

Species Composition and Relative Abundance of Bird Fauna in Thu Nge Taw Village, Tada - U Township

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Abstract

*The study was conducted in Thu Nge Taw Village from November 2017 to April 2018. 39 species of birds belonging to ten orders, 23 families and 35 genera were recorded as 19 water birds and the remaining 20 species as terrestrial birds. The species belonging to Order Passeriformes were most abundant (35.89%), followed by Ciconiiformes (23.07%), Charadriiformes and Coraciiformes (10.25%), Gruiformes (7.69%) and Anseriformes, Podicipediformes, Pelecaniformes and Bucerotiformes (2.56% each). Average abundance indicated that common species (30), very common species (six) and uncommon species (three) in the study period. In the study area two Myanmar endemic birds species of *Mirafra microptera* and *Turdodides gularis* were recorded. It may be concluded that Thu Nge Taw Village is suitable place for avifauna to inhabit due to abundance of vegetation and being undisturbed by human being.*

Key word: species composition, relative abundance, birds.

1. Introduction

Birds are good indicators, and can be used to identify the most biologically rich areas, as well as environmental changes and problem. They are found in almost all natural habitats, they are high in food chain and thus reflect changes lower down, a wealth of data have been collected by ornithologists, and their conservation. Status is well known relative to other taxa [5].

Birds are found almost everywhere an earth, comprise over 10,000 species and occupy a diverse array of habitat. Not only birds are relatively easy to survey, but they are sensitive to environmental change. Unfortunately, like other wildlife, bird numbers have been declining worldwide due to habitat destruction and fragmentation. Some estimate that one out of every eight bird species today is globally threatened, and one fifth of all bird species is at some level of conservation concern [6].

Species composition, abundance and behaviour of birds are known to vary seasonally. Some species are permanent, residents in an area; others occupy an area only during winter or summer. In addition, the quantity and quality of the habitat, both in terms of plant condition and food resources, vary seasonally. The description of the structure of bird communities is thus complicated by many factors [7].

Myanmar is a small part of the oriental region, but because of its favourable situation, with its head near the Himalayas and its tail extending down to Malaysia; it has one of the richest avifauna. The avifauna of Myanmar is never stationary with the changing of the season birds that summer is northern latitudes are unable to find food in those latitudes in winter, it therefore move south wards to an area that time and circumstance have fixed as its winter quarter [9].

A total of 1327 species are known to occur in South East Asia [8]. Myanmar embraces a rich and diverse avifauna, amounting to more than any other country in mainland South East Asia[8].

Thu Nge Taw village was situated between South-West of Mandalay and North-West of Kyaukse University and near the Pyukan Lake. Variety of vegetation, paddy fields, cultivated plants and other seasonal crops of the study area serve as a favourable habitat for foraging nesting and roosting of bird species. Therefore the present study has been made on the avifauna of Thu Nge Taw village with following objectives:

- to investigate the composition and the relative abundance of bird species in the study area

2. Materials and Methods

2.1. Study area

Thu Nge Taw village is located in the Tada - U Township, which lies between latitude 21°47' N and longitude 95°56'E (Plate 1).

2.2. Study period

The present study was conducted from November 2017 to April 2018.

2.3. Survey methods

The study area was visited twice per month. Birds were viewed by using Bushnell binoculars (8×40). The photos of birds were taken immediately with digital camera after sighting. On every trip, birds watching was taken between 6:30 to 9: 30am and 4:30 to 6:00 pm.

2.4. Identification and classification

Bird species identification and classification were followed after Robson (2011).

2.5. Analysis of data

The data collected were analyzed as following

$$\text{Relative composition} = \frac{\text{total no.of individual in each species}}{\text{total no.of individual in all species}} \times 100$$

$$\text{Relative abundance} = \frac{\text{total no.of individual in each species}}{\text{total no.of individual in all species}}$$

(Bisht et al., 2004)

The average relative abundance was categorized as following.

