (Fig. 2b; Appendix). The relative contribution of these forest species to the total number of species presented here is disproportionately higher compared to other similar studies (e.g., Gove *et al*. (2008) reported 44% and 31% in intact and disturbed Bonga forests, respectively; Addisu Asefa (2013) reported 44% in the protected forest and 32% in the unprotected forest sites in the northern Bale mountains; and Addisu Asefa (2015) reported 50% in Muktar Mountain. This could show that Abalo-Gunacho forest is of high importance in harbouring bird species typical of tropical forests compared to the other sites in the country mentioned here.

Furthermore, given the findings that greater proportions of forest species have been recorded in forest sites considered to be intact than disturbed ones [(e.g., Gove *et al*. (2008); Addisu Asefa (2013)], it may also demonstrate that disturbance level in the Abalo-Gunacho forest seems to be relatively minimal. This is because forest disturbances often create habitat openings, which attract the colonization of shrubland and openland species, thereby reducing the relative number of forest species in bird communities of such areas (Gascon *et al*., 1999). When feeding guilds were considered, insectivore (33 species or 65%) was the most dominant guild, followed by granivore (14%) and frugivore guilds (Fig. 2c; Appendix). Previous studies in several tropical forests (e.g., Gascon *et al*., 1999; Şekercioğlu *et al*., 2002; Addisu Asefa, 2013; Gove *et al*., 2013) showed that insectivore birds are the most sensitive guilds to forest disturbances, particularly conversion of forest habitat to farmlands, and the reverse is true of granivore guilds. Thus, the dominance of insectivore guild in the present study area may also reflect that this forest is in good health status.

