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Birds of the University of Mindanao Matina Campus, Davao City, Philippines

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ABSTRACT

A rapid survey of bird fauna in the University of Mindanao Matina campus was conducted from October to November, 2016. Photodocumentation, visual encounter, and bioacoustics were conducted in grassland, mini forest, and open landscapes near college buildings. Seventeen species of birds were documented, 2 (11.76%) are endemic, 2 (11.76%) migrant and 14 (76.47%) are residents. Endemic species are *Rhipidura nigritorquis* (Philippine Pied fantail) and *Dicaeum australe* (Red keeled flower pecker). Despite being situated in highly urbanized area, UM still harbours numerous bird species suggesting that UM campus still has significant green spaces serving as birds' microhabitats. This data should be included in the planning of future infrastructure projects in the campus to protect the remaining bird habitats.

Keywords: *Avifauna, Assessment, Birds, University of Mindanao, Urban, Biodiversity*

INTRODUCTION

The Philippines is one of the 17 megadiverse countries in the world harbouring high diversity of birds. Kennedy et al. (2000) reported a total of 556 species of birds in the Philippines and still handful of species being discovered in the remaining forest areas. Recent data shows that there is now a total of 657 species of which 214 are endemic and 68 species are considered as globally threatened (Lepage, 2007). Mindanao, the second largest island in the country, has 341 species of birds consisting of 147 resident, 93 migratory, 94 endemic, and 14 migrant and resident species (Kennedy et al., 2000). The high level of diversity of avifauna in Mindanao can be attributed to the relatively intact forest which is significantly higher compared to other islands in the archipelago (Peterson, 2000).

Birds are highly associated with forest habitats making them a good biological indicator of ecosystem health. They also play a key role in pollination and seed dispersal (Crosby, 1998). Monitoring bird species found in urban ecosystems is crucial for the conservation of fragmented green spaces which gives a balance on urbanization and industrial development in urban areas. Bird diversity assessment has been made easier in recent times due to the fascination of many photographers on avifauna which helped increased information on bird monitoring. However, the data of species richness on small forest fragments in urban ecosystems which are also important and necessary for conservation remain poorly studied since most avifaunal studies have been conducted in forested ecosystems (Alviola et al., 2009).

Green spaces in urban ecosystems served as a fragmented sanctuary of birds in highly urbanized areas. These data are important in providing assessment of the remaining species of this taxon that thrives in urban green spaces useful in promoting conservation strategies to protect them. This paper under the umbrella program "Biodiversity Assessment of the University of Mindanao, Matina Campus" aims to assess the avifauna of the University of Mindanao, Matina campus. Hence this study was conducted to assess the avifauna of the University of Mindanao Matina Campus. Specifically, this aimed to provide the list of birds, determine their conservation statuses, and geographic distribution.

MATERIALS AND METHODS

This study was conducted within UM Matina campus from October to December 2016. Photo documentation, visual encounter and bioacoustics were employed in the three sampling sites: mini-forest, grassland, and near college buildings. Birds were documented using binocular and Nikon D5300. Field Guide to Philippine Birds by Kennedy et al. (2000) and Pocket Guide to Philippine Birds by Rosell II & Robledo were used in the identification. Endemicity and conservation status were obtained using the IUCN Red List of Threatened Species (http://www.iucnredlist.org).

RESULTS AND DISCUSSION

A total of 17 species were recorded with 2 (11.76%) endemic species, 2 (11.76%) migrants and 13 (76.47%) residents. All species are Least Concerned mostly found in open and cultivated areas. This served as the baseline data of birds species in UM Matina Campus and perhaps the first in urban Davao City Philippines.

Table 1. List of birds in the University of Mindanao, Matina Campus.

