

Bats, Geckos, and the Eastern Ghats: Taxonomy and Conservation Insights from the Srinivasulus

On the 24 and 25 of December, 2024 the fellows had the opportunity of interacting with the Batman and Batwoman of India—Dr C. Srinivasulu and Dr Bhargavi Srinivasulu—from Osmania University, Hyderabad. Being wildlife biologists and taxonomists, they have worked on birds, bats, reptiles, and fishes of southern India. The two-day interactive session began with an engaging introduction to bats and their taxonomy. Srinivasulu began by introducing the order Chiroptera, derived from the Greek words chiro (hand) and ptera (wing), highlighting the bats' extraordinary ability to achieve true flight, a rarity among mammals. He emphasized the critical role of taxonomy in conservation and highlighted the distribution of bats in India, particularly fruit bats along the eastern coast from Sri Lanka to Bangladesh. He explained their behaviour of hanging upside down, noting that it provides an ideal position during take-off for flying.

He shared fascinating details about megabats, explaining how they detect ripening fruits from as far as 30–40 kilometres and adapt to food scarcity in summer by consuming leaves. However, their echolocation abilities are not as developed as those of insectivorous bats, which rely on their advanced echolocation to hunt insects and other prey, including mice, frogs, lizards, small birds, and even other bats. He also described their unique reproductive biology, where females give birth to a single pup per breeding cycle, often carrying the pup during feeding or leaving it in maternity caves. Upon returning from foraging, mothers regurgitate food to feed their young.

The session also covered the intricacies of bat echolocation, with Srinivasulu explaining how bats use distinct call patterns for prey detection and social communication. He further emphasized the critical

threats bats face, such as habitat loss, deforestation, agricultural expansion, and the widespread use of pesticides, which reduce insect populations. Roost disturbance, hunting for medicinal purposes, and local sustenance also contribute to their decline. Through this insightful session, he highlighted the ecological significance of bats and the urgent need for their conservation. His knowledge and passion for these remarkable mammals left us inspired and equipped to contribute to their protection.

The discussion also involved zoonotic diseases, particularly the Nipah virus outbreaks, which have been reported only in Kerala and Bangladesh. Srinivasulu explained that this could result from a combination of factors, including differences in medical systems, population density, ecosystem peculiarities, genetic variations, and human



activities. This session emphasized the need for a multidisciplinary approach to understanding and addressing zoonotic diseases.

Bhargavi then presented the inspiring conservation story of the Kolar Leaf-Nosed Bat, a species endemic to a single cave in Karnataka. Over a decade, their efforts transformed the site into a conservation reserve. She narrated the challenges they faced, including initial community resistance, and how engagement and education fostered local support. Their journey highlighted how taxonomic discoveries can lead to significant conservation milestones, inspiring participants to recognize the power of perseverance in conservation efforts.

Next day, the morning session was dedicated to reptilian taxonomy, focusing on the geckos of the Eastern Ghats. Srinivasulu illuminated the remarkable endemism and biodiversity of the Eastern Ghats, which are far less studied compared to the Western Ghats. The session broadened our perspective on the ecological significance of the Eastern Ghats and the need for more comprehensive studies in this region. In the afternoon, their son Adithya Srinivasulu joined online to introduce the topic of predictive modelling in conservation. His work, part of his PhD research, explored how climate change and anthropogenic factors would affect the distribution of 110 bat species across South Asia by 2050 and 2070 using 19 climatic variables. His findings revealed that while some species remained unaffected, others faced severe impacts, challenging the generalized view that all species are equally vulnerable to climate change.



©Diya Bannerjee

Adithya's presentation also emphasized the importance of utilizing available data efficiently and focusing conservation efforts on species-level studies to identify vulnerabilities and set priorities. This sparked a broader discussion on the balance between discovering new species and conserving known ones, urging researchers to take taxonomy to the next level by integrating it into conservation strategies.

The two-day session was a thought-provoking blend of taxonomy, conservation, and climate change discussions. It provided us with a deeper understanding of the complexities of conservation and the importance of interdisciplinary approaches. By linking taxonomy to conservation, exploring under-researched regions, and leveraging predictive modelling, the sessions underscored the need for innovative and informed strategies to address pressing conservation challenges.

Diya Banerjee & Sidharthan, RHATC Fellow 2024–25, Zoo Outreach Organisation, Coimbatore, Tamil Nadu, India.