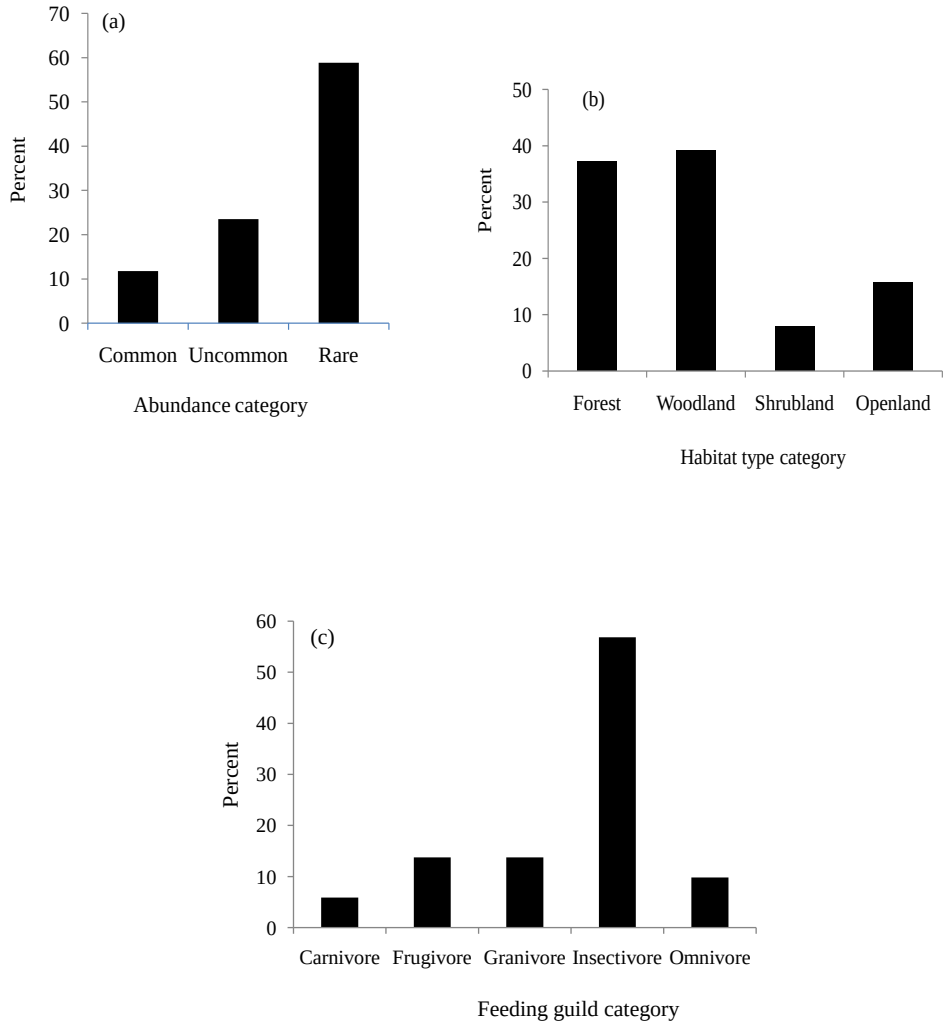

Fig. 2. The relative contribution (measured as percentage) species of each abundance category (a), habitat guild (b) and feeding guild (c) made to the total number of species recorded in the Abalo-Gunacho forest.

In conclusion, this study provided valuable information for this little known forest that would help promote further detailed ecological studies and develop appropriate conservation action plans. The occurrence of considerable numbers of biome-restricted species and of disturbance-sensitive species (i.e., forest-dependent and insectivore feeding guilds) in the area might justify why effective conservation should be needed. In order to ensure the long-term existence of this forest and its associated avifauna and other biological components, urgent conservation measures that would

mitigate some recently emerging threats (such as cultivation, settlement and gold mining) should be in place. In addition, long-term ecological studies of the bird community of the forest are also required in order to understand the effects of human-induced disturbances on their spatio-temporal resource use.

ACKNOWLEDGEMENTS

The field trip was supported by Oromia Forest and Wildlife Enterprise. Taressa Dandana and Hotessa Bekele are acknowledged for their assistance during the survey. I am also grateful to Dr. Anteneh Shimelis and Dr. Girma Mengesha for their comments on the draft manuscript.

REFERENCES

Addisu Asefa (2013). **Afromontane Avian Assemblages and Land Use in the Bale Mountains of Ethiopia: Patterns, Processes and Conservation Implications**. M.Sc. Thesis, University of Pretoria, Pretoria.

Addisu Asefa (2015). Bird observations in Muktar Mountain Forest, eastern Ethiopia. *ABC. Bull.* **22**(1): 36–42.

Addisu Asefa and Kinahan, A.A. (2014). Preliminary checklists for two Important Bird Areas of Ethiopia: Sof Omar and Shek Husein in the Bale Eco-region. *Scopus* **33**: 80–84.

Anteneh Shimelis, Pinard, M. and Addisu Asefa (2013). Impact of forest structure simplification on bird species richness in the Harena Forest of the Bale Mountains National Park (BMNP), south eastern Ethiopia. *Nat. Env. Poll. Tech*. **12**(2): 321–324.

Ash, J. and Atkins, J. (2009). **Birds of Ethiopia and Eritrea: An Atlas of Distribution**. Christopher Helm, London.

Colwell, R.K. (2009). EstimateS 8.2 User's Guide. Website: http://purl.oclc.org/estimates or http://viceroy.eeb.uconn.edu/estimates.

Dowsett, B., Atkinson, P. and Caddick, J. (2012). **Checklist of the Birds of Ethiopia**. www.africanbirdclub.org (accessed 17 October 2012).

EWNHS (2001). Ethiopia. In: **Important Bird Areas in Africa and Associated Islands: Priority Sites for Biodiversity Conservation**, pp. 291–336 (Fishpool, L.D.C. and Evans, M.I., eds.). BirdLife International, Cambridge.

Friis, I. (1992). Forests and forest trees of north-east tropical Africa. *Kew Bull. Add. Ser.* **15**: 1–396.

Gascon, C., Lovejoy, T.E., Bierregaard Jr, R.O., Malcolm, J.R., Stouffer, P.C., Vasconcelos, H.L., Laurance, W.F., Zimmerman, B., Tocher, M. and Borges, S. (1999). Matrix habitat and species richness in tropical forest remnants. *Biol. Conserv*. **91**: 223–229.

Gibbons, D.W., Hill, D.A. and Sutherland, J.W. (1996). Birds. In: **Ecological Census Techniques: A Handbook**, pp. 227–259 (Sutherland, W.J., ed.). Cambridge University Press, Cambridge.