Uncommon (uC) = having relative abundance less than 0.01

Common (C) = having relative abundance greater than 0.01 and less than 0.05

Very Common(vC)=having relative abundance 0.05 and above

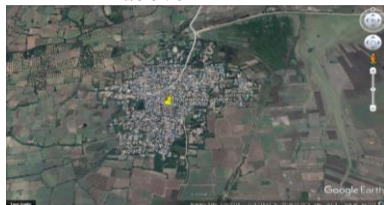


Plate 1 Map showing the location of study area

3. Results

During the study period 39 species of birds belonging to ten orders, 23 families and 35 genera were collected.

3.1. Species composition of recorded species

A total of 39 species, belonging to ten orders, 23 families under 35 genera was recorded in the present study (Table 2).

The greatest number of families were comprised Passeriformes (10), and then Charadriiformes (3), Ciconiiformes(3), Anseriformes (1), Podicipediformes (1),Pelecaniiformes(1),Gruiformes(1), Columbiformes (1) and Bucerotiformes (1) (Table 1).

Out of 39 species, 14 species belong to Passeriformes, nine species to Ciconiiformes, four species to Charadriiformes and Coraciiformes and one species of Anseriformes, Podicipediformes, Pelecaniiformes, Columbiformes and Bucerotiformes. Species belong to Order Passeriformes were most dominant (35.89%), followed by Ciconiiformes (23.07%), Charadriiformes and Coraciiformes (10.25%), Gruiformes (7.69%) and Anseriformes, Podicipediformes, Pelecaniiformes and Columbiformes (2.56% each) (Table 1).

In site I (Ya Myae), the total number of 740 individual were recorded. The highest number of 251 individual was observed in December and lowest 79 individual in November. In site II(Le Myae), the highest of individual 316 in December and lowest individual 39 in November was observed.

3.2. Relative abundance

In the present study, the relative abundance of some bird species was assessed from November, (2017) to

February (2018). Common species (30), very common species (6), and uncommon species (3) were observed (Table 3).

The total number of 1638 individual was noted. The number of individuals was the highest in December and the lowest in November. *Ardea alba*, *Bubulcus coromandus*, *Mesophoyx intermedia*, *Egretta garzetta*, *Dicrurus macrocercus*, *Streptopelia chinensis*, *Corvus splendens*, *Motacilla alba*, *Acridotheres tristis*, *Sturnus burmannicus*, *Saxicola caprata* and *Mirafra microptera* species occur in both site.

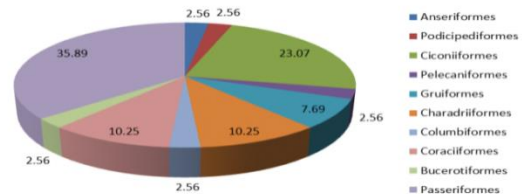


Fig 1. Composition of bird species in different Orders

Table 1. Composition of bird species in Orders

Sr. No	Order	No. of family	No. of genus	No. of Species	Composition (%)
1.	Anseriformes	1	1	1	2.56
2.	Podicipediformes	1	1	1	2.56
3.	Ciconiiformes	3	8	9	23.07
4.	Pelecaniformes	1	1	1	2.56
5.	Gruiformes	1	3	3	7.69
6.	Charadriiformes	3	4	4	10.25
7.	Columbiformes	1	1	1	2.56
8.	Coraciiformes	1	3	4	10.25
9.	Bucerotiformes	1	1	1	2.56
10.	Passeriformes	10	14	14	35.89
Total		23	37	39	100

Table 2. List of collected bird species in Thu Nge Taw village, Tada - U Township

