



First decade-long study on Hyderabad's snake encounters

Hyderabad, 6th May, 2026: The first long-term study on urban snake ecology, by a team of researchers in CSIR-Centre for Cellular and Molecular Biology (CCMB) in collaboration with Friends of Snakes Society (FOS) in Hyderabad, Telangana, has been published in *Global Ecology and Conservation*. The [study](#) analysed 55,467 snake rescues between 2013 and 2022 to show how snakes persist and adapt within rapidly urbanising environments of Hyderabad. These findings contribute significantly to our understanding of the ecology of snakes in densely populated areas and predicts future human–snake interactions.



Snake rescue by Friends of Snakes Society

Urbanization and local climate impacting snake encounters

The study found an annual increase of 8-10% in snake rescues over the ten-year period; this trend reflects a combination of urban expansion, land-use change, and improved reporting and rescue efforts in the city. It also highlights that human–snake encounters are structured and predictable, rather than random events.

Notably, 54% of recorded rescues involved venomous species, underscoring the significant public health relevance. Two species, the spectacled cobra (*Naja naja*) and the Indian rat snake (*Ptyas mucosa*), accounted for 76% of all rescues. These snakes appear to be particularly well-adapted to densely populated urban environments, indicating their ecological flexibility.

The study identified distinct clusters of snake encounters in Hyderabad, with 232 hotspots that accounts for 6.9% of the city. These hotspots were predominantly rapidly developing peripheral zones, indicating that urban expansion and habitat modification are key drivers of human–snake interactions.

The study further demonstrated that snake activity varies throughout the day among the species. While some species are predominantly active during the day, some at night, others are active throughout the day. These reflect the intrinsic ecological behaviour of snakes as well as the influence of human activity on snake lives.

“This study provides the first empirical evidence for synanthropization, wherein snakes showed adaptations to human-modified environments. Snakes use urban green spaces, drainage networks, and prey availability, supporting their persistence within the cityscape. Forecasts of snake rescue suggests an annual increase of 8–12%. These projections highlight the need to scale up rescue infrastructure and capacity in the coming years,” said Avinash Visvanathan, lead from FOS.

The study also noted clear seasonal trends in snake encounters; they peak during the monsoon period (July to November) and reach a maximum in October. These temporal patterns align closely with the biological processes of snakes such as mating, birth of young snakes, and increased activity under favourable environmental conditions. Local climatic conditions, particularly temperature and rainfall significantly influenced snake encounters. The study noted increased activity of snakes in warmer conditions, whereas prolonged rainfall period temporarily reduced their activity.

Importance of long-term monitoring

Beyond conflict mitigation, the study underscores the value of rescue datasets as robust ecological resources. Long-term, systematically collected records offer a unique opportunity to examine wildlife behaviour across spatial and temporal scales, particularly in urban settings where traditional ecological monitoring can be challenging.

“Within urban ecosystems, snakes serve as important mesopredators; though at a rank lower than apex predators, they regulate rodent and small vertebrate populations. Species such as the spectacled cobra and the Indian rat snake play a critical ecological role, and disruptions to their populations may lead to unintended consequences, including possible surge in urban rodent populations. The findings highlight the importance of standardised and sustained rescue operations, matched with public awareness campaigns. They also underscore the need to integrate ecological considerations into urban planning, including the maintenance of green spaces and habitat connectivity, to support both human safety and biodiversity conservation,” commented Dr Karthikeyan Vasudevan, the lead scientist at CSIR-CCMB.

Overall, the study demonstrates the value of long-term datasets in advancing urban ecological research. It establishes a strong scientific foundation for understanding human–snake interactions and offers actionable insights for coexistence in rapidly expanding cities.