



# A SIGNIFICANT ROLE OF CHIROPTERA (MICRO AND MEGA BATS) IN ECOSYSTEM

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## Abstract:

Chiroptera are very good and most beneficial creatures among nature. Bats are playing the critical economic and ecological roles in ecosystem. Bats are divided into two sub orders microchiroptera and megachiroptera. Chiropteran species behavior viz., social, aggressive, gregarious, solitary and friendly. Mega bats eat fruit, pollen, leaves and animals. Micro bats eat insects. Bats are playing an important role in ecosystem such as pollination, seed dispersion, insect control, guano. In this way, chiroptera are excellent services in ecosystem.

Keywords: *Pollination, Insect control, Environment, Microbats, Megabats.*

## Introduction

Bats are flying mammals. Order chiroptera divided by two sub orders megachiroptera and microchiroptera (Soni, 2019) Fig(1,2). Chiroptera are a different group of mammals presented on every major land, except the Polar region and a few oceanic islands (Hassi, 2018). Ecosystems are two types natural and artificial. Biotic (flora and fauna) and Abiotic (physical and chemical) factors are present in ecosystem. Bats are excellent bio-indicator of ecosystem. Bats roosted such as caves, trees, temples, unused buildings, monuments and other. Chiropteran species provide ecosystem services viz., pollination, seed dispersal and insect control. Many plants are depended totally on bats for spreading their seeds or pollinating the flowers.

Insectivorous bats play an important ecological role in the transfer of nutrients in ecosystems (Pierson, 1998) and in the control of insect populations including agricultural pests (Boyles *et al.*, 2011). Chiroptera are one of the vertebrates of the agro-economy backbone of any country by consuming thousands of insects in a night; microchiropteran bats help the farmers to save millions of rupee annually. The majorities of chiroptera are insectivorous in nature and are the primary consumers of nocturnal insects. They are serious pests for variety of crops and thus play a crucial role in keeping population of night flying insects in balance in many parts of the world (Soni, 2013).

Bats are also consuming a variety of these insects including *Lepidoptera*, *Coleoptera*, *Homoptera*, *Hemiptera* and *Trichoptera* (Ross, 1967; Black, 1974; Whitkar and Black, 1976; Anthony and Kunz, 1977; Warner, 1984; Dalton *et al.*, 1986; Rydell, 1986 and Kunz *et al.*, 1995).



Fig.1 Mega bat (*Pteropus giganteous giganteous*) Fig.2 Microbats

Guano (fecal matter) is actually an excellent fertilizer. Guano is not only a rich fertilizer for crops and other plants, but it also supports whole ecosystem of organism which may be commercially important for humans. It contains roughly 10% N, 3% P and 1% K along with other minor and trace elements essential for a plant's overall health [Keleher, 1996]. Indian false vampire bat (*Megaderma lyra*) has been described as a "good friend of farmers" in the state of Bihar and farmers who call it as goddess "laxmi" (Sinha, 1986). Chiroptera playing central roles in the maintenance and regeneration of ecosystem.

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