Order	Family	Scientific Name	Common Name	Local Name
Anseriformes	Anatidae	<i>Anas poecilorhyncha</i>	Indian Spot-billed Duck	be-sa-gud
Podicipediformes	Podicipedidae	<i>Tachybaptus ruficollis</i>	Little Grebe	ta-si-hmoke
Ciconiiformes	Ciconiidae	<i>Anastomus oscitans</i>	Asian Openbill	khayu-sok
	Threskiornithidae	<i>Threskiornis melanocephalus</i>	Black-headed Ibis	khayu-sok-phyu
		<i>Plegadis falcinellus</i>	Glossy Ibis	khayu-sok-ahme
	Ardeidae	<i>Ardea purpurea</i>	Purple Heron	nga-hit
		<i>Ardea alba</i>	Great Egret	byaing-ngan
		<i>Ardeola grayii</i>	Indian Pond heron	byaing-auk
		<i>Bubulcus coromandus</i>	Eastern Cattle Egret	kywe-gyaung-byaing
		<i>Mesophoyx intermedia</i>	Intermediate Egret	thayawaddy- byaing
		<i>Egretta garzetta</i>	Little Egret	waitharli-byaing
Pelecaniformes	Phalacrocoracidae	<i>Phalacrocorax niger</i>	Little Cormorant	din-gyi
Gruiformes	Rallidae	<i>Amaurornis phoenicurus</i>	White - breasted Waterhen	ye-kyatma
		<i>Porphyrio porphyrio</i>	Purple Swamphen	me-nyo
		<i>Gallinula chloropus</i>	Common Moorhen	ye-kyat
Charadriiformes	Jacaniidae	<i>Hydrophasianus chirurgus</i>	Pheasant -tailed Jacana	kyar-bat-hnin
	Charadriidae	<i>Vanellus indicus</i>	Red - wattle Lapwing	tit-ti-too
		<i>Charadrius dubius</i>	Little Ringed Plover	tit-ti-too
	Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	ye-nyaunt-kaung
Columbiformes	Columbidae	<i>Streptopelia chinensis</i>	Spotted Dove	gyo-lei-byaug
Coraciiformes	Alcedinidae	<i>Halcyon capensis</i>	Stork-billed Kingfisher	sin-pain-nyin
		<i>Halcyon smymensis</i>	White throated Kingfisher	pain-nyin-yin-phyu

Table 2. Continued

Order	Family	Scientific Name	Common Name	Local Name
		<i>Alcedo atthis</i>	Common Kingfisher	pain-nyin
		<i>Merops orientalis</i>	Green Bee-eater	hnget-pasin-hto
Bucerotiformes	Upupidae	<i>Upupa epops</i>	Common Hoopoe	taung-bi-soke
Passeriformes	Dicruridae	<i>Dicrurus macrocercus</i>	Black Drongo	lin-mi-swe
		<i>Dicrurus leucophaeus</i>	Ashy Drongo	lin-mi-swe
	Corvidae	<i>Corvus splendens</i>	House Crow	kyi-gan
	Ploceidae	<i>Lonchura striata</i>	Scaly-breasted Munia	sar - wadi
	Passeridae	<i>Passer domesticus</i>	House Sparrow	sar-ga-lay
		<i>Passer flaveolus</i>	Plain-backed Sparrow	sar-war
	Motacillidae	<i>Motacilla alba</i>	White Wagtail	mi-hnyaung-hnget
	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	zayet
		<i>Sturnus burmannicus</i>	Vinous-breasted Starling	zayet-gaung-phyu
	Muscicapidae	<i>Copsychus saularis</i>	Oriental Magpie Robin	tha-beik-lwe
		<i>Saxicola caprata</i>	Pied Bushchat	hnget-kya
	Alaudidae	<i>Mirafra microptera</i>	Burmese-bush Lark	bi-lone
	Pycnonotidae	<i>Pycnonotus cafer</i>	Red-vented Bulbul	but-pi-ni
	Leiothrichidae	<i>Turdoides gularis</i>	White-throated Babbler	zwe