No.	Scientific name	Family	English name	Conservation Status	Geographical Distribution
1.	*Amaurornis phoenicurus*	Rallidae	White breasted waterhen	Least concern	Resident
2.	*Anas platyrhynchos domesticus*	Anatidae	Philippine Mallard Duck	Least concern	Resident
3.	*Aplonis panayensis*	Sturnidae	Asian glossy starling	Least concern	Resident
4.	*Cinnyris jugularis*	Nectariniidae	Olived-backed sunbird	Least concern	Resident
5.	*Columba livia domestica*	Columbidae	Feral dove	Least concern	Resident
6.	*Dicaeum australe*	Dicaeidae	Red keeled flowerpecker	Least concern	Endemic
7.	*Egretta intermedia*	Ardeidae	Intermediate Egret	Least concern	Migrant
8.	*Gallus gallus*		Jungle fowl	Least concern	Resident

9.	*Geopelia striata*	Columbidae	Zebra dove	Least concern	Resident
10.	*Hirundo rustica*	Hirundinidae	Barn Swallow	Least concern	Resident
11.	*Lalage nigra*		Pied Triller	Least concern	Resident
12.	*Lonchura atricapilla*	Estrildidae	Chestnut munia	Least concern	Resident
13.	*Lanius cristatus*	Laniidae	Brown Shrike	Least concern	Migrant
14.	*Passer montanus*		Eurasian tree sparrow	Least concern	Resident
15.	*Pycnonotus goiavier*	Pycnonotidae	Yellow vented bulbul	Least concern	Resident
16.	*Rhipidura nigritorquis*	Rhipiduridae	Philippine Pied fantail	Least concern	Endemic
17.	*Todiramphus chloris*	Alcedinidae	White collard kingfisher	Least concern	Resident

All species of birds in the University of Mindanao, Matina campus are Least Concerned found in disturbed, open, and cultivated areas under the families Nectariniidae, Estrildidae, and Pycnonotidae. No rare or threatened species was documented in the campus which is reasonable since it is situated in a highly urbanized area with numerous ecologic disturbances such as noise and human habitation. However, the presence of endemic species *Rhipidura nigritorquis* (Philippine pied fantail) (See Fig. 1a) and *Dicaeum australe* (Red keeled flower pecker) (See Fig. 1b) together with other bird species recorded signify that the campus still contain significant green spaces which is an important microhabitat serving as important haven for this avifaunal species.

In Davao City, the previous record of avifauna is from Malagos watershed by Alviola et al. (2009) with 54 recorded species. The high record of Malagos watershed compared to UM Matina campus can be attributed to its forested ecosystem and less disturbed habitats. Some of the rare and vulnerable species found in Malagos watershed that were not found in the University of Mindanao were Rufous-lored kingfisher (*Halcyon winchelli*), Silvery kingfisher (*Alcedo argentata*) and Little Slaty flycatcher (*Ficedula basilanica*) which are rare birds primarily dependent on the quality of the ecosystem (BIODAT, 2004; Alviola et al. (2009). Species commonly shared between two areas are common birds found in open and cultivated areas from the families Nectariniidae, Estrildidae, and Pycnonotidae.

