Telangana Biodiversity

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A Newsletter of Centre for Biodiversity and Conservation Studies, Osmania University

Editorial

At a time when environmental crises dominate headlines, the need for nature awareness and education has never been more urgent. For much of human history, ancient civilizations lived with a deep sensitivity to the natural world, understanding that survival depended on harmony with nature. Nature was not something "out there". It was woven into daily life, culture, and belief systems. In contrast, modern society has grown increasingly disconnected from natural systems, often engaging with them only when disasters strike or as a getaway from the usual life. This mostly stems from the exclusion of the natural world from our modern societal systems. This creates the urgent need for nature awareness and eduaction. Nature education today must go beyond facts and figures. It must rebuild emotional connection, curiosity, and responsibility. When people understand ecosystems, species, and natural processes, conservation becomes instinctive rather than imposed. Reconnecting ourselves with nature is about recognizing humans as a part of Nature and as stewards of its heritage. Nature literacy should become as fundamental as any other form of education, so that concern, reverence and love for the natural world become an integral part of how we function. Relearning how to see, value, and coexist with the natural world may be one of the most important acts of conservation in our time. Conservation is not born from fear, but from connection. We protect what we understand. We defend what we hold dear.

Contents

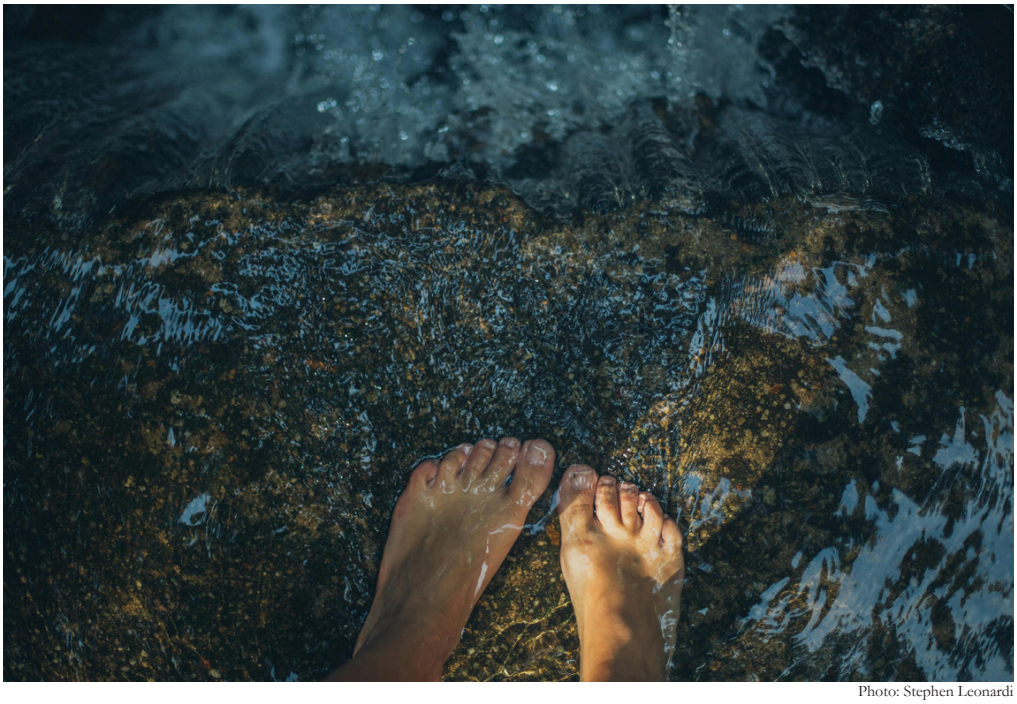

Photo: Stephen Leonardi

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Briefly

Mammal diversity is much higher than we think!

