



## Additional records of Greater Short-nosed Fruit Bat *Cynopterus sphinx* from the Thar Desert, India

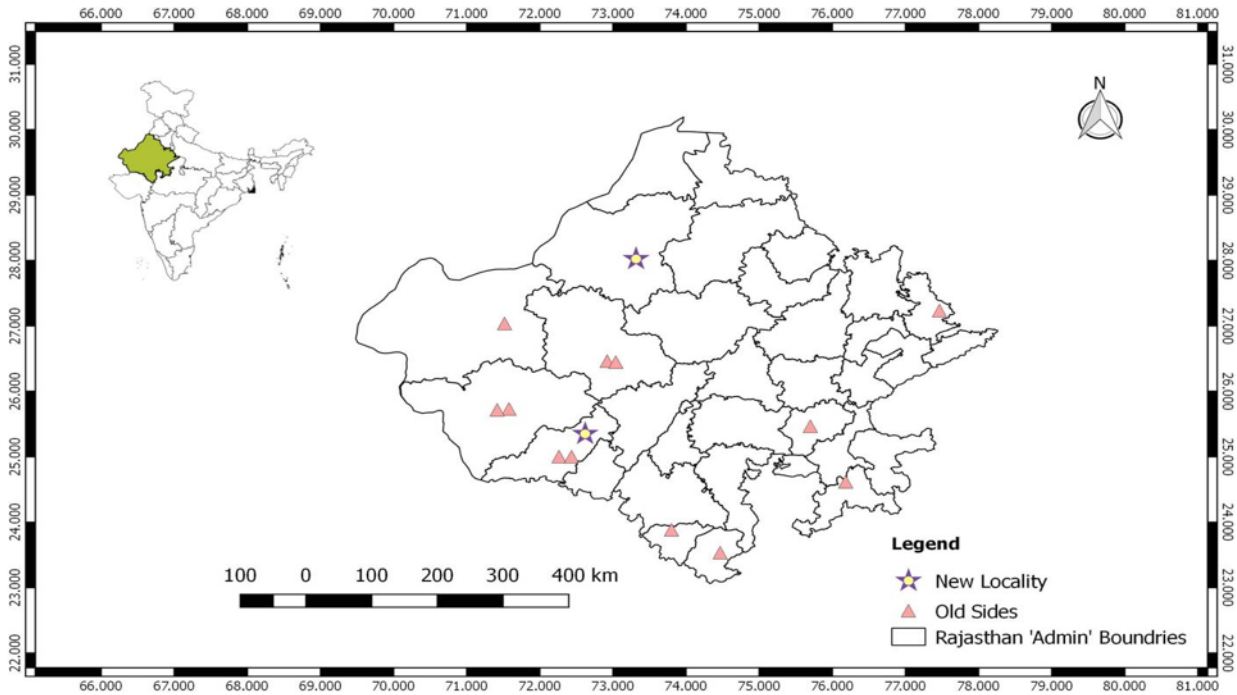


Short-nosed Fruit Bat roosts: A—Roost at Junagarh | B—Junagarh fort of Bikaner | C—Roost at Mansingh fort | D—Jalore fort. © Rakesh Kumawat.

The Greater Short-nosed Fruit Bat *Cynopterus sphinx* (Vahl, 1797) (Mammalia: Chiroptera: Pteropodidae) is one among the 14 species of old world fruit bats in the Indian subcontinent. It is found in a variety of roosts, tents, under leaves, lumped leaves, stems, cavities of barks, aerial roots and humanmade abandoned structures (Brosset 1962) feeding on more than 30 species of plants. It is listed as Least Concern on the IUCN Red List (Bates et al. 2008). This Fruit Bat has typical taxonomic

features as the second finger with a claw, small wingspread (below 600mm), visible tail and four teeth in upper molar series and five in lower (Sinha 1980).

Earlier, the western part of the subcontinent was represented by a few localities as a single record from Malir, Karachi and “Kashmir Smasta” in Pakistan; Danta, Vedtial in Anand and Silvassa in Surat District of Gujarat State; Bundi, Banswara and Jhalawar of Rajasthan State.



Map showing old reported sites (Bundi, Banswara, Jhalawar, Bharatpur, Sirohi, Pratapgarh, Jodhpur, Jaisalmer, Barmer & Bhinmal Jalore) and new locality (Mangarh fort, Jalore and Junagarh fort, Bikaner).

Recent studies on bat diversity and distribution revealed the anomalous pattern of their occurrence and distribution. With the effect of eco-transformation in the desert due to exposure to Indira Gandhi Nahar Pariyogna (IGNP), agroforestry practices have risen resulting in the flourishing of fruit plants in the region. This change has led to the emergence of fruit bats in this region proportionally. Fruit Bats are reported for the first time from the Thar Desert of Bikaner District of Rajasthan State.

Prakash (1963) explored the Thar Desert and the western part of Rajasthan and updated the status of bats. After the implementation of IGNP canal, the comprehensive knowledge of ecology,

distribution and status of chiropteran fauna in the region was studied (Sinha 1980; Purohit & Vyas, 2009; Singh et al. 2014). Now, the IGNP canal covers more than 12 districts which gives space for work on Chiroptera demographic and ecological studies to be performed and bridge the gap in the research conducted after 1980.

In this article, we have added the new distinct localities of Short-nosed Fruit Bats in the western Indian Thar desert. This record is the second from Mansingh Fort after Bhinmal in Jalore District, the First being from Junagarh Fort in Bikaner.