Gotelli, N. and Colwell, R.K. (2001). Quantifying biodiversity: Procedures and pitfalls in the measurement and comparison of species richness. *Ecol. Lett*. **4**: 379–391.

Gove, A.D., Hylander, K., Sileshi Nemomissa and Anteneh Shimelis (2008). Ethiopian

coffee cultivation—implications for bird conservation and environmental certification. *Conserv. Lett.* **1**: 208–216.

Gove, A.D., Hylander, K., Sileshi Nemomissa, Anteneh Shimelis and Wolde-Michael Enkossa (2013). Structurally complex farms support high avian functional diversity in tropical montane Ethiopia. *J. Trop. Ecol*. **29**: 87–97.

Malcolm, J. and Evangelista, P.H. (2005). **The Range Status of Mountain Nyala**. University of Redlands, Redlands and Colorado State University, Fort Collins.

Maurer, B.A. (1990). The relationship between distribution and abundance in a patchy environment. *Oikos* **58**: 181–189.

OFWE- BGB (2013). Field Report on Wildlife Assessment in the Borana-Guji Concession Areas. Oromia Forest and Wildlife Enterprise – Borana-Guji Branch Office (OFWE-BGB), Adola, Guji Zone, Ethiopia.

Pomeroy, D. (1992). **Counting Birds: AWF Technical Handbook Series 6**. African Wildlife Foundation, Nairobi.

Redman, N., Stevenson, T. and Fanshawe, J. (2009). **Birds of the Horn of Africa: Ethiopia, Eritrea, Djibouti, Somalia and Socotra**. Christopher Helm, London.

Şekercioğlu, C. H., Ehrlich, P.R., Daily, G. C., Aygen, D., Goehring, D. and Sandí, R.F. (2002). Disappearance of insectivorous birds from tropical forest fragments. *Proc. Natl. Acad. Sci. USA* **99**: 263–267.

Sutherland, W.J. (1996). Why census? In: **Ecological Census Techniques: A Handbook**, pp. 1–10 (Sutherland, W.J., ed.). Cambridge University Press, Cambridge.

Wiens, J.A. (1989). **The Ecology of Bird Communities. Volume 1: Foundations and Patterns**. Cambridge University Press, Cambridge.

Appendix. List of species recorded in the Abalo-Gunacho forest along with their mean abundance score, abundance category, broad habitat type and feeding requirements. Names of species follow Dowsett *et al*. (2012).

Species names	Mean score	Abundance category	Habitat	Feeding
Wattled Ibis *Bostrychia carunculata*[¥, ‡]	0.9	Rare	Open	Insectivore
White-backed Vulture *Gyps africanus*	0.1	Rare	Woodland	Insectivore
African Harrier Hawk *Polyboroides typus*	0.1	Rare	Woodland	Carnivore
Orange River Francolin *Francolinus levaillantoides*	0.8	Rare	Open	Omnivore
Rouget's Rail *Rougetius rougetii*[¥, ‡]	0.1	Rare	Open	Omnivore
Tambourine Dove *Turtur tympanistria*	1.3	Scarce	Forest	Frugivore
Blue-spotted Wood Dove *Turtur afer*	0.3	Rare	Woodland	Insectivore
Red-eyed Dove *Streptopelia semitorquata*	3.4	Frequent	Forest	Granivore
African Collared Dove *Streptopelia roseogrisea*	2.5	Uncommon	Open	Insectivore
Yellow-fronted Parrot *Poicephalus flavifrons*[§]	1.6	Scarce	Forest	Carnivore
Black-winged Lovebird *Agapornis taranta*[¥, ‡]	2.5	Uncommon	Forest	Frugivore
White-cheeked Turaco *Tauraco leucotis*[‡]	2.5	Uncommon	Forest	Omnivore
White-bellied Go-away Bird *Corythaixoides leucogaster*[¶]	2.3	Uncommon	Woodland	Granivore
Red-chested Cuckoo *Cuculus solitarius*	3.3	Frequent	Forest	Insectivore
African Emerald Cuckoo *Chrysococcyx cupreus*	0.4	Rare	Forest	Granivore
Blue-headed Coucal *Centropus monachus*	1.0	Rare	Shrubland	Insectivore
Narina's Trogon *Apaloderma narina*	0.4	Rare	Forest	Insectivore
Hemprich's Hornbill *Tockus hemprichii*[¶]	0.4	Rare	Woodland	Insectivore
Silvery-cheeked Hornbill *Bycanistes brevis*	3.3	Frequent	Forest	Frugivore
Yellow-fronted Tinkerbird *Pogoniulus chrysoconus*	2.4	Uncommon	Forest	Carnivore
Lesser Honeyguide *Indicator minor*	1.3	Scarce	Woodland	Insectivore
Abyssinian Woodpecker *Dendropicos abyssinicus*[¥, ‡]	1.4	Scarce	Forest	Insectivore
Plain Martin *Riparia paludicola*	1.8	Scarce	Open	Insectivore
Common Bulbul *Pycnonotus barbatus*	6.0	Abundant	Forest	Insectivore
Rüppell's Robin-Chat *Cossypha semirufa*[‡]	2.4	Uncommon	Forest	Granivore
Abyssinian Ground Thrush *Zoothera piaggiae*	3.3	Frequent	Forest	Insectivore
Olive Thrush *Turdus olivaceus*	2.6	Uncommon	Forest	Insectivore
African Thrush *Turdus pelios*	0.8	Rare	Woodland	Insectivore
Cinnamon Bracken Warbler *Bradypterus cinnamomeus*	2.5	Uncommon	Shrubland	Insectivore
Brown Woodland Warbler *Phylloscopus umbrovirens*	4.1	Common	Forest	Insectivore
Tawny-flanked Prinia *Prinia subflava*	0.6	Rare	Shrubland	Insectivore