The latest version of the Mammal Diversity Database, published in 2025, now recognizes 6,759 living and recently extinct mammal species, a net increase of over 1,300 species in just two decades. Much of this expansion comes not from brand new discoveries alone, but from taxonomic re-evaluations and improved research methods. Groups like rodents, bats, shrews and moles, and primates show especially high growth in recognized diversity. This revelation carries much importance for conservation and ecology. First, it shows how limited our knowledge remains. Many mammals, especially small mammals have remained hidden either because of their cryptic nature or because of conservation plans and policy negligence. Second, it emphasizes why field explorations and systematic surveys are vital. Without continued efforts, countless species may remain undocumented. Finally, the update also highlights that a considerable fraction falls under categories like "Data Deficient" or "Not Evaluated" on the IUCN RedList, emphasizing the urgent need for targeted species-specific studies and threat assessments.

Photo: David Dixon

Special Feature

Pench Tiger Reserve

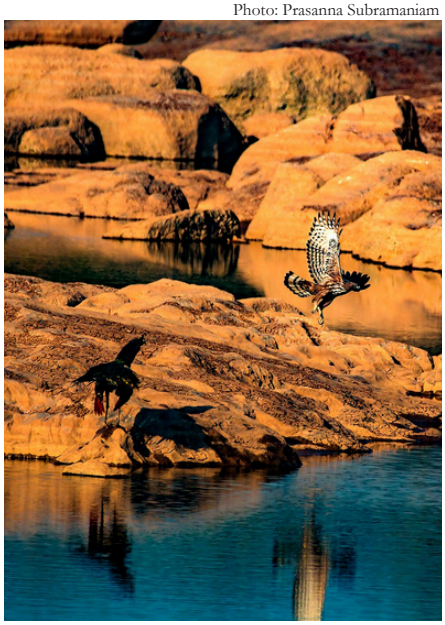
Pench Tiger Reserve, located and shared between the states of Madhya Pradesh and Maharashtra, is a central-Indian stronghold of tropical dry deciduous forests, with beautiful wetlands and meadows. Nestled in the southern Satpura range, PTR is one of the most visited tiger reserves in the country. The Madhya Pradesh unit comprises roughly 758 km² of protected area, while the Maharashtra side adds a comparable protected landscape, together forming a large transboundary conservation landscape having good connectivity with Kanha, Tdoba-Andheri and Bor protected areas. PTR's Pench River and the Seoni hills are famously known for inspiring Rudyard Kipling's Jungle Book.

The reserve's vegetation is typical of the central Indian highlands which includes mixed teak, sal and mixed deciduous forests, interspersed with grassy meadows and the wetland habitats along the Pench River. These habitats sustain a rich assemblage of wildlife. PTR harbours around a 1000 species of plants. Such a good floral diversity in turn supports a diversity of 170 butterfly species. PTR is also home to around 73 species of mammals, 310 species of birds, and 53 species of reptiles. Among the charismatic fauna of the Pench Tiger Reserve are the Bengal Tiger, Leopard, Wild Dog, Indian Wolf, Golden Jackal, Jungle Cat, and Sloth Bear. A host of typical Indian herbivores are also seen in good numbers, namely – Spotted Deer, Sambar, Nilgai, Four-horned Antelope, Harsinga, Gaur, and Wild Boar. Other mammals spotted here are the Honey Badger and the Civet.

Pench's conservation story is one of measurable success. Included under Project Tiger in 1992, the reserve has seen substantial improvements in protection, habitat management and prey recovery andnow supports a successful tiger population. These efforts contributed to a

Photo: Drashokk

Photo: Prasanna Subramaniam



significant rise in tiger numbers. PTR had reported a rise from a few dozen tigers in the early 2000s to numbers approaching current estimates in recent cycles and the landscape was recognised among reserves that doubled their tiger population, earning national and international acknowledgement. Such gains reflect sustained efforts, scientific monitoring, and habitat and prey management with the help the forest departments, wildlife NGOs and local communities.

Major initiatives and ongoing work in Pench include: strengthened anti-poaching and protection regimes, systematic camera-trap monitoring, landscape level planning to maintain connectivity with neighbouring forests and community-based eco-development and livelihood programs to reduce dependence on forest resources. Pench is also part of broader Central Indian landscape efforts that support tiger dispersal.

Pench goes beyond being a photogenic landscape. It is a functional ecological unit with its river systems, seasonal floodplains and forest mosaics sustaining prey populations, regulating local hydrology and providing ecosystem services for local communities. Its mix of accessible terrain and intact forest makes it an important site for long-term ecological research, conservation capacity building and public outreach about India's wildlife heritage.

