

Bats Are Helpful Too

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IN many cultures, bats have been associated with ill omens. Most recently, bats came in for lots of brickbats when it was learnt that the deadly COVID-19 was due to a virus that was bat-borne.

Bats have spawned a large number of myths around the world:

- Building bats are thought to bring bad luck. Even William Shakespeare associated them with ghosts, curses, and spells in “Macbeth”.
- Bats are said to feed on human blood, and a bat bite could turn us into vampires.
- Bats are considered “unclean” in European society.
- In southern Nigeria, bats are linked with sorcery.
- Large, human-eating bats are found in Hawaiian legends, and there is even a legend of an eight-eyed bat.

There is even a term for the irrational fear of bats — Chiroptophobia. All these myths and irrational fears are a significant impediment to bat conservation worldwide.

However, the world over, bats find unusual uses. In Bolivia, live bats are sold for therapeutic purposes. Epilepsy is thought to be treated by drinking the blood of bats. According to a 2010 survey, 3,000 bats were sold in four Bolivian cities’ markets each month. Seba’s short-tailed bats, mouse-eared bats, and common vampire bats are among the species on sale at these markets. Night blindness is said to be treated with bat excrement (guano) in traditional Chinese medicine.

The Indian flying fox is thought to have numerous medicinal properties. Its fat, according to some, is a treatment for rheumatism. To relieve asthma and chest pain, tribes in India’s Attappadi region consume the fried flesh of the Indian flying fox. Treatments for “fever with shivering” are prepared with hair from Indian flying foxes by healers of the Kanda Tribe of Bangladesh.

Oceania, Australia, Southeast Asia, China, and West and Central Africa are just a few of the places where bats are eaten for their meat. At least 167 bat species, or roughly 13% of all bat species, are hunted around the world. Even worse has been the destruction and vandalism of bats and their ecosystem. There are instances of caverns and abandoned mines where bats rest or hibernate being dynamited to kill them. Besides,

unnecessary illumination in urban areas and light pollution impede bat settlements.

But bats are helpful too. Let’s look at some contributions that bats have been making to humankind.

Fertiliser

Horticulturalists and plant enthusiasts throughout the world utilise bat guano as a natural fertiliser. In addition to benefiting plants, bat guano is a valuable organic fertiliser. Many gardeners house the bats to obtain organic fertiliser. Carbon, nitrogen, sulphur, and phosphorus are just a few of the nutrients found in bat guano.

Pest Management

Bats can consume up to 3,000 insects each night and are increasingly being used as natural pest management. Bats can naturally reduce the number of mosquitoes and other pests in populations at high risk of illnesses such as Zika, West Nile virus, and St Louis encephalitis, without the use of pesticides. Bats also help farmers with pest control by reducing the amount of bugs that devour and damage their crops.

Farmers, for their part, are protective of bats and frequently install bat homes near their crop fields to attract and shelter bats for natural pest management. Bats can aid in the control of bugs, moths, and leafhoppers. Many insects can hear bats from up to 100 feet away and will avoid locations where bats are present. Some people construct bat cages and place them on their homes or barns to keep away insects. According to a study, bats consume enough bugs to save the maize sector in the United States more than \$1 billion per year in crop loss and pesticide expenditures. Worldwide, eating of insect pests by bats saves more than \$3 billion each year in agricultural productivity.

Principal Pollinators

Bats adore the delicious nectar found within flowers. They take up pollen and transfer it to other blooms as they sip and migrate from blossom to flower. Tropical bats play an important role in the rainforest, pollinating flowers and dispersing seeds for a variety of plants and shrubs. Bats also pollinate agricultural plants such as bananas, mangoes, cashews, dates, avocados, peaches, cloves, and figs (to mention a few).



Skeleton of Indian pipistrelle (*Pteropus giganteus*) at Museum of Zoological Survey of India, northern regional office, Dehradun

Many ecosystems would perish if bats weren't pollinating and distributing seeds. The giant baobab tree is known as the "African Tree of Life" because it is so critical to the survival of so many species in the East African savannah. The baobab is nearly entirely dependent on bats for pollination. Baobabs would perish if bats were not there, resulting in the extinction of one of our planet's most spectacular and significant ecosystems. Recent study on neotropical bats in Central and South American forests reveals that even very tiny bats may play an essential role in seed distribution.

Human Helpers

Vampire bat saliva has been studied by scientists. It includes an anticoagulant (a substance that stops blood clots from forming) that might be utilised to treat human heart sufferers in the near future. Scientists are also investigating bats' resilience to DNA damage and malaria parasites in the goal of educating more about human DNA damage and how to treat malaria more effectively. Bats also contribute to the creation of about 80 medications by pollinating medicinal plants. The study of their ability of echolocation has been used to develop technology to assist the blind.

Conserving Bats

There are several species of animals, such as birds of prey, snakes, badgers, raccoons, and wild cats that hunt or scavenge for bats. Increasing the number of bats in an area, especially in light of the fact that some bat populations are afflicted with white-noise syndrome, contributes to the maintenance of a



Bat sculptured on a jewelry made up of Jade usually worn by Chinese people (right top), Boxwood Ruyi with five bats and the "Longevity" character (Qing Dynasty 1644-1911) (right bottom), embroidery of bats and dragons on a piece of Chinese decorative silk cloth (left).

healthy natural ecosystem by reducing the number of pesky insects and ensuring that animals at the top of the food chain have enough to eat.

Bats are susceptible to extinction if the ecosystem in which they live is disturbed in any way, particularly by activities such as building, pollution, and deforestation, to mention just a few examples. There are approximately 30 species of bats that are protected under the Endangered Species Act.

About 21 species of bat are critically endangered (face imminent risk of extinction), 83 species are endangered, 109 species are vulnerable, while 242 bat species are "data deficient" — an indicator that more conservation attention is necessary for these species.

Some reasons for their decline include the ongoing obliteration of natural habitats, hunting and killing for sport and food, the growing use of wind turbine energy, and above all the spread of harmful and baseless myths about bats that hampers conservation efforts.

The bat family as a whole is one of the least studied families of mammals in India. For conservation efforts to work, it is important to understand the basics of ecology, distribution, habitats, and other behaviours (ethology) of bats.

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