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Avifaunal assessment of Mindoro state university (MinSU) forest reservation

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Abstract
The Mindoro State University Forest Reservation avian diversity was assessed to update bird data useful for planning and conservation. Transect walks, sound recording and counting were done to gather data during the dry season at the foothills. A total of 143 individuals were recorded and identified which belongs to 23 species and 15 families with Family *Columbidae* as the most number in terms of species. 9 avian species are endemic in the Philippines, 3 in Mindoro island, and 1 Nearly Endemic. These are the *Penelopides mindorensis, Hypsipetes mindorensis* and *Centropus viridis mindorensis* (Philippine Coucal subspecies). *Penelopides mindorensis* is classified as Endangered while the rest of the species are categorized under the Least Concern status according to the IUCN Red List of Threatened Species. The calculated H' is 2.69 indicates that the avian diversity is moderately diverse while the computed dominance index (D) is 0.08983 which indicates low dominance, respectively. Identified threats on MinSU Forest Reservation include natural hazards such as typhoon, earthquake and landslide, illegal logging, slash and burn agriculture, quarrying and the ongoing road project traversing the upland areas of Alcate, Victoria, Oriental Mindoro to Sablayan, Occidental Mindoro. Recommendations for management include continuous assessment of the Forest Reservation biodiversity and threats, education campaign, and effective reforestation projects.

Keywords: Avifaunal assessment, forest reserve, diversity

Introduction

Birds are considered one of the most diverse taxa in the world with about 572 species of birds known to occur within the 7,100 islands that comprise the Philippines and nearly 172 species are not found anywhere else in the world (Kennedy *et al*., 2000 as cited by Ascaño *et al*., 2016) [4]. These species are present in various habitat types. Birds found in native and restored areas are with higher species richness and rarity than nonprotected habitats like plantations and orchards which mainly had common and nonendemic species (Tanalgo *et al*., 2019) [41]. Avifaunal assessments are important to realize the important groups that play a vital role in both the structure and function of ecosystems by providing numerous ecological benefits, such as seed dispersal, the facilitation of forest restoration, the pollination of many tropical plant species, and pest control services through the consumption of insects (Philpott *et al*. 2009) [35] and small rodents, which can devastate hectares of agricultural products. Thus, birds are an ideal study group for the valuation of ecosystem services and for planning and conservation purposes.

Mindoro island is considered a biogeographic region (DENR-UNEP, 1997) [15] making it one of the centers of flora and fauna species (Bacudo *et al*., 2006) [5]. The flora and fauna and geological composition of the island is very unique that it is considered as the ninth largest biogeographic zone in the Philippines, in terms of land area covered and with high level of biodiversity and endemism (Lit *et al*., 2011) [28].

There are 285 species of birds in Mindoro with 9 (3.15%) are endemic and 17 (5.96%) are threatened (Afuang, *et al*., 2020) [2] while more than 300 species of birds have been recorded on Mindoro Island by Gonzales, *et al*. in 2000 after a rapid island-wide flora and fauna assessment, a quarter of which are known to be endemic only to the Philippines and three quarters to be seasonal migrants.

This high number of these unique or endemic taxa in Mindoro (such as birds and mammals), has made it one of the most important centers of global endemism and an equally rich biological diversity.

Unfortunately, Mindoro is one of the most severely deforested islands in the country (Heaney and Mittermeir, 1997 as cited by Bacudo, *et al*., 2006) [5]. Only the most rugged portions of the island's central spine have been spared from commercial logging, and the forest is still under pressure. This calls for a better management of the remaining forest cover in the island which serve as corridors for various and rich flora and fauna species of Mindoro.

Forest reservations are forest areas reserved by the President of the Philippines for specific purposes as defined by Presidential Decree 705 (also known as Forest Reform Code of the Philippines). The MinSU Forest Reservation is located at Mindoro State University (MinSU, formerly MinSCAT) Main Campus, Alcate, Victoria, Oriental Mindoro. An eBird Checklist in MinSU showed 25 species of birds recorded all year round like Pigeons and Doves, Cuckoos, Kingfishers, Barbets, Woodpeckers, Orioles, Bulbuls and Crows.

The study aimed to identify bird species, its taxonomic family, residence and conservation status and diversity and dominance index as well as the possible and current threats in the forest reservation.

Materials and Methods

The MinSU Forest Reservation is located at Mindoro State University Main Campus (formerly Mindoro State College of Agriculture and Technology), Alcate, Victoria, Oriental Mindoro. The area is approximately 20 has. (Bacudo *et al*., 2006) [5]. It has an elevation of 170 meters above sea level.

Inventory of birds are done through actual sight and bird calls (Foote, *et al*. 2017) [17]. The data gathering was done during the dry season (May 2021) in MinSU Forest Reservation foothills. A transect walk and call counts were executed for three consecutive mornings for bird watching while recording actual sight and heard of bird species. During transect walks, bird identification and counting took place using binoculars, camera, sound recorder, field guide and data sheet.

Results and Discussion

A total of 143 individuals were recorded and identified which belongs to 23 species and 15 families with Family *Columbidae* as the most number in terms of species. 9 avian species are endemic in the Philippines, 3 in Mindoro Island, and 1 Nearly Endemic. These are the *Penelopides mindorensis, Hypsipetes mindorensis* and *Centropus viridis mindorensis* (Philippine Coucal subspecies). *Penelopides mindorensis* is classified as Endangered while the rest of the species are categorized under the Least Concern status according to the IUCN Red List of Threatened Species. The calculated H' is 2.69 indicates that the avian diversity is moderately diverse while the computed dominance index (D) is 0.08983 which indicates low dominance, respectively. Identified threats on MinSU Forest Reservation include natural hazards such as typhoon, earthquake and landslide, illegal logging, slash and burn agriculture, quarrying and the ongoing road project traversing the upland areas of Alcate, Victoria, Oriental Mindoro to Sablayan, Occidental Mindoro. Recommendations for management include continuous assessment of the Forest Reservation biodiversity and threats, education campaign, and effective reforestation projects.

Conclusion

Based on the results of the study, it is concluded that the MinSU Forest Reservation is relatively diverse and is home to endemic and endangered avian species indicating a healthy habitat which needs further conservation and management against the disaster and deforestation-related threats identified.

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