



REVIEW OF RESEARCH

ISSN: 2249-894X

IMPACT FACTOR : 5.7631 (UIF)

UGC APPROVED JOURNAL NO. 48514

VOLUME - 8 | ISSUE - 9 | JUNE - 2019



BIODIVERSITY OF INDIAN FLYING FOX IN MUDDEBIHAL TOWN, KARNATAKA, INDIA

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ABSTRACT:

The investigation focuses on biodiversity, roosting and feeding habits of Indian flying fox (*Pteropus giganteus*) in Muddebihal town. Visiting field during evening was carried out to observe the roosts. Roosting sites, food plants were also documented.

KEYWORDS: Flying fox, Megachiroptera, Muddebihal town.



INTRODUCTION

Flying fox is a contender for the world's largest Bat species. Flying foxes are mainly nocturnal, ie they are active in the night. They live in groups containing males, females and young ones. They belong to the order-chiroptera of class mammalia.

Most of them roost in landscapes with emergent trees providing shelter from strong winds, regulating temperature, providing easy exit for upward flight and serving as food (Cheke and Dahl, 1981., Pierson and Rainey, 1992., Richmond *et al.*, 1998).

Local climate, seasonal food availability among flying foxes are main factors responsible for roosting behavior in them,

(Kunz, 1982., Perry-jones and Augee, 1991., Law, 1993). Roosts of Indian flying fox were also observed in forest plantations of Casurina species, Acacia species and Indigenous tree species such as Ficus, Indian date (*Tamarindus indica*) and Eucalyptus.

According to Chakravarthy and Yeshwanth (2008), roost trees in urban areas include Ficus species, Eucalyptus species, Acacia species, Mangifera indica and Jackfruit tree (*Artocarpus heterophyllus*).

The Indian flying fox is also called as Indian fruit bat. It is of interest as a disease vector, as it is capable of transmitting several viruses to humans. According to Dr. Sanath Krishna Muliya, programme manager and senior center veterinarian of Alexander wild lab, Five species out of the 19, inhabit India, but not all of them are dangerous.

Indian flying fox is the only species, as of now which is proved to carry the Nipha virus.

AIMS AND OBJECTIVES

No reports are there on the biodiversity of flying fox (*Pteropus giganteus*) (Fig-1) of Muddebihal town. Therefore, the present investigation was initiated to record the biodiversity in the Muddebihal town and also to study the roosting ecology, feeding habits. Five kms area around the town is considered for the present investigation.

MATERIALS AND METHOD

The research work was undertaken from August 2018 to May 2019. The roosting sites were visited monthly and data regarding roost tree species, diameter of breast height, height and flowering season were recorded.

Flying foxes were counted in each roost (Fig-2) through direct roost count method (Kunz *et al.*, 1996). Tree height was estimated by taking a consensus and the circumference of the tree trunk was measured at breast height using a measuring tape. The flowering and fruiting of roosting trees were observed during monthly visits.

The names of plants which flying foxes visited, parts consumed by them were recorded (Table-I). The plants were identified by their common names in the field and their botanical names and taxonomic positions are classified with the help of taxonomists and their Manuals.



Fig-1. *Pteropus giganteus*

RESULT

Indian flying fox (Fig-1), has established its permanent roosts in Muddebihal town (Eucalyptus and Tamarind species, SBI road). Here three spots, the roosting trees of the bats were observed. The spots are located near the main bus station of Muddebihal town. The bats were constantly recorded in these spots and never roosted on any other tree outside these spots.

The roosting tree included indigenous tree species like Eucalyptus belongs to the family-Myrtaceae and Tamarind belongs to the family-Fabaceae. Total trees at the spot were five. The diameter at breast height (dbh) of roosting trees ranges from 25-30ft. the minimum roost tree height was recorded as 90ft.

The wing span of flying fox was about 1.2mts. They feed on nector of the flowers (Nectarivorous) and fruits (Frugivorous). The common name, species, class and IUCN status are mentioned in Table-I.

Table -I. Table shows species of flying fox in Muddebihal town

| Common name | Species Name | Family | Class | IUCN status |
|------------------|---------------------------|--------------|----------|--------------------|
| Indian fruit bat | <i>Pteropus giganteus</i> | Pteropodidae | Mammalia | LC (Least concern) |



Fig-2. *Pteropus giganteus* roost in Plant

DISCUSSION

The fruit bats have received international conservation attention as forest pollinators and seed dispersers for nearly two decades. Their populations are still declining throughout their range (Fujita 1988, Power *et al.*, 1996, Wiles *et al.*, 1997). There were findings of Reginald *et al.*, 2008, who documented *Ficus religiosa*, *Tamarindus indica*, *Albizia lebbbeck*, *Delonix regia*, *Polyalthia longifolia*, and *Acacia* species as roosting tree species for *Pteropus giganteus* in a public park of Tamil Nadu, India.

Chakravarthy *et al.*, 2008 reported, a roosting site of *Pteropus giganteus* extending on 0.40 hectare in Tumakooru, India. Ali (2010) documented *Caesalpinia inermis*, *Ficus bengalensis*, *Ficus religiosa*, *Ficus glomerata*, *Eugenia jambolana*, *Eucalyptus globossus*, and *Mangifera indica*. *Pteropus* species display remarkable seasonal changes in roost composition and colony size (Mickle Burgh *et al.*, 1992, Pierson and Rainey 1992, Wiles *et al.*, 1997).

Table. II. Table showing roosting sites of flying fox in Muddebihal town

| Species Name | Habitat of the roosts | Roost tree | Number of individuals in Roost |
|---------------------------|--|---|--------------------------------|
| <i>Pteropus giganteus</i> | Surrounding the main bus station Muddebihal. | Eucalyptus species and <i>Tamarindus indica</i> | 100-200 |

CONCLUSION

It can be concluded from the present study that *Pteropus giganteus* prefers to roost near water bodies, on tall trees with medium diameters near Mango orchards, Banana fields etc. in Muddebihal town flying fox roost on Eucalyptus species and *Tamarindus indica* near main bus station (Table-II). The roost contains about 100 to 200 individuals.

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