

Estimation of population abundance of Some Parakeet Species in Shwesettaw Wild Life Area in Minbu, Magway Region, Myanmar

Thin Thin Khaing,
Associate professor
Department of Zoology, University of Magway
Magway, Myanmar

Khin Myint Mar
Associate professor
Department of Zoology, University of Magway
Magway, Myanmar

Abstract:- This study was conducted in Shwesettaw wildlilfe area in Minbu, Magway Region. The study period lasted from December 2017 to August 2018. The study area is divided into three study sites. Five parakeet species of *Psittacula alexandri*, *Psittacula eupatria*, *Psittacula finschii*, *Psittacula krameri* and *Psittacula roseate* were observed. The population abundance of parakeet species was investigated. The highest total number of individual were recorded in site II (6021) followed by Site I (3319) and lowest in Site III (2540). By evaluating the relative abundance, *P. alexandri* was the highest (35.86%) and *P. roseate* (32.03%), *P. finschii* (18.17%) and *P. krameri* 11.03%) and *P. eupatria* (2.71%).

Keywords:- Abundance; Near Threatened; Parakeets; *Psittacidae*; *Wildlilfe*.

I. INTRODUCTION

Estimating the size of wild populations is essential for quantifying population dynamics and identifying species that require protection and sustainable harvesting targets [1].

The order Psittaciformes (parrots and cockatoos; hereafter parrots) is among the most threatened avian orders [2]. Many parrot species, however, have not been the subject of dedicated ecological study [3] and this lack of knowledge is a particular concern given that parrots are disproportionately at risk of extinction compared with other bird families [4]. Forty-two per cent of the world's parrots are classified as Threatened or near Threatened. Measures of population size, density and abundance change underpin much of our understanding of extinction risks that taxon or population face [5] and contribute to the criteria on which the IUCN Red List are based [6] While the quantitative data we are able to gather on animal and plant abundance or abundance change are not without problems [7].

Shwesettaw Wildlife Sanctuary lies in the southwestern part of Myanmar central dry zone, has a 546 km² wildlife and forestry reserve (20° 04' N; 94° 36' E). Seasonal change of study area is strong from heavy monsoon rains (May to November; annual rainfall average, 70 cm) to a lack of rainfall (December to April). A dry tropical deciduous forest covers much of the Sanctuary with an indaing forest with open canopy and grass ground

cover. The Sanctuary is surrounded by the Mone Stream in the northern border and the Man Stream in the southern border. Both streams flow eastward and drain into the Ayeyawady River. Within the Sanctuary, there are numerous jungle tracks and a major north-south highway. These roads, a major Buddhist pagoda complex and numerous villages adjacent to the Sanctuary boundaries make potential to eliminate parrot species and difficult to control [8].

During pago During the Shwesettaw Pagoda festival, many parrots are sold as pets. Local poachers purchase adults, young and nestlings of parakeets. For the above reasons, parakeets are seriously threatened in the study area. Thus, present research is carried out with the following objectives:

- To identify and record the parakeet species in Shwesettaw Sanctuary area and
- To investigate the abundance and relative abundance of species studied.

II. MATERIALS AND METHODS

This study was conducted in Shwesettaw Wildlife Area. The study area lies on the northern edge of the central plains of Myanmar (Latitude 20° 3' - 20° 19' N, Longitude 94° 22' - 94° 42' E) and covering an area of 552.70 square kilometer. The study area is divided into three study sites. Site I, Phayar village, environs of zone I of Shwesettaw Wildlife Area, lies at Latitude 20° 6' 39.67" N - Longitude 94° 31' 29.61" E. The total area is about 3 square kilometer. Site II, Phadaung village, zone (IV) of Shwesettaw Wildlife Area, situated at Latitude 20° 2' 28.49" N - Longitude 94° 35' 47.54" E. The total area is about 4 square kilometer. Site III, Near Lat Pan Taw Camp, zone III of Shwesettaw Wildlife Area, environs located at Latitude 20° 8' 7.66" N - Longitude 94° 33' 39.13" E. The total area is about 3 square kilometer. Five sampling points were set up in each study sites. The collection of data was made by point count method [10]. The study period was lasted from December 2017 to September 2018. Data collection was collected per month. The collected parakeet species were identified referring to the taxonomic descriptions given by [11] and [12]. Study sites were categorized into tree dominated area, bushy area, grass land, cultivation area, hill with scattered trees and human habitation. Counting of the parakeet started around 6:00am to 9:00 am as they were rooting sites and feeding ground.

$$\text{Relative Abundance} = \frac{\text{No. of individuals of a species}}{\text{Total no. of individuals of all species species}} \times 100$$

[13]

III. RESULTS

Habitats types of study sites; Site I (Phayar Village) was tree dominated area, there were plenty of *Terminalia oliveri*, *Tectona hamiltoniana*, *Albizzia chiensis*, *Acacia catechu*, *Shorea oblongifolia*, *Shorea siamensis*, *Terminalia alata*, *Lannea grandis* on hills. Bushes were scattered near Mann steam and on hills. Grass ground and cultivation, sesame field, maize field, sorghum field, chickpea field and banana plantation were found near Phayar Village. Mann stream goes throughout the study sites. In site II (Phadaung Village), there were bushes, grass ground, cultivation, maize field, sorghum field, neem tree, sunflower and banana plantation, vegetated swamp. Many high trees were scattered scarcely. Site III(Near Lat Pan Taw Camp) was tree dominated area with *Terminalia oliveri*, *Tectona hamiltoniana*, *Albizzia chiensis*, *Acacia catechu*, *Shorea oblongifolia*, *Shorea siamensis*, *Terminalia alata*, *Lannea grandis*. It was bushy area and few grass ground were found. There were no banana plantation, maize field and sorghum field.