C = Common
 uC = Uncommon
 vC = Very common



Plate 2 Recorded birds species

Table 3. Monthly Occurrence and abundance of birds

Scientific Name	Number of individual										Total individual	Relative abundance ¹	Status
	Site I					Site II							
	Nov	Dec	Jan	Feb	Total	Nov	Dec	Jan	Feb	Total			
<i>Anas poecilorhyncha</i>	-	-	-	-	-	-	15	20	35	35	0.02	C	
<i>Tachybaptus ruficollis</i>	-	-	-	-	-	5	9	-	14	14	0.01	C	
<i>Anastomus oscitans</i>	-	-	-	-	-	60	25	30	115	115	0.07	vC	
<i>Threskiornis melanocephalus</i>	-	-	-	-	-	20	5	-	25	25	0.02	C	
<i>Plegadis falcinellus</i>	-	-	-	-	3	40	26	50	119	119	0.07	vC	
<i>Ardea purpurea</i>	-	-	-	-	-	5	-	7	12	12	0.01	C	
<i>Ardea alba</i>	-	16	6	-	22	7	12	18	10	47	69	0.04	vC
<i>Ardeola grayii</i>	-	-	-	-	-	5	10	18	20	53	53	0.03	C
<i>Bubulcus coromandus</i>	-	9	4	4	17	2	20	10	19	51	68	0.04	vC
<i>Mesophox intermedia</i>	-	5	6	-	11	-	18	15	20	53	64	0.04	vC
<i>Egretta garzetta</i>	3	6	9	-	18	1	15	11	30	57	75	0.05	vC
<i>Phalacrocorax niger</i>	-	-	-	-	-	3	40	20	25	88	88	0.05	vC
<i>Amaurornis phoenicurus</i>	-	-	-	-	-	8	10	5	23	23	0.01	C	
<i>Porphyrio porphyrio</i>	-	-	-	-	-	5	8	3	16	16	0.01	C	
<i>Gallinula chloropus</i>	-	-	-	-	-	-	4	10	14	14	0.01	C	
<i>Hydrophasianus chirurgus</i>	-	-	-	-	-	4	6	3	13	13	0.01	C	
<i>Vanellus indicus</i>	-	10	5	12	27	-	-	-	-	27	0.02	C	
<i>Charadrius dubius</i>	-	-	-	-	-	1	-	-	1	1	0.00	uC	
<i>Actitis hypoleucos</i>	-	-	-	-	-	1	16	9	15	41	41	0.03	C
<i>Streptopelia chinensis</i>	4	16	13	7	40	5	7	-	3	15	55	0.03	C
<i>Halcyon capensis</i>	-	1	-	-	1	-	-	-	-	1	0.00	uC	
<i>Halcyon smymensis</i>	-	7	2	8	17	-	-	-	-	17	0.01	C	
<i>Alcedo atthis</i>	-	4	2	6	12	-	-	-	-	12	0.01	C	
<i>Merops orientalis</i>	5	19	15	10	49	-	-	-	-	49	0.03	C	
<i>Upupa epops</i>	-	8	7	10	25	-	-	-	-	25	0.02	C	
<i>Dicrurus macrocercus</i>	9	13	6	8	36	-	-	2	3	5	41	0.03	C
<i>Dicrurus leucophaeus</i>	17	10	9	11	47	-	-	-	-	47	0.03	C	
<i>Corvus splendens</i>	5	9	10	10	34	-	-	-	6	6	40	0.02	C
<i>Lonchura striata</i>	2	2	4	22	33	-	-	-	-	33	0.02	C	
<i>Passer domesticus</i>	10	25	18	23	76	-	-	-	-	76	0.05	vC	
<i>Passer flaveolus</i>	2	16	9	-	27	-	-	-	-	27	0.02	C	
<i>Motacilla alba</i>	-	12	9	14	35	-	8	10	-	18	53	0.03	C
<i>Acridotheres tristis</i>	4	20	17	30	71	7	9	-	9	25	96	0.06	vC
<i>Sturnus burmannicus</i>	3	6	9	5	23	-	5	7	3	15	38	0.02	C
<i>Copsychus saularis</i>	-	-	2	1	3	-	-	-	-	3	0.00	uC	
<i>Saxicola caprata</i>	5	15	19	13	52	3	-	6	-	9	61	0.03	C
<i>Mirafra microptera</i>	5	9	-	8	22	2	8	10	8	28	50	0.03	C
<i>Pycnonotus cafer</i>	-	4	-	8	12	-	-	-	-	12	0.01	C	
<i>Turdoides gularis</i>	2	9	12	7	30	-	-	-	-	30	0.02	C	
Total					740					898	1638		