Threatened Taxa

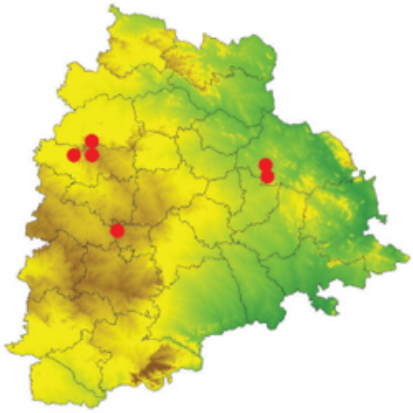
Plant - *Gymnema sylvestre* (Retz.) Schult.

Photo: FarEnd2018

Taxonomy Order Gentianales; Family Apocynaceae.
Geographic Range Widespread; found in tropical and southern Africa, and South and Southeast Asia. It is distributed throughout India.
Distribution Occasional; found in Jayashankar Bhupalapalli, Kamareddy, Nizamabad, and Sangareddy districts.
Population Nothing is known about its population status or trends.
Habitat & Ecology Large woody climber found on the fringes of scrublands and dry deciduous forests.
Major Threats Threatened due to habitat fragmentation and overcollection for medicinal purposes.
Use & Trade The species is in trade; the leaf is collected as a treatment for diabetes.
Conservation Measures No species-specific conservation measures are in place..

Remarks
This species is found in scrub jungles and forested areas. It does not occur in any protected areas. It is threatened by habitat fragmentation and over-harvesting for medicinal purposes. The estimated number of localities is 6; the estimated extent of occurrence (EOO) in Telangana State is <20,000 km2, and the area of occupancy (AOO) is <100 km2. There is an inferred continuing decline in the area, extent, and quality of suitable habitat. At the global level, this species has not been assessed. In Telangana State, this species is assessed as Vulnerable, with the criteria A2d+B1abb(iii,iv)+2ab(iii,iv).

Distribution in Telangana State



Animal - *Numenius arquata* (Linnaeus, 1758)

Photo: Ken Billington

Taxonomy Class Aves; Order Charadriiformes; Family Scolopacidae.
Geographic Range Widely distributed in tropics and temperate regions.
State Distribution Occasional winter migrant; known from Medchal-Malkajgiri, Rangareddy, Medak and Kamareddy districts.
Population Nothing is known about the population status or trends.
Habitat & Ecology Inhabits in freshwater habitats, lake shores, pools, flooded and dry grassy areas.
Major Threats Threatened due to habitat loss caused by draining of wetlands, expansion of agriculture.
Use & Trade This species is not in trade.
Conservation Measures No known species specific conservation measures are in place for this species.

Remarks
This taxon is found in freshwater habitats, lake shores, pools, flooded and dry grassy areas. It is threatened due to habitat loss caused by draining of wetlands and expansion of agriculture. It is known from four locations in Telangana State. There is an inferred continuing decline in the area, extent, and quality of suitable habitat. At the global level, this taxon has been assessed as Near Threatened. In Telangana State, this species is assessed as Vulnerable, with the criteria B1ab(iii)+2ab (iii).

Distribution in Telangana State

Pioneers in Conservation

Padma Vibhushan Sunderlal Bahuguna

Photo: President's Secretariat

Sunderlal Bahuguna (1927–2021) stands as one of India's most influential environmental thinkers—an activist who transformed local struggles into global conversations on ecological justice. Born in Tehri Garhwal, his formative experiences shaped his belief that conservation was rooted in human responsibility and restraint.

Bahuguna became the central force behind the Chipko Movement of the 1970s, where villagers, mostly women protected forests by embracing trees in non-violent resistance. Through this movement, he drew national and international attention to the ecological importance of Himalayan forests.

A defining chapter of his life was his decades-long opposition to the Tehri Hydroelectric Project. Bahuguna warned that large dams in geologically young mountains would create severe seismic and ecological risks while displacing thousands. His numerous fasts, including a 45-day hunger strike, and refusing the Padma Shri in 1981 brought unprecedented attention to issues of dam safety, river ecology, and climate vulnerability, issues that remain relevant today as India grapples with frequent Himalayan landslides and flash floods.

