



Chiroptera Conservation and Information Network of South Asia

BATS DON'T CAUSE OR SPREAD COVID-19

The unfounded fear of bats stems from the initial news surrounding the COVID-19 outbreak where bats have been portrayed as a potential source of coronavirus (SARS-CoV-2) that has infected human beings (Wu et al. 2020; Zhou et al. 2020). Bats are the victims of misinformation; they provide greater benefits to the ecosystem and humanity than harm (Molur et al. 2002).

All forms of media are flooded with disconcerting news about the culling of bats in different parts of the world in an attempt to prevent the spread of the novel coronavirus disease (COVID-19). Members of the society, various communities, and governmental authorities are concerned about the possible link between COVID-19 and bats, and are raising many queries to authorities regarding the same.

Conservation scientists and bat biologists have taken up the responsibility to dispel myths and create awareness about how wrong and unscientific it is to blame bats for COVID-19 outbreak and its spread. Undoubtedly, the spread of the COVID-19 pandemic needs to be checked, and it can be, only by breaking the chain of human-to-human transmission (Chan et al. 2020; Liu et al. 2020). It is crucial to have a long-term plan to curtail the outbreak of such diseases by stopping certain human practices, the consumption of wild animals, and the widespread destruction of natural habitats ensuring prevention of such terrible events in the future.

The recent reporting of the discovery of the Bat Coronavirus (BatCoV) in two species of fruit bats in India from Kerala, Tamil Nadu, Puducherry, and Himachal Pradesh (Yadav et al. 2020), and one species

of fruit bat from Sri Lanka (Kudagammana et al. 2018) has added to the panic. These scientific findings are the outcome of the virus surveillance studies that help us understand the distribution of potential zoonotic viruses in wild animals. The crossing over of the virus species from animals to humans is through a process of mutation within the virus that makes them adapted to humans. This process is relatively uncommon and far between.

Following numerous enquiries on the subject concerned and the unprecedented increase in the ill will against bats, we share some facts regarding bats and COVID-19 to mitigate the harm to bats.

- **Bats do not spread COVID-19; it is being transmitted from humans to other humans.**

[SARS-CoV-2 virus strain of SARS-CoV species is very different from BatCoV species found in bats (Chan et al. 2020; Forster et al. 2020).]

- **There is no evidence that bats directly infected humans with COVID-19 in the first place.**

[Although, the SARS-CoV-2 is genetically related to the BatCoVs, and belong to the same genus Betacoronavirus, they are different (Zhang et al. 2020a). The genetic similarity between BatCov and SARS-CoV-2 ranges only 80–96% (Hu et al. 2018). For a better perspective, humans and chimpanzees are 98% similar genetically].

- **Scientific investigations are pointing to a chain of events that may have involved bats but most likely only through an intermediate animal.**

[SARS-CoV-2 is closely related to BatCoV and Pangolin-CoV (80–96% and 91% similarity), initial

studies on the receptor-binding domain points that the pangolin-CoV has greater pathogenic potential (Kristian et al. 2020; Zhang et al. 2020b).].

Here are some interesting facts about bats

- There are 1,401 bat species in the world (Wilson & Mittermeier 2019) of which 142 species occur in South Asia and 128 species occur in India (Srinivasulu et al. 2020).

- Many of these bat species have adapted to urban environments, living in gardens, urban parks, and even roosting around our homes, without posing a threat to their human neighbours (Voigt & Kingston 2016).

[Around 75% of the bat species diversity is known from human-dominated or human-influenced landscapes.].

- Bats and human beings have coexisted for hundreds of thousands of years.

- Bats provide enormous benefits including pollination, seed dispersal, and pest control (Boyles et al. 2011; Kunz et al. 2011; Maas et al. 2015) worth billions of dollars annually.

- Many bat species are in trouble and need our help to survive.

[Threats to bats include direct persecution, change in quality and quantity of habitats, pollution, the decline in food resources, excessive use of pesticides and pest control activities.].

- Two bat species are protected by the Indian Wildlife (Protection) Act.

[Salim Ali's Fruit Bat, a southern Western Ghats endemic species occurring in Kerala and Tamil Nadu, and Wroughton's Free-tailed Bat known only from the Barapede Cave in Karnataka and the Siju Cave in Meghalaya.].

- Eight species are threatened with extinction in South Asia as per the IUCN Red List.

[It includes one Critically Endangered, three Endangered, and four Vulnerable species.].

Bats are facing existential problems due to the increased impacts of human-induced changes in natural habitats. They are also threatened due to superstitions that does not place bats in the goodwill of humanity. With so much negativity attached to them, it is easier for us to harm and endanger bat populations and cause irreversible damage to already diminishing populations of these wonderful animals. Killing bats will not stop the spread of COVID-19, but would adversely affect the conservation status of bat populations, and all the benefits they provide to us like control of mosquito-borne diseases such as dengue, chikengunya, malaria, etc., pollination, and forest regeneration to combat the climate crisis!

We have to learn from our experience and not take any hasty decisions that will be more damaging to humanity in the long term. Wild animals are natural reservoirs, and some species act as safety barriers for many zoonotic diseases that have the potential of becoming pandemics in very little time.

The present pandemic of COVID-19 is nature's warning to humanity.

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