We did not collect the specimens. Instead, we captured and released the individuals with the help of mist nets after the



**Table 1. Morphometric measurements of the Short-nosed Fruit Bat. Sigh #- Specimen studied from Jalore Fort (n=3), and \* - Specimen studied from Bikaner Fort (n=1). Abbreviations used: HB- Head and Body length, T-Tail length, FA- Forearm, HF- Hindfoot, E- Ear, WS- Wingspan, TIB- Tibia length. Sign (-)means no data.**

Locality	Geo Location	HB	T	FA	HF	E	WS	TbL	Date	Refer-ence
Indian Sub-continent	~	76-113	4.5-19	64-79	12.6-18	17.5-24	309-436	~	1997	Bates & Harrison (1997)
Bhinmal	25.002°N; 72.262°E	~	~	~	~	~	~	~	06-02-2003	Dookia (2004)
Lathi	27.036°N; 71.516°E	98-108	15-18	68-75	14-17	19-23	340-378	32-35	08-10-2003	Senacha et al. (2006)
Tinwari	26.461°N; 72.921°E	98-108	15-18	68-75	14-17	19-23	340-378	32-35	08-10-2003	Senacha et al. (2006)
Mansingh Fort (MFJ1#)	25.350°N; 72.620°E	102	15	73	17	20	340	33	25-02-2009	This study
Mansingh Fort (MFJ2#)	25.350°N; 72.620°E	101	15	70	15	21	343	35	25-02-2009	This study
Mansingh Fort, (MFJ3#)	25.350°N; 72.620°E	108	16	72	17	22	350	36	25-02-2009	This study
Junagarh Fort, (JFB1')	28.022°N; 73.316°E	106	15	72	16	22	362	37	30-03-2018	This study

measurement analysis. In Mansingh fort, we examined n=3 individuals and n=1 was captured in Junagarh fort. Later, we compared the morphological pattern and relevant taxonomical data to the available literature ( Dookia 2004; Senacha et al. 2006; Srinivasulu et al. 2013) (Table 1).

**Observation**

During our survey in the Thar desert of Rajasthan, we recorded two diurnal roosts of the Short-nosed Fruit Bats on 25 February 2009. One roost seen at

Mansingh fort of Jalore District (25.350° N; 72.620° E) and the other roost of 70–75 members located in Junagarh Fort (28.022° N; 73.316° E) of Bikaner District on 30 March 2018. Both records are taken from isolated old dark places of historical forts. The ecology of the Jalore District is influenced by semi-arid urban terrain, while Bikaner is too dry and has arid environment with dunes topology.

In Jalore, the Short-nosed Fruit Bats observed roosting in a semi-dark section of



an old fort along with two micro chiropteran species *Rhinopoma microphyllum kinneari* and *Rhinopoma hardwickii*. A similar microhabitat was observed in Junagarh Fort at Bikaner. Five consecutive chambers of the old fort of Jalore were filled up with the bats mainly of *Rhinopoma microphyllum kinneari* whereas one chamber was a roost of *Cynopterus*.

### References

**Bates, P.J.J. & D.L. Harrison (1997).** Bates of Indian Subcontinent. *Harrison Zoological Museum* 258.

**Bates, P., S. Bumrungsri, S. Molur & C. Srinivasulu (2008).** *Cynopterus sphinx*. The IUCN Red List of Threatened Species 2008: e.T6106A12427966. Downloaded on 12 November 2019.

**Brosset, A. (1962).** The bats of central and western India. Part I. *Journal of Bombay Natural History Society* 59: 1–57.

**Dookia, S. (2004).** Occurrence of the Short-nosed Fruit Bat (*Cynopterus sphinx* Vahl, 1797) in the Thar desert of Rajasthan. *Zoo Print Journal* 19(9):1629. <https://doi.org/10.11609/JoTT.ZPJ.1137.1629>

**Prakash, I. (1963).** Taxonomic and biological observations on the bats of the Rajasthan desert. *Record of Indian Museum* 59 (1–2): 149–170.

**Purohit, A. & K.B. Vyas (2009).** Eco-status of chiropteran fauna in and around Jodhpur, Jaisalmer and Bikaner of Great Indian Desert. In: Sivaperuman, C., Baqri, Q.H., Ramaswamy, G. & Naseema, M. (Eds.). *Faunal Resources in Great Indian Desert: Springer-Verlag Berlin Heidelberg, Germany*, 137–155.

**Senacha, K.R., K.B. Vyas & A. Purohit (2006).** New record of short-nosed fruit bat *Cynopterus sphinx* (Vahl, 1797) from Thar desert, Rajasthan. *Zoo's Print Journal* 21(10):2419–2420. <https://doi.org/10.11609/JoTT.ZPJ.1428.2419-20>

**Singh, P., M.K. Yadav, J. Solanki & O.M. Chahula (2014).** Dynamics of Chiroptera population in and around Bikaner city of the Thar Desert, India. *Muzeul Olteniei Craiova. Oltenia. Studii și comunicări. Științele Naturii. Tom* 30(2): 167–174.

**Sinha, Y.P. (1980).** The bats of Rajasthan: taxonomy and zoogeography. *Record of the Zoological Survey of India* 76:7–63.

**Srinivasulu, C., Srinivasulu, B. & Sinha, Y.P. (2013).** Chiropteran fauna of Rajasthan: taxonomy, distribution, and status, pp. 505–548. In: Sharma, B.K. S. Kulshrestha & A.S. Rahmani (eds.). *Faunal Heritage of Rajasthan, India: General Background and Ecology of Vertebrates*. Springer Science+Business Media New York., USA.

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