He was later awarded the Padma Vibhushan in 2009, recognizing his unmatched contribution to environmental conservation and grassroots ecological awareness.

Even after his passing in 2021, Sunderlal Bahuguna's legacy continues to guide conservationists. His life reminds us that development must respect ecological limits and to question the concept of "progress" defined by the modern world.

Environment Education

The Aravallis - an ancient witness of Earth's history

The Aravalli Hill Range is one of the oldest mountain systems in the world, with origins dating back nearly 1.5 - 2.5 billion years, making it older than the Himalayas. Stretching approximately 670 km from Gujarat through Rajasthan to Haryana and Delhi, the Aravallis were formed through ancient tectonic activity and prolonged geological processes. Over millions of years, erosion has worn these once-lofty mountains into low, rugged hills, exposed rocks, and isolated ridges that still bear witness to Earth's deep evolutionary history. The Aravallis play a critical role as a natural barrier influencing climate, rainfall patterns, and desertification. They help limit the eastward expansion of the Thar Desert and support a mosaic of ecosystems, including dry deciduous forests, scrublands, grasslands, and rocky outcrops. These habitats sustain diverse flora and fauna, many of which are specially adapted to arid and semi-arid conditions. The range is also vital for groundwater recharge, acting as a catchment for rivers such as the Luni, Sabarmati, and seasonal streams that support human settlements and wildlife. Despite their ecological and evolutionary importance, the Aravalli hills face severe threats from mining and unregulated development that threaten to erase the very existence of this magnificent hill range. The range is a living geological archive that is essential for the very maintenance of ecological stability and resilience for now and the future.

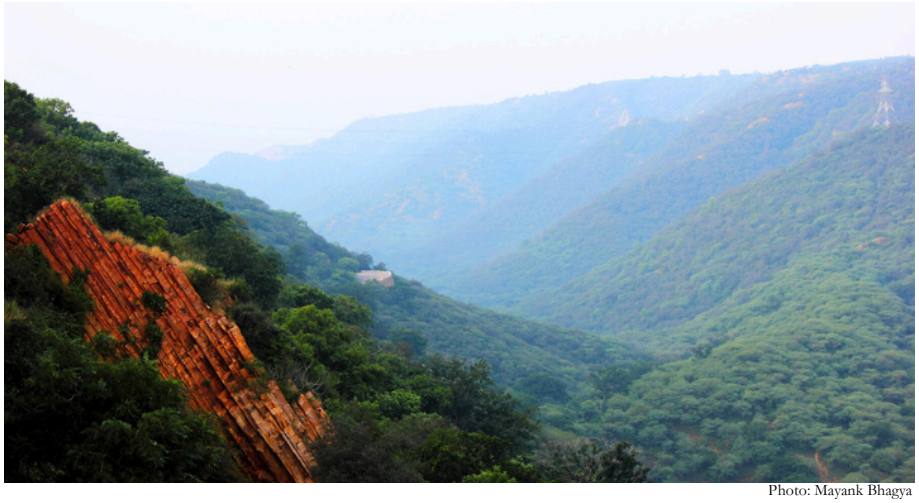


Photo: Mayank Bhagya

Nature for Kids

Coral Reefs - A marine world in crisis

Photo: Harvinder Chandigarh

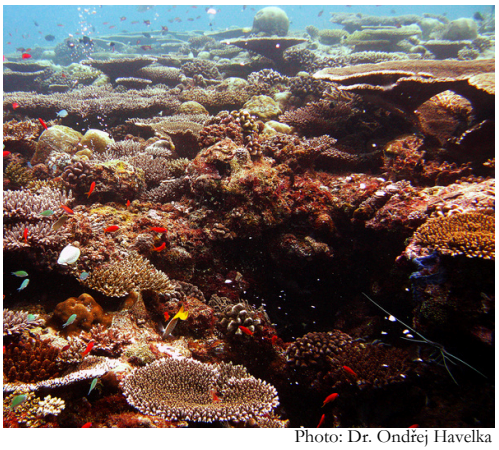


Photo: Dr. Ondřej Havelka

Coral reefs are the richest ecosystems of the sea, teeming with life. In India coral reef ecosystems are found in places like the Lakshadweep Islands, the Gulf of Mannar, the Andaman & Nicobar Islands, and the Gulf of Kutch. These reefs are made up of many coral species, including hard corals like *Porites, Favia, Favites, Goniastrea, and Platygyra*. The reefs of the the Andaman & Nicobar Islands have the highest species diversity among all Indian coral reef systems, with over 200 coral species being recorded, along with sea turtles, dolphins, and reef fish. What is even more amazing is that each of these areas have coral reefs of a characteristic structure!

