

Telangana Biodiversity

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Editorial

Religious and cultural traditions often encourage compassion toward animals, including feeding birds or feral animals as acts of virtue. While rooted in empathy and spiritual intent, such practices in crowded urban environments must be approached with awareness and responsibility. Blindly following these rituals, such as feeding feral pigeons, monkeys, or stray dogs, can unintentionally cause significant harm to both human and ecological health. In densely populated cities, leftover food and the congregation of animals lead to unsanitary conditions. Feral animals become vectors for diseases like rabies, histoplasmosis, leptospirosis, and bird flu, among others. Feeding encourages unnatural population surges, which the environment cannot sustain. Overcrowding and food competition lead to aggressive behaviour, interspecies conflict, and increased human-animal encounters that pose risks, especially to children and the elderly. Moreover, overfed feral animals lose their instinct to forage naturally, disrupting ecological balance and often displacing native species. In urban ecosystems already under pressure, such unintended consequences strain civic infrastructure and public health systems. Faith need not conflict with reason. True compassion considers long-term welfare for both animals and humans. Religious acts must evolve with modern understanding of ecology and public health. It is time to replace blind rituals with informed, responsible actions that align faith with science and sustainability.



Photo: Balaji Srinivasan

Briefly

28th UN Climate Change Conference (COP28)

The 28th UN Climate Change Conference (COP28), held from November 30 to December 12, 2023 in Dubai, marked a significant turning point in global climate negotiations. For the first time in COP history, nations explicitly addressed fossil fuels in the final agreement, calling for "transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner." The conference established the operationalization of the Loss and Damage Fund with initial pledges exceeding \$700 million, providing financial support to vulnerable countries facing climate disaster impacts. The UAE Consensus, as the final agreement was called, also emphasized tripling renewable energy capacity and doubling energy efficiency improvements by 2030. COP28 saw the completion of the first Global Stocktake, which assessed collective progress toward Paris Agreement goals and highlighted the significant gap between current efforts and necessary action. The Stocktake emphasized the need for more ambitious national climate plans. Critics noted the significant presence of fossil fuel industry representatives at the conference and questioned whether commitments would translate into meaningful action.

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Ms. Vyshnavee Sneha

(Intern, Centre for Biodiversity and Conservation Studies, Osmania University)

Email

biodiversityclub@osmania.ac.in



Photo: Serine Ben Brahim

Special Feature

Kanha Shanti Vanam

Kanha Shanti Vanam, located approximately 50 kilometers from Hyderabad in Telangana, India, stands as a remarkable testament to successful ecological restoration and sustainable development. This sprawling 1,400-acre spiritual retreat and ecological conservation center was transformed from barren, degraded land into a thriving green sanctuary under the guidance of the Heartfulness Institute. When the Heartfulness Institute acquired this land in the early 2000s, it was largely an arid, rocky terrain with poor soil quality and minimal vegetation. Through systematic efforts, including soil restoration, water conservation, and strategic planting, the

organization transformed this degraded landscape into what is now recognized as one of the fastest-growing man-made forests in India.

Central to Kanha's ecological success has been its comprehensive water management system. The site features over 40 percolation tanks and check dams that capture rainwater, allowing it to recharge groundwater tables. This has dramatically raised the water table in the region, creating a sustainable water source for the diverse plant life and supporting the surrounding rural communities. Kanha Shanti Vanam has become a haven for biodiversity, hosting over 300,000 trees representing more than 400 species, rare

and endangered native plant varieties preserved through dedicated nurseries, a significant increase in local wildlife populations, including over 100 bird species, protected habitats for reptiles, small mammals, and various insects, and specialized butterfly parks and bee conservation areas. The center maintains extensive seed banks of indigenous plants, contributing to the preservation of regional genetic diversity and providing resources for future restoration projects. The ecological restoration approach at Kanha is scientifically grounded and innovative. It includes implementation of Miyawaki forest techniques that accelerate forest growth up to ten times faster than

Courtesy: Heartfulness Institute



Courtesy: Heartfulness Institute

conventional methods, use of biochar and other organic soil amendments to restore soil health, development of microhabitats tailored to specific species' needs, integration of traditional ecological knowledge with modern conservation science, and continuous ecological monitoring and adaptive management practices. Particularly noteworthy is Kanha's ambitious rainforest development project. Despite being in a semi-arid region, the center has successfully created microclimatic conditions that support rainforest species by establishing multi-canopy vegetation structures, creating humidity-retention zones, implementing specialized irrigation systems that mimic natural rainfall patterns, and introducing undergrowth plants that thrive in shaded, humid conditions.