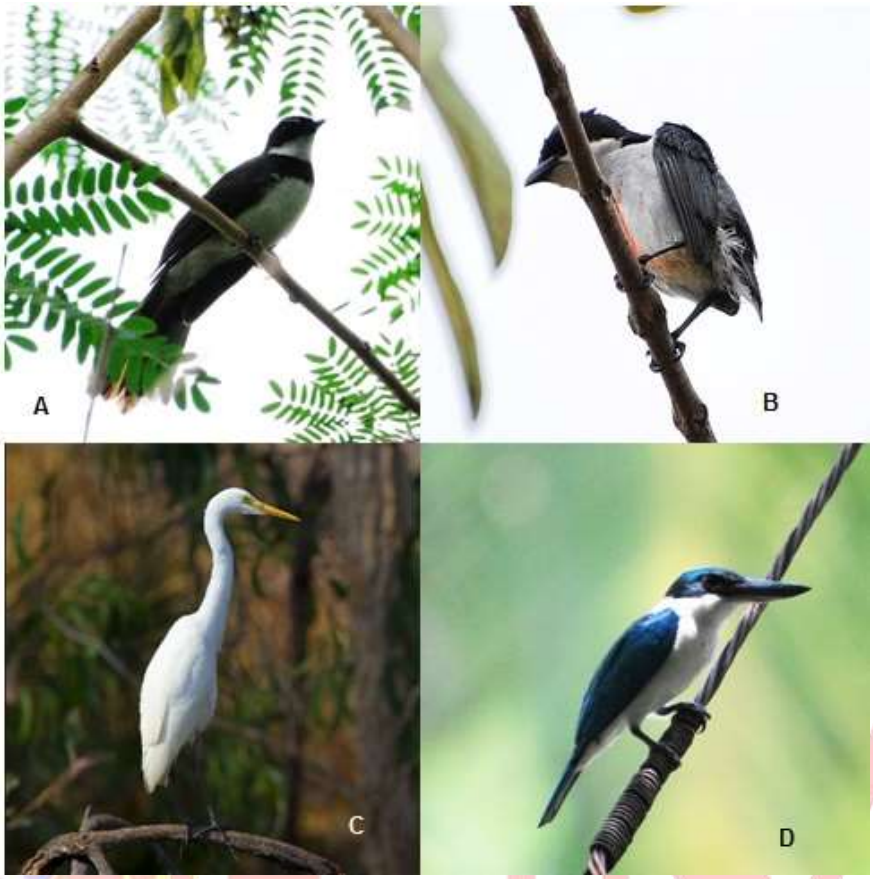

Fig. 1 A. *Rhipidura nigritorquis* (Philippine Pied Fantail), B. *Dicaeum australe* (Red Keeled Flower Pecker), C. *Egretta intermedia* (Intermediate Egret) [source: http://www.barraimaging.com.au/BIRD-FAMILIES-OF-THE-WORLD/Tinamous-To-Parrots/Herons-Bitterns-Family-Ardeida/Intermediate-Egret-Egretta-int/i-nTGrRsG], D. *Todiramphus chloris* (White Collard Kingfisher].

One of the birds with interesting habit and habitat is the *Todiramphus chloris* (White collard kingfisher) (See Fig. 1d) a widely distributed bird often spotted in the mini-forest of the university. It was observed feeding on some gastropods found in the small pond near the mini-forest. It is the most conspicuous kingfisher found in urban areas often perching in wires. Currently there are 49 subspecies of *T. chloris* worldwide (Woodall, 2001). Another is the *Amaurornis phoenicurus* (White Breasted Waterhen) which was recorded only in the swampy grassland of the campus. The White Breasted Waterhen was not observed until enough time was allocated near the swampy grassland since it was mostly hidden under the tall grasses. White breasted waterhen's favoured habitats include grasslands, marshes and mangroves (Buden & Retogral, 2010; Kennedy et al.2000). Protecting these microhabitats is important in their conservation. Moreover the UM Campus is also an important microhabitat for some migratory birds such as *E. intermedia* (Intermediate Egret) (See Fig. 1c).

The presence of a number of bird species also indicates the presence and diversity of plant species found in the campus since birds are also known as seed dispersers. Studies show that through the food gathering behaviour especially of fruit-eating birds that the structure of plant diversity is established (LaJeunesse, 2016). Among the known frugivore birds found in the university campus are the *Aplonis panayensis, Pycnonotus goiavier, Pycnonotus goiavier* among others which feeds on a variety of fruit bearing trees in the campus such as *Leucaena leucocephala* and *Gmelina arborea*. Other birds which

were feeding on nectars of *Adenium obesum* and *Spathodea campanulata* were the birds *Cinnyris jugularis* and *Dicaeum australe.*

No studies yet have been done on associating tree diversity with bird diversity in the Philippines however that would be a good study in the future. Studies previously conducted by Berg (1999) and Bowman et al. (unpublished), indicate that bird diversity and tree diversity do not have significant correlations and that other factors such as understory vegetation may play a more significant role in predicting bird diversity.

CONCLUSION AND RECOMMENDATION

The relatively high number of avifauna in the University of Mindanao, Matina Campus is a good indicator that the campus contains enough green spaces to cater birds with different habitat preferences. The presence of *Dicaeum australe* and *Rhipidura nigritorquis* in the campus requires immediate conservation efforts of the native trees within the campus. More studies on the biology of these bird species should be conducted. The university can also use the data on the avifauna of the University of Mindanao, Matina Campus as part of the consideration in the infrastructure development within the campus to conserve the habitats especially of the endemic birds.

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