Corals are a bizzare combination of animal and plant life. Corals are made up of polyps (an animal) that contain algae inside them. These polyps then secrete calcium carbonate around themselves to form a hard outer covering or exoskeleton. Coral reefs are critical for the health of the marine ecosystem. Several fish and marine invertebrates find food and shelter in coral reefs, with some baby fish sheltering here for their initial development.

However, India's corals similar to those around the world are under serious threat. In Lakshadweep, prolonged marine heatwaves have caused record-high coral bleaching, meaning that the calcium carbonate layer is disappearing. We should not be surprised that the main reason for this is rapidly increasing ocean temperatures due to global warming and climate change.

This isn't just a problem for corals because bleaching weakens the entire marine ecosystem. When corals lose their colour, they also lose their symbiotic algae, which weakens them and affects the fish and other animals that depend on them.

Protecting India's coral reefs means fighting climate change, regulating fishing, and keeping our oceans clean. While some coral reefs are surviving and adapting to these changes, their conservation and protection should never stop!

Our Biodiversity

Spiders of Telangana State

Photo: Wildlife Biology & Taxonomy Lab, Osmania University

Photo: B.G. Nisha

Spiders are one of the most diverse groups of animals on Earth, belonging to the order Araneae within the class Arachnida, and in India alone nearly 2,000 species across more than 500 genera have been described so far. In Telangana, systematic surveys have recorded 121 species of spiders within 19 out of the state's 33 districts. These species belong to 71 genera and 21 families, highlighting substantial arachnid diversity even in a region that is comparatively understudied.

The highest number of species in the state has been documented from Hyderabad district (63 species), followed by Nalgonda, Medak, Mahbubnagar, and Ranga Reddy districts. The most frequently recorded spider families include Araneidae (orb-weavers), Lycosidae (wolf spiders), Salticidae (jumping spiders), Oxyopidae (lynx spiders) and Tetragnathidae (long-jawed orb-weavers), each adapted to different microhabitats from tree canopies and grasslands to agricultural fields and human dwellings. Two endemic species are also found here, including *Thomisus telanganaensis*, endemic to Telangana and *Tenkana jayamangalis*, endemic to South India. One particular interesting record from the state is the black widow spider *Latrodectus hasselti*, reported for the first time from Telangana.

Spiders play a crucial ecological role as predators of insects and other arthropods, helping regulate populations and contributing to natural biological control in agricultural and natural ecosystems alike. Their diverse hunting strategies, from web-building orb weavers that trap flying insects to active hunters like wolf and jumping spiders reflect a great deal of ecological specialization. Because spiders respond rapidly to changes in habitat structure and prey availability, they are also useful bioindicators for habitat quality and environmental change.

Despite this richness, many parts of Telangana have not yet been thoroughly surveyed, and significant gaps remain in our knowledge. Continued documentation and research are essential to fully understand and document the spider fauna of the state.

Feature - Flora

Palmyra palm - *Borassus flabellifer* L.

Classification

Kingdom: Plantae
Division: Streptophyta
Class: Equisetopsida
Order: Arecales
Family: Arecaceae
Genus: *Borassus*
Species: *flabellifer*
Authority: L.