Kanha Shanti Vanam operates as both a spiritual retreat and an ecological education center. It regularly conducts workshops on sustainable living, organic farming, and ecological restoration. Local communities are actively involved in conservation efforts, creating a model of participatory environmental stewardship. The center's Green Kanha initiative engages thousands of volunteers in tree planting, maintenance, and monitoring activities. Through its holistic approach to environmental regeneration—combining spiritual practice with scientific conservation—Kanha Shanti Vanam demonstrates how human intervention can reverse ecological degradation and create thriving, sustainable ecosystems that benefit both nature and surrounding communities.



Threatened Taxa

Plant - *Heterostemma deccanense* (Talb.) K. Swarupanandan & J.K. Mangaly



Photo: C. Sudhakar Reddy

Taxonomy Order Gentiniales; Family Apocyanaceae.

Geographic Range Endemic to India; known only from Maharashtra, Andhra Pradesh, Telangana State, and Kerala.

State Distribution Rare; found in Bhadradi Kothagudem, Medak, and Nagarkurnool districts.

Population Nothing is known about its population status or trends.

Habitat & Ecology Wiry climber, associated with large deep-forest trees.

Major Threats Threatened due to habitat loss and destruction, and collection for local medicinal use.

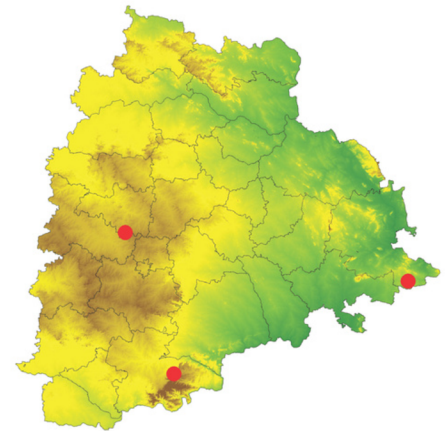
Use & Trade This species is not in trade, but is collected for local medicinal use.

Conservation Measures No species-specific conservation measures are in place. This species is reported from Amrabad Tiger Reserve.

Remarks

This species is found in forested areas. It occurs in Amrabad TR. It is threatened by habitat destruction, and overcollection for local medicine. The estimated number of localities is 3; 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 A2 d+B1ab(iii,iv)+2ab(iii,iv).

Distribution in Telangana State



Animal - *Clanga clanga* (Pallas, 1811)



Photo: Vijay Surdesai

Taxonomy Class Aves; Order Accipitriformes; Family Accipitridae.

Geographic Range Distributed in small numbers over a vast area, from central and eastern Europe, North Africa to south and south-east Asia.

State Distribution Rare; known from Bhadradi Kothagudem, Rangareddy, Hyderabad, Medchal-Malkajgiri, Sangareddy, Medak, and Karimnagar districts.

Population Nothing is known about its population status and trends.

Habitat & Ecology This species is a winter migrant, prefers forests near wetlands, agriculture lands and marshland habitats.

Major Threats Threatened due to habitat loss, caused by changes in land use practices and drainage of wetlands

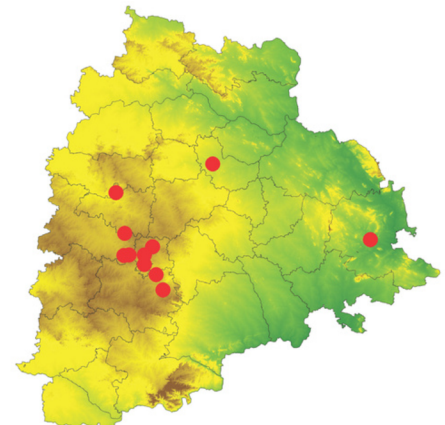
Use & Trade This species is not in trade.

Conservation Measures No known species specific conservation measures are in place for this species. It is reported from a few protected areas

Remarks

This taxon prefers forests near wetlands, agriculture lands and marshland habitats. It is threatened by habitat loss caused by changes in land use practices and drainage of wetlands. It is known from a few locations including protected areas. 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 Vulnerable. In Telangana State, this species is assessed as Vulnerable, with the criteria B1ab(iii)+2ab (iii).

Distribution in Telangana State



Pioneers in Conservation

Padma Shri Modadugu Vijay Gupta

Dr. Modadugu Vijay Gupta, a distinguished Indian aquaculturist and researcher born in 1939 in Bapatla, Andhra Pradesh, has been globally recognized for his transformative contributions to sustainable aquaculture. Honored with the Padma Shri, India's fourth-highest civilian award, in 2023, and the World Food Prize in 2005, Dr. Gupta's work epitomizes innovation in resource-efficient food production systems.

