

Occurrence and Species Composition of some Bird at Kyee in (Lake) and its Environs, Madaya Township

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Abstract

Occurrence and species composition of birds were recorded at Kyee In (Lake) and its environs, Madaya Township. The study period was from January to August, 2019. A total of 42 bird species belonging to 36 genera of 24 families under seven orders was observed in two study sites. Most abundant bird species were recorded in order Passeriformes with 16 species (38.09%), followed by Pelicaniformes (23.80%, 10 species) and Charadriiformes (11.90%, five species), Corciiformes (9.52 %, four species), Columbiformes and Anseriformes (7.14%, each three species) and the lowest species composition was found in order of Ciconiiformes (2.38%, one species) in study area (Figure 2). In both study sites, the highest number of birds was noticed in January to March. However, Site I is covered with paddy fields wetland within first three months and is a good habitat for waterbirds. Seven species of winter migrant were observed at site I and *Motacilla alba* was only found in site II.

Keyword : Occurrence, Species composition, Birds,

Introduction

Worldwide, there are about 10,000 known avian species and they are considered as part of the global ecosystem. They are known as good indicators of habitats quality and environmental degradation (Jarvis, 1993).

Myanmar is rich in bird life. Myanmar possesses a great wealth and diversity of wetland habitats. Each year Myanmar hosts over 50,000 residents and migratory water birds. (Khin Swe Wynn, 2003). In Myanmar harbors 1062 species of bird, of which 639 are resident and 224 are regular seasonal migrants (Smithies, 2001).

Birds are effective as bio-indicators in the study of the impacts of forest disturbance and habitat structure on species composition (Karr *et al.* 1990). Tropical birds are highly diverse, and their ecological niches are extremely varied and reasonably well known. Birds are also more easily detected than other types of animals because of their often loud vocalisations and distinctive colours. (Mansor *et al.* 2012.)

In Myanmar, 46 are globally threatened bird species, eight of species are critically endangered, twelve endangered and twenty-six are vulnerable species. In addition, the country holds six endemic species. These include Jerdon's Minivet *Pericrocotus albifrons*, Hooded Treepie *Crypsirina cucullata*, Burmese Bushlark *Mirafra microptera*, Burmese Tit

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Aegithalos sharpie, White-throated Babbler *Turdoides gularis* and White-browed Nuthatch *Sitta victoriae* (IUCN Redlist, 2015)

The study area was mostly found bird species because of good habitats. Moreover, this area was dominated by cultivated areas, paddy fields, lake and other habitats. Therefore, the present study has been conducted with the following objectives.

- to record bird species at Kyee In (Lake) and its environs
- to compare the species composition of birds at two study sites

Material and methods

Study Area

The study area lies at latitude 22°03'48.11" N and longitude 96°05'51.75"E. It is situated at 12.872 km from Mandalay and Northern parts of Taung Pyone Village. Its environs have paddy fields, bush and shrub land and woody plants and Kyee In (Lake).

Site I

The area is approximately 3.4 km². It is covered with paddy fields wetland.

Site II

This area consists of Kyee In (Lake) which is a small channel of Ayeyarwaddy river and Nyaunggone Village. This village is approximately 0.57 km². It is densely covered with growing trees and bushes and cultivated areas and orchards.

Study Period

The study period was from January to August 2019.

Field techniques

Each study sites was visited twice a month. Along the paddy fields, line transect count method was used. The data collection was made by slowly walking along the transect route and the bird species and their individual encounter at both sides of transect line were observed and recorded. In Kyee In (Lake) and its environs, the collection of data was carried out by the use of point count method (Bird census Techniques). All counts were conducted from 6: 00 am to 10:00 am. Birds were viewed by using binocular (14 × 30) and digital telescopic camera was used during the survey period.

Identification of species

Identification of bird species was recorded according to King and Dickinson (1975), Smythies (2001), Robson (2011) and (2015).

Data Analysis

Species composition = $\frac{\text{Number of species in each order/family}}{\text{Total number of species observed}} \times 100$ (Thrusfeld, 1995).



Fig. 1 Map of the study Area : Source Google Earth (2019)

RESULT

A total of 42 bird species belonging to 36 genera of 24 families under seven orders were observed in two study sites of Kyee In (Lake) and its environs during the study period.

Out of the 42 species recorded, 19 species were waterbirds and 23 species were terrestrial ones. Seven winter visitors were common at the study site I.

During the study period, in site I the highest number of bird species (39 species) was in January to March, followed by (30 species) in June and July, (29 species) in April, (25 species) in May and August. In study site II, the highest number of bird species 29 species was found in January to March, followed by 28 species in August and the lowest number of species 25 species in April and May.

Comparison of bird species revealed that the highest number of waterbirds species was found in study site I and followed by terrestrial species in study site II during the study periods. (Table 1)

In the case of species composition in orders, order Passeriformes revealed to be the highest composition (38.09%, 16 species), followed by Pelicaniformes (23.80%, 10 species) and Charadriiformes (11.90%, five species), Corciiformes (9.52 %, four species), Columbiformes and Anseriformes (7.14%, each three species) and the lowest species composition was found in order of Ciconiiformes (2.38%, one species)(Figure 1).

Table 1. Monthly occurrence of recorded bird species in two study sites of Kyee In (Lake) and its environs

Species name	Jan		Feb		March		April		May		June		July		August		
	I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II	
1 <i>Dendrocygna javanica</i>	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
2 <i>Tadorna ferruginea</i>	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
3 <i>Anas poecilorhyncha</i>	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
4 <i>Anastomus oscitans</i>	+	-	+	-	+	-	-	-	-	-	-	-	-	-	-	-	-
5 <i>Threskiornis melanocephalus</i>	+	-	+	-	+	-	+	-	-	-	+	-	+	-	+	-	-
6 <i>Plegadis falcinellus</i>	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	+	+
7 <i>Ixobrychus cinnamomeus</i>	+	-	+	-	+	-	+	-	+	-	+	-	+	-	-	-	+
8 <i>Ardeola grayii</i>	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	+	+
9 <i>Ardeola baschus</i>	+	+	+	-	+	-	-	-	-	-	+	-	+	-	-	-	-
10 <i>Bubulcus ibis</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
11 <i>Ardea cinerea</i>	+	+	+	+	+	+	-	-	-	-	+	+	+	+	+	+	+
12 <i>Mesophoyx intermedia</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
13 <i>Egretta garzetta</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
14 <i>Phalacrocorax niger</i>	+	-	+	+	+	-	-	+	-	+	-	+	-	+	-	+	+

39	<i>Pycnonotus blandfordi</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
40	<i>Hirundo rustica</i>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+
		39	29	39	29	39	29	27	25	25	25	30	27	30	27	25	28

Table.2 Species composition of bird species at two study sites during study periods

No	Order	No of Family	No of Genus	No of Species	Composition of species
1	Anseriformes	1	3	3	7.14%
2	Ciconiiformes	1	1	1	2.38%
3	Pelecaniformes	3	9	10	23.80%
4	Charadriiformes	4	5	5	11.90%
5	Columbiformes	1	2	3	7.14%
6	Coraciiformes	2	3	4	9.52 %
7	Passeriformes	12	13	16	38.09 %
		24	36	42	100 %

