

ISSN 2347-2677
IJFBS 2015; 2(4): 86-88
Received: 12-05-2015
Accepted: 15-06-2015

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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].

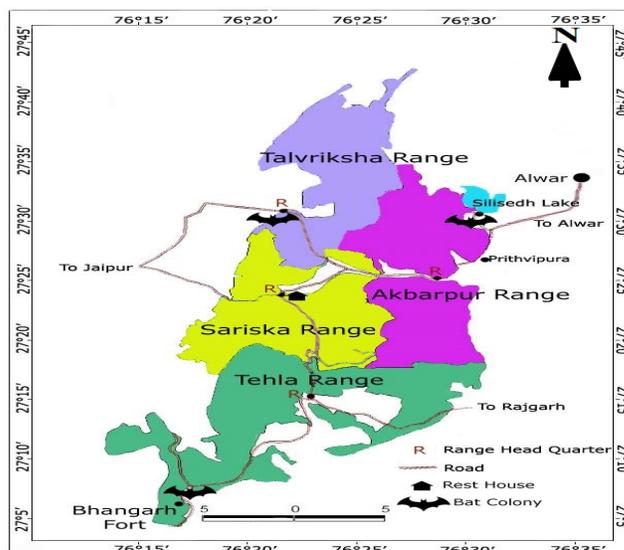


Fig 1. Location map of Sariska National Park

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.

5. Acknowledgements

Financial assistance from the Department of Science & Technology (DST), Government of India, New Delhi has made it possible to carry out this work. Authors are grateful to the Department of Forest, Government of Rajasthan, for according permission and providing logistic help during survey. Sincere thanks are due to Mr. Manoj K. Parashar (Deputy Conservator of Forests, Sariska National Park) for his valuable support and cooperation, Dr Justus Joshua (Director, Green Future Foundation, Udaipur) and Dr. C. Srinivasulu (Assistant Professor, Osmania University, Hyderabad) for their assiduous help in confirmation of the species.

6. References

1. Tudge C. The Variety of Life. Oxford University Press, New York, 2000, 685.
2. Srinivasulu C, Racey PA, Mistry S. A key to the bats (Mammalia: Chiroptera) of South Asia. Journal of Threatened Taxa 2010; 2:1001-1076.
3. Srinivasulu C, Srinivasulu B, Sinha YP. Faunal Heritage of Rajasthan, India: General Background and Ecology of Vertebrates. Springer, New York 2013; I:505-548.
4. Taylor PJ, Stoffberg S, Monadjem A, Schoeman MC, Bayliss J, Cotterill FPD. Four new bat species

- (*Rhinolophus hildebrandtii* complex) reflect Plio-Pleistocene divergence of dwarfs and giants across an Afromontane Archipelago. Plos ONE 2012; 7(9):e41744.
5. Dias D, Esberard CEL, Moratelli R. A new species of *Lonchophylla* (Chiroptera, Phyllostomidae) from the Atlantic Forest of southeastern Brazil, with comments on *L. bokermanni*. Zootaxa 2013; 3722(3):347-360.
 6. Monadjem A, Goodman SM, Stanley W, Appleton B. A cryptic new species of *Miniopterus* from south-eastern Africa based on molecular and morphological characters. Zootaxa 2013; 3746(1):123-142.
 7. Monadjem A, Richards L, Taylor PJ, Stoffberg S. High diversity of pipistrelloid bats (*Vespertilionidae*: *Hypsugo*, *Neoromicia*, and *Pipistrellus*) in a West African rainforest with the description of a new species. Zoological Journal of the Linnean Society 2013; 167:191-207.
 8. Senacha KR, Dookia S. Geoffroy's Trident Leaf-nosed bat, *Asellia tridens* (Geoffroy, E., 1813) from India. Current Science 2013; 105(1):21-22.
 9. Soisook P, Karapan S, Satasook C, Bates PJJ. A new species of *Murina* (Mammalia: Chiroptera: Vespertilionidae) from peninsular Thailand. Zootaxa 2013; 3746(4):567-579.
 10. Puechmaille SJ, Allegrini B, Benda P, Gürün K, Šrámek J, Ibañez C i.e. Juste, J. and Bilgin, R. A new species of the *Miniopterus schreibersii* species complex (Chiroptera: Miniopteridae) from the Maghreb Region, North Africa. Zootaxa 2014; 3794(1):108-124.
 11. Velazco PM, Lim BK. A new species of broad-nosed bat *Platyrrhinus Saussure*, 1860 (Chiroptera: Phyllostomidae) from the Guianan Shield. Zootaxa 2014; 3796(1):175-193.
 12. Devkar RV, Jayaraman S, Upadhyay K, Patel P. Albino microchiropteran, *Rhinopoma microphyllum* kinneri sighted in a bat colony inhabiting abandoned mines. Current Science 2013; 100(2):165-166.