Widely regarded as the architect of the "Blue Revolution," Dr. Gupta's seminal research has redefined aquaculture practices in India and beyond. By championing environmentally sustainable methodologies, he has demonstrated how ecological balance and increased fish productivity can coexist. His pioneering integration of agricultural waste and by-products into aquaculture systems stands as a hallmark of his approach.



Photo Courtesy : The Rashtrapati Bhavan

This strategy not only minimizes environmental waste but also enhances livelihoods by creating auxiliary income streams for farmers, thereby fostering a circular economy. A cornerstone of Dr. Gupta's legacy is his groundbreaking work in optimizing carp breeding through innovative feed solutions. By utilizing farm weeds and poultry manure as nutrient sources, he developed cost-effective, scalable techniques that boosted fish yields while reducing dependency on commercial feeds. This paradigm shift empowered small-scale farmers, particularly in resource-limited settings, to adopt economically viable and ecologically sound practices. Beyond India, Dr. Gupta's models have been replicated across Asia, Africa, and the Pacific, elevating food security and rural resilience. His emphasis on capacity-building—training farmers in sustainable techniques—has ensured the longevity of his innovations. However, his vision extends beyond productivity; it underscores the critical role of community engagement in conservation-driven development.

Environment Education

Bird Migration

One of the most fascinating natural occurrences is bird migration, which is the movement of birds from one habitat to another in pursuit of better living circumstances and more resources for survival. Birds that move from one area to another for breeding, feeding, and raising their young are referred to as migratory birds. Usually, they migrate from unfavourable sites to favourable ones that offer adequate food and water supplies, safe conditions, and both. Migration occurs during seasonal shifts or between breeding and non-breeding areas. The process of migration is difficult for birds because they must travel great distances to get to their destinations. They undergo many bodily changes in preparation for the migration, such as storing more fat in their bodies and gaining weight to preserve food and water. These journeys require a lot of energy and other resources, and not all migration attempts are successful. Some birds even perish on these trips. During their yearly migrations, migratory birds fly along predetermined routes that are influenced by several factors such as terrain, weather, and the locations of their breeding and wintering habitats. A few examples of migratory bird flight paths include; the East Atlantic Flyway, West Atlantic Flyway, East Asian-Australian Flyway, Pacific Flyway, Central Asian Flyway and Black Sea Mediterranean Flyway. The Black-headed Gull, Green Sandpiper, Northern Lapwing, Eurasian Hobby, Gray Heron, Siberian Cranes, Greater Flamingo, etc. are a few examples of migratory birds. Northern Pintail, Cotton Pygmy Goose, Red Crested Pochard, Spot Billed Duck, and Lesser Whistling Ducks, are some of the migratory birds which arrive in the winters at many large lakes of Telangana.



Photo: Asim Mitra

Nature for Kids

Ikki

Ikki, also known as Sahi, is the Indian porcupine featured in Rudyard Kipling's *The Jungle Book*. Though less prominent than characters like Baloo or Bagheera, Ikki is memorable for his prickly demeanor and sharp quills. Portrayed as a solitary and somewhat irritable creature, he navigates the jungle with cautious independence. His interactions with Mowgli and other animals are marked by a defensive yet pragmatic personality. In the story, Ikki's quills serve as both a weapon and a symbol of self-reliance, reflecting his ability to protect himself in a world of predators. While not a central figure, Ikki embodies the resilience of smaller creatures in the jungle hierarchy, often reminding others—through his bristling presence—that even the seemingly vulnerable can command respect.

The Indian porcupine (*Hystrix indica*), the species inspiring Ikki, is a nocturnal rodent native to South Asia's forests, grasslands, and rocky terrains. Known for its formidable coat of keratinous quills (up to 20 inches long), it uses these spines defensively, rattling them to deter predators like tigers and leopards. Unlike Ikki's solitary depiction in the book, wild porcupines often live in small family groups, sharing burrows dug with their strong claws. They are herbivores, feeding on roots, tubers, and bark, and play a vital ecological role in seed dispersal and soil aeration.

Despite their adaptability, Indian porcupines face threats from habitat loss and hunting, as their quills and meat are sometimes illegally traded. Conservation efforts focussing on habitat protection and mitigating human-wildlife conflict, particularly in agricultural areas where they are perceived as crop raiders is needed. Much like Ikki's quiet tenacity in *The Jungle Book*, the real-world Indian porcupine thrives through resilience, proving that even nature's most unassuming creatures are indispensable to the balance of their ecosystems.