A. Occurrence of Parakeet Species in Study Sites

During the study period, from December 2017 to August 2018, a total of five parakeet species belonging to family Psittacidae of order Psittaciformes was observed. They were *Psittacula alexandri*(Linnaeus, 1758), *Psittacula eupatria*(Linnaeus, 1766), *Psittacula finschii*(Hume, 1874), *Psittacula krameri* (Scopoli, 1769) and *Psittacula roseate* Biswas, 1951.

B. Abundance of Parakeet Species in Study Sites

A total of five parakeet species were observed in study site I. Among them, *P.alexandri* was the most common with the number of (1045 individuals), followed by *P.roseata* (765), *P.krameri* (725), *P.finschii* was (700) and the least common was *P.eupatria* (84). Monthly occurrence of birds were highest in January (486) followed by March (460), December (430), February (420), April (380), May (305) and August (290), June (278) and July (270).

In site II, *P.alexandri* was the most common with the number of (2385), followed by *P.roseata*(2280), *P.finschii* was (1015), *P.krameri* (235) and the least common was *P.eupatria* (106). Monthly occurrence of birds were highest in December (824) followed by February (786), January (780), March (764), April (692), July (575), June (505), May (600) and August (495). In study site III, *P.alexandri* was the most common with the number of (375), followed by *P.roseata* (354), *P.finschii* was (213), *P.krameri* (211), and the least common was *P.eupatria* (117). Monthly occurrence of birds were highest in March (180) followed by February (173) and April (160), December (149),

August (137), January (127), May (122), July (103), and June (119).

In all study sites, the highest number of parakeet was recorded in the month of December to April. In May to August, the lower number of parakeets was observed. The highest number of parakeet was *P.alexandri* (3805), secondly *P.roseata* (3399), *P.finschii* was (1928), *P.krameri* was (1171), and *P.eupatria* was (307). In accordance with study site, the highest total number of individual were recorded in study site (II) (3671) followed by site (I) (3319) and the lowest in site (III) (2540) during the study period from December 2017 to August 2018.

C. Relative Abundance

In all study sites, *P. alexandri* revealed the highest relative abundance (35.86%), followed by *P.roseata* (32.03%), *P. finschii* (18.17%), *P.krameri* (11.03%) and *P.eupatria* (2.89%).

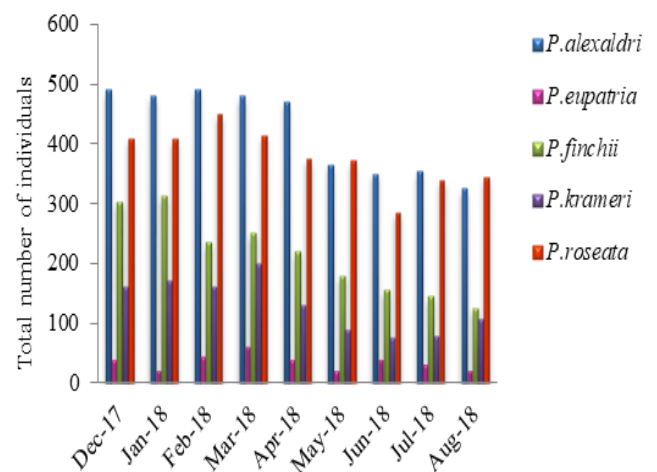


Fig 1:- Occurrence of parakeets in the study area

IV. DISCUSSION

The present study was conducted in Shwesttaw wildlife area, it is located in the central dry zone of Myanmar and conserved the natural forests. A total of five parakeet species were observed, they were *P.alexandri*, *P.eupatria*, *P.finschii*, *P.finschii* and *P.finschii*.

In accordance with study site, the highest numbers of parakeet were found in study site II (3671). In this study site, there were many plantations and tree dominated area, sesame field, maize field, sorghum field, chickpea field, banana plantation and Mann stream. This study site provided foods and shelter for parakeet. The second highest number of parakeets were found in study site I (3319). This study site composed of forest area, some hills, grassland, cultivation areas such as sesame field, maize field, sorghum field, chickpea field and banana plantation situated near Mann stream. There were many cavity trees for nesting and food resources were near in nesting places. The lowest number was found in Site III (1270). There was many big trees whereas no cultivation area for food resources.

Nest sites and food are essential resources that influence avian survival and population dynamics. Because many parrots' species are medium to large bodied secondary cavity- nesters that need to meet the dual challenges of obtaining a tree cavity of sufficient size, but with characteristics to reduce predation risk[12].

The highest number of parakeet was recorded in the month of December to April. At this time, there was many cultivated areas sesame field, maize field, sorghum field, chickpea field, sunflower and banana plantation in the study areas. In May to September, the lower number of parakeets was observed. It would be lack of plantation for their food.

Parakeets feed on unripe seeds, fruit pulp, flowers, nectar and leaves of distinct plant species. Thus, the resource availability is important .Parakeets adjust their dietary niche according to fluctuations in the number of fruiting plant species available. In some cases, parakeets exhibit a broader dietary niche when more food resources are available, suggesting that they are taking advantage of additional food resources [13].

In the present study, the relative abundance of each parakeet was also recorded. The highest was *P.alexandri* (0.4383), followed by *P.roseata* (0.2560), *P.finschii* (0.1263), *P.krameri* (0.1128) and *P.eupatria* (0.0658). *P.alexandri* can adapt and survive in Shweseztaw wildlife area. *P.eupatria* was most attractive and valuable than the other parrots and most scarce.

V. CONCLUSION

In the present study,parakeet population is rather large in Shweseztaw wildlife area. *P.alexandri* and *P.roseata* were more frequent than *P.eupatria*.The abundance of parakeet indicated correlation with the food source availability.

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