Species names	Mean score	Abundance category	Habitat	Feeding
Grey-backed Camaroptera *Camaroptera brachyura*	4.1	Common	Forest	Insectivore
Abyssinian Slaty Flycatcher *Melaenornis chocolatinus*[¥, ‡]	0.4	Rare	Woodland	Insectivore
Northern Black Flycatcher *Melaenornis edolioides*	0.1	Rare	Woodland	Insectivore
African Grey Flycatcher *Bradornis microrhynchus*[¶]	1.9	Scarce	Woodland	Granivore
African Paradise Flycatcher *Terpsiphone viridis*	3.3	Frequent	Forest	Insectivore
White-rumped Babbler *Turdoides leucopygia*[¶]	3.6	Frequent	Woodland	Insectivore
Mariqua Sunbird *Cinnyris mariquensis*	2.1	Uncommon	Woodland	Nectarivore
Abyssinian White-eye *Zosterops abyssinicus*	4.3	Common	Woodland	Omnivore
Orange-breasted Bush-Shrike *Telophorus sulfureopectus*	1.8	Scarce	Woodland	Insectivore
Tropical Boubou *Laniarius aethiopicus*	6.0	Abundant	Woodland	Insectivore
Abyssinian Black-headed Oriole *Oriolus monacha*[¥, ‡]	6.0	Abundant	Forest	Insectivore
Somali Crow *Corvus edithae*	0.4	Rare	Open	Frugivore
Red-winged Starling *Onychognathus morio*	2.1	Uncommon	Open	Insectivore
Swainson's Sparrow *Passer swainsonii*[‡]	0.8	Rare	Open	Insectivore
Baglafecht Weaver *Ploceus baglafecht*[‡]	1.3	Scarce	Woodland	Insectivore
Village Weaver *Ploceus cucullatus*	1.3	Scarce	Woodland	Insectivore
Red-cheeked Cordon-bleu *Uraeginthus bengalus*	1.0	Rare	Woodland	Granivore
Straw-tailed Whydah *Vidua fischeri*[¶]	1.3	Scarce	Shrubland	Granivore
African Citril *Serinus citrinelloides*	1.3	Scarce	Woodland	Granivore
Brown-rumped Bunting *Emberiza affinis*[¶]	0.6	Rare	Woodland	Frugivore

Note:- In the species name entries scientific name of each species is presented in italic font following its common name.
Symbols following scientific names denote: [§] = endemic, [¥] = nearly endemic, [‡] = highland biome and [¶] = Somali-Masai biome.