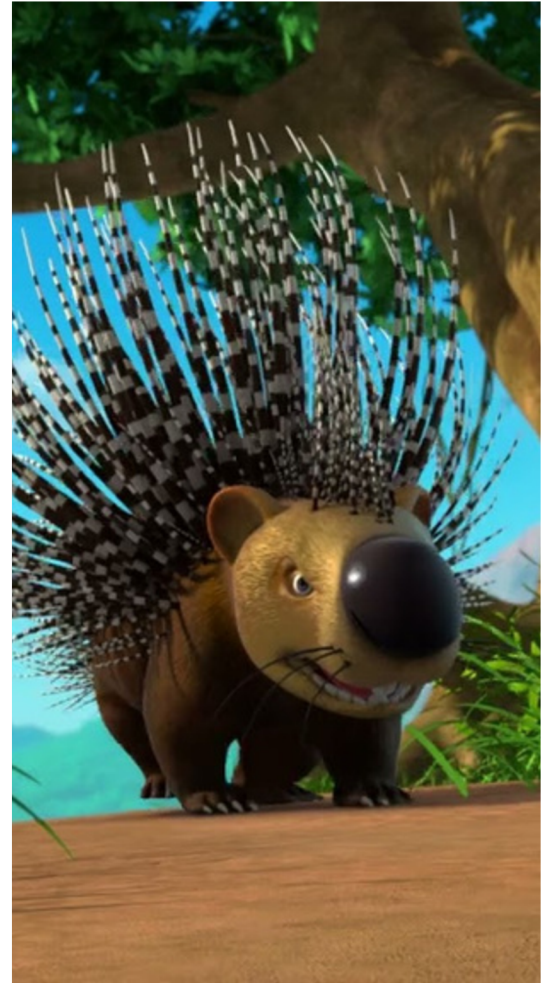


Photo: The Jungle Book Official

Our Biodiversity

Skinks of Telangana State

Skinks are a diverse group of reptiles belonging to the family Scincidae, closely resembling true lizards but distinguished by their slender bodies, indistinct necks, and, in some species, underdeveloped limbs. They are most recognizable by their smooth, glossy scales. While skinks share similarities with lizards, their unique morphological features set them apart. The majority of skink species are ground-dwellers or burrowers, although some species are arboreal or semi-aquatic. These reptiles exhibit a broad distribution, inhabiting a wide range of ecosystems across the globe. In India, there are 62 known species of skinks, with 57% of them being endemic to the country. Telangana is home to eight species of skinks. Notably, *Eutropis ashwamedhi* is categorized as Vulnerable, while *Eutropis nagarjunensis* is assessed as Near Threatened by the International Union for Conservation of Nature (IUCN). The primary threats to skink populations globally include habitat destruction due to agricultural expansion, deforestation, and mining. Additionally, the introduction of invasive predators and overhunting in certain regions exacerbates the pressure on these reptiles.

Skinks play an important ecological role, primarily as insectivores, which helps regulate insect populations and maintain the balance within their ecosystems. Despite their significance in the food chain, skinks remain relatively understudied, particularly concerning their ecological interactions and evolutionary history. The enigmatic nature of certain skink genera highlights the need for further research to better understand their roles in biodiversity and the environment.



Photo: B. Laxmi Narayana



Photo: David V Raju

Feature - Flora

Kamala - *Mallotus philippensis* (Lam.) Muell.Arg.



Classification

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Malphigiales

Family: Euphorbiaceae

Genus: *Mallotus*

Species: *philippensis*

Authority: (Lam.) Muell.Arg.

Mallotus philippensis, commonly known as the Kamala tree or red kamala, is a medicinally significant plant widely distributed across tropical and subtropical regions of South Asia, Southeast Asia, and Australia. This small to medium-sized tree grows up to 25 meters tall, featuring fluted trunks, ovate leaves with distinctive red glands on the underside, and three-lobed fruits covered in a powdery red substance that yields a natural dye historically used for colouring silk and wool. Renowned in traditional medicine systems like Ayurveda and Unani, the plant's fruits, leaves, and bark have been used for centuries to treat a range of ailments, including helminthic infections, skin disorders, bronchitis, and digestive issues, owing to their anthelmintic, purgative, and anti-inflammatory properties. The red powder derived from its fruit glands, known as Kamala powder, is particularly valued for its efficacy against tapeworms and intestinal parasites, often administered with milk or curd for enhanced effect. Beyond its medicinal uses, the tree holds cultural and economic significance, with its dye used in textiles and its wood employed for fuel and minor construction, though overharvesting has led to conservation concerns. The plant's resilience in degraded soils also makes it valuable for reforestation efforts.

Photo: Paresh Churi

Feature - Fauna

Indian Eagle-Owl - *Bubo bengalensis* (Franklin, 1831)

Classification

Kingdom: Animalia

Phylum: Chordata

Class: Aves

Order: Strigiformes

Family: Strigidae

Genus: *Bubo*

Species: *bengalensis*

Authority: (Franