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A preliminary report on the bat (Chiropteran: Mammalia) fauna of Sariska National Park, Rajasthan, India

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Abstract

More than 1125 bat species are found worldwide and India supports 119 species; of which 26 species are reported from Rajasthan. In Rajasthan, except Thar desert portion, documentation of this faunal group is either lacking or very poor in other parts of Rajasthan including Sariska National Park, Alwar. The present study reports 3 bat species from Sariska National Park that provides baseline data about chiropteran fauna of this Protected Area. With this reporting the chiropteran fauna of Alwar district also goes up to 8 species.

Keywords: Alwar, Bat, Chiropteran, Fauna, National Park, Rajasthan, Sariska.

1. Introduction

Bats (Chiroptera: Mammalia) are the second largest group of mammals after rodents [1] and India has an incredible diversity of bats. More than 1125 bat species are found worldwide and India supports 119 species; of which 26 species are reported from Rajasthan [2-11]. Though, bats play a vital role in both natural and managed ecosystems, as insect pest controller, seed disperser and pollinators, they represent one of the most neglected faunal groups and hence, poorly studied animals among land mammals worldwide [12]. Rajasthan state, India is not an exception. Except Thar desert portion, documentation of this faunal group is either lacking or very poor in other parts of Rajasthan including Sariska National Park, Alwar [3]. The present study aims a preliminary investigation of bat fauna of this Protected Area.

2. Materials and Methods

The study is based on a survey carried out in Sariska National Park, Alwar (Figure 1) in May 2014. Bats were searched following opportunistic search in different possible microhabitats - on trees, in caves, crevices, old buildings, monuments and inside water tanks and wells. All searches were carried out during day time only. Bats were examined and identified on the spot following manuals of Srinivasulu *et al.* 2010 [2].

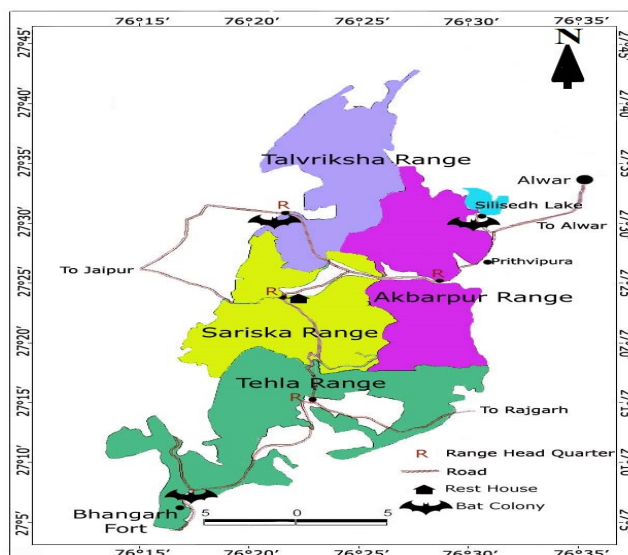


Fig 1. Location map of Sariska National Park

3. Results

The authors herewith provide observation sites and the natural history notes of 3 spp. encountered during the present survey. Roosting of Indian flying fox *Pteropus giganteus* (Brünnich, 1782) (Figure 2A) on arjun (*Terminalia arjuna*) and gular (*Ficus racemosa*) trees was observed at two sites; Talvriksha village (27°28'37.84" N; 76°23'38.61" E) and Silisedh (27°30'57.18" N; 76°32'0.86" E). Both the locations were on village road sides and surrounded by human settlements. At Talvriksha village more than a hundred bats were roosting on an arjun tree. They were found flying at regular intervals (Figures 2 B & C). Intra-specific competition for space was observed among these bats as some of them were struggling to get more space. A few were seen flying to a nearby date palm tree (*Phoenix dactylifera*) (Figure 2D) where they found to crack and suck its fruit for some time and again return to their roosting tree. Inter-specific competition with common crows was also observed in this colony. At Silisedh, more than two hundred bats were observed roosting on two gular trees adjacent to each other. To get rid of rain, these bats were trying to hide their body inside patagia. Intra-specific competition for space and flying at regular intervals was also observed in this colony.



Fig 2: A. Roosting of *P. giganteus* on gular tree; B, C. Flight posture of *Pteropus giganteus*, Ventral view (B), Dorsal view (C); D. *P. giganteus* on date date palm tree

Mixed colony of lesser mouse-tailed bat *Rhinopoma hardwickii* Gray, 1831 and greater mouse-tailed bat *Rhinopoma microphyllum* (Brünnich, 1792) (Figure 3A) was observed at Bhangarh fort (27°05'45.93" N, 76°17'21.98" E). Both the species are insectivorous and found to coexist in this fort. Basically two types of roosting sites of these bats were observed inside the fort; in water storage tanks (on walls) and inside low and medium height buildings (on walls and roof). These places were entirely dark and devoid of sunlight during the day time. Population of 50-100 individuals of both species was observed at each roosting site. In total, population of about five hundred individuals of these bats were observed including all rooms and storage tanks, and the number of *R. hardwickii* (Figure 3B) individuals was less in comparison to *R. microphyllum* (Figure 3 C & D) in the entire chiropteran colony of the fort.



Fig 3: A. Mixed colony of *Rhinopoma hardwickii* and *R. microphyllum*; B. Colony of *R. hardwickii*; C, D. Colony of *R. microphyllum*

4. Discussions

So far, five bat species *Tadarida aegyptiaca* (E. Geoffroy, 1818), *Scotophilus kuhlii* Leach, 1821, *S. heathii* (Horsfield, 1831), *S. dormeri* (Dobson, 1875) and *Kerivoula picta* (Pallas, 1767) are reported from Alwar district of Rajasthan^[3]. Hence, with our reporting, the bat fauna of Alwar district goes up to 8 spp. Reporting of 3 bat species from Sariska National Park provides base line data about chiropteran fauna of this Protected Area and also further evidence for existence of these species in Aravalli foot hill range of Rajasthan. Keeping in mind our finding is based on a very short term survey carried out during day time only, there is a possibility of existence of more bat species in this area. Hence, there is a need for systematic day-night survey covering all seasons of the year to understand gross chiropteran diversity of the area.

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