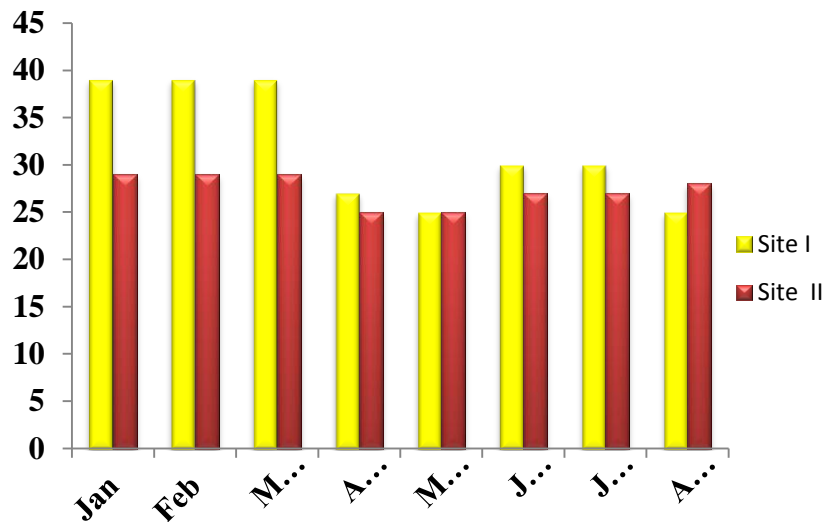


Fig. 2 Monthly number of bird species recorded from Site I and Site II

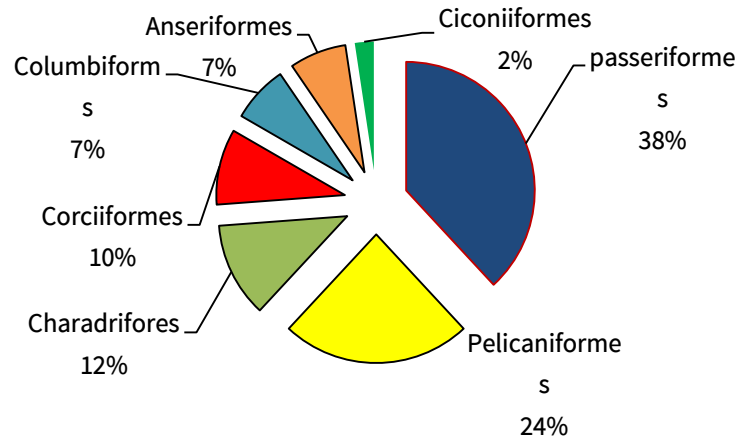


Fig. 3 Composition of bird species in different orders during the study period



Site A



Site B



A. Tadorna ferruginea



B. Anas poecilorhyncha



C. Threskiornis melanocephalus



D. Anastomus oscitans



E. Plegadis falcinellus



F. Himantopus himantopus



I. Streptopelia tranquebarica



J. Mirafa microptera

Plate 1. Some resident and migrant Birds

Discussion

A total of 42 species confined to 36 genera, and distributed among 24 families and seven orders were recorded from Kyee In (Lake) and its environs from January to August 2019. Among the bird species recorded, 23 species are terrestrial birds and 19 species are waterbirds. In these study sites, seven species of migrant and 35 species of resident were observed.

In both study sites, the highest number of birds was noticed in January to March and the lowest number of species was found in April, May and August. However, Site I is covered with paddy fields wetland within first three months and good habitat for waterbirds.

Paddy field wetlands are the areas where water plays an important role in the development of aquatic plants and aquatic life (Gill, 1994). In the study area, waterbirds were abundantly found in Site I. It is assumed that these habitat was similar to the above habitat. Six species of winter migrants were observed at Site I and they are waterbirds. *Motacilla alba* was only found as migrant of terrestrial bird in Site II.

Bhushan et al. (1993) described that many migratory birds from northern hemisphere fly to the southern part every winter season to avoid the severe cold and scanty of food in the Northern part in winter. They migrated into many Asian countries including Myanmar.

In the present study, winter migrants were found in first three months. It can be assumed that the migratory species arrived in this areas due to more available food resources during cold season and to avoid climatic change in their native.

Harrison and Greenish (2000) stated that the passerine birds contain more than half of the world's species. Smythies (2001) and Robson (2015) also stated that Passeriformes represent the largest order among all recorded in South-East Asia. During the study period, In the case of species composition in order Passeriformes revealed to be the highest composition (38.09 %, 16 species). Thus, Passerine birds happened to be widely distributed in all habitats including the present study area. This may be recorded that passerine birds must have adaptation to all habitats.

Two endemic species, white throated babbler *Mirafra microptera*, *Turdoides gularis* were recorded in this study. They occurred as resident birds in Myanmar.

It is concluded that abundance of some species depend on food availability and suitable habitat. In the study area, some waterbirds and terrestrial birds were found in paddy fields. These habitat were most preferred in waterbirds. Habitats was never stable in long time due to natural resources. Loss and change of habitat affect to bird species

composition and decrease in number. Thus, it is necessary to protect habitats and to conserve avian faun density.

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