Borassus flabellifer is commonly known as the Palmyra palm or **తాటి చెట్టు** (Tati Chettu) in Telugu. It is a tall, long-lived palm species native to South and Southeast Asia. In India, it is widely distributed across the peninsular regions, thriving in dry, open landscapes, coastal plains, and semi-arid regions. The Palmyra palm can grow up to 20–30 metres tall and is easily recognized by its large, fan-shaped (flabellate) leaves borne on stout petioles. Flowering usually takes place during the warmer months, and the fruits mature in summer. The fruits are large, round, and black when ripe. It is highly drought-tolerant and well adapted to harsh climatic conditions, making it valuable in such landscapes. The palm's sap is traditionally tapped to produce toddy, palm sugar, jaggery, and palm wine, while the leaves are used for thatching, mats, and baskets. In Telangana, the Palmyra palm is deeply embedded in rural culture, cuisines and traditional knowledge systems.

Photo: P. Jeganathan

Feature - Fauna

Balloon Frog - *Uperodon taprobanicus* (Parker, 1934)

Classification

Kingdom: Animalia
Phylum: Chordata
Class: Amphibia
Order: Anura
Family: Microhylidae
Genus: *Uperodon*
Species: *taprobanicus*
Authority: (Cantor, 1836)

Uperodon taprobanicus (The Balloon Frog / Indian Painted Frog) is a fossorial (burrowing) amphibian belonging to the family Microhylidae. It is widely distributed across the Indian subcontinent, including India, Sri Lanka, Nepal, Bangladesh, and parts of Pakistan, and is commonly recorded from peninsular India. In Telugu it is known as "*Gundra Kappa*" or "*Burrakappa*", referring to its rounded body shape. This species is easily recognized by its globular body, and striking colour pattern, which is usually a dark brown or black dorsum marked with yellow, orange, or cream patches. It spends most of the year underground, emerging mainly during the southwest monsoon for breeding. Breeding is explosive and closely tied to heavy rains, with males producing loud, resonant calls. Eggs are laid in water, and tadpoles develop rapidly to take advantage of short-lived aquatic habitats.

Photo: Rison Thumboor

Events

Short Course on Wildlife Techniques at CBCS

Photo: Nanda Kumar

Staring from October, through November and December, 2025, CBCS conducted the first set of classes as part of a short course on Wildlife Study Techniques with the MSc students from the Dept of Zoology, Osmania University. The session was led by Prof. Chelmala Srinivasulu and Dr. Aditya Srinivasulu, who introduced students to fundamental ecological survey methods, including quadrat sampling, point counts, and line transects, habitat mapping in QGIS, and population sampling methods. The classroom-based discussions and demonstrations were complemented by outdoor sessions, allowing students to gain hands-on exposure. With both classroom and outdoor teaching sessions, the students participated enthusiastically and with much interest, making for a great learning experience!

News

CITES Recommendation Withdrawal Raises Questions

Photo: The Hindu

The Secretariat of the CITES has withdrawn its earlier recommendation to suspend India's import of Appendix I (endangered) species after the proposal failed to gain sufficient support. The recommendation had followed a report that flagged inconsistencies in India's due-diligence mechanisms and raised concerns in relation to large-scale imports by Vantara. Although the withdrawal reflects political consensus rather than confirmation that compliance issues have been resolved, observers and experts have emphasized that critical questions regarding origin, documentation, and transfer conditions of endangered species remain unanswered. The development underscores the urgent need for greater transparency, accountability, strict adherence to international wildlife trade regulations, and upholding sound scientific expertise, especially in the case of business corporation ventures.

Signing Off

Rediscovery of the Turkestan Long-eared Bat

The rediscovery of the Turkestan long-eared bat *(Plecotus turkmenicus)* in Karakum Desert, a species not recorded for nearly fifty years, marks a significant milestone for wildlife science. The species was long considered extinct due to ecological change as no sightings were recorded since the 1970s. The team led by the Museum für Naturkunde Berlin, undertook a targeted exploration in Turkmenistan, focusing on historical sites where the bat had once been recorded, which subsequently proved fruitful. This finding underscores how systematic field investigations remain indispensable in biodiversity and wildlife studies. The rediscovery demonstrates the critical importance of dedicated exploration and sampling, robust field research, and continued investment in natural history studies. These are essential to accurately assess species distributions, persistence, and the potential impacts of rapid ecological change. Milestones such as this not only offer hope, but are also a call for urgent conservation action.

Photo: Christian Dietz

We hope you have enjoyed this issue... If you wish to share any information, please do not hesitate to contact us.

Centre for Biodiversity and Conservation Studies

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