Plate 3 Recorded birds species

4. Discussion

In the present study 39 bird species were recorded from two study sites in Thu Nge Taw village, Tada - U Township during November, 2017 to February, 2018. The recorded species were distributed under ten order, 23 families and 35 genera. A total 39 species of bird composing 19 water birds and the remaining 20 terrestrial birds. Among six orders of water birds, Ciconiiformes contain nine species, four species in Charadriiformes, three species in Gruiformes and only one species in Anseriformes, Podicipediformes and Pelecaniformes.

Water bird comprise a large group of species including Anseriformes, Charadriiformes, Ciconiiformes, Gaviiformes, Gruiformes, Pelecaniformes, Podicipediformes and Procellariiformes [3]. There are eight orders of water bird in Myanmar. Six orders of these were observed in this research. It may be assumed that the study area has and rich with available food and suitable habitat condition for sheltering.

In the present study, a total of 1638 individual and 39 species were recorded during the four months in the study area. Species belong to order Passeriformes were most abundant (35.89%), followed by Ciconiiformes (23.07%), Charadriiformes, Coraciiformes (10.25%), Gruiformes (7.69%), Anseriformes, Podicipediformes, Pelecaniformes, and Columbiformes (2.56%) each. [10] the reported that 3519 birds representing 15 species belonging to 15 genera, 10 families and eight order, among them species belonging to order Columbiformes were most abundant (26.67%) followed by Pelecaniformes and Passeriformes (20%) Gruiformes, Pitaciformes, Cuculiformes, Strigiformes and Caprimulgiformes (6.67%). It is assumed that rice cultivation, vegetation and availability of food resources for water birds in the study area.

[1] recorded passerine or perching bird (Order Passeriformes) Comprise one half of all bird species. According to [9] and [8], Passeriformes present to largest Order among all recorded in South East Asia. In the present study, largest species composition was observed in order Passeriformes in which most of the terrestrial birds were recorded in present study. So this result agree with stated by [1],[8] and [9].

Myanmar possess the greatest diversity of bird species, at least 1,096 avifauna species, in South East Asia, including 6 endemic species and 46 bird species listed on the Red List. Bird species endemic to Myanmar include Jerden's minivet (*Pericrocotus albifrons*), hooded treepie (*Crypsirina cucullata*) Burmese bush lark (*Mirafraga microptera*), Burmese tit (*Aegithalosharpie*), white-throated babbler (*Turdodides gularis*) and white-browed nuthatch (*Sitta victoria*) [4]. In the present among the recorded species 39 species of birds were observed in all sampling site. Some species occur only in one site. Myanmar endemic bird species

(*Mirafraga microptera* and *Turdodides gularis*) were found.

5. Conclusion

A total of 39 bird species was recorded during the study period. According to species composition, the order Passeriformes (10 species, 35.89%) was found to be dominant species among the orders recorded in the study area. The abundance of avifauna in Thu Nge Taw village is due to the good habitat with variety of vegetation, paddy fields and seasonal cultivated plants. It may be concluded that Thu Nge Taw village is a suitable environment for bird species to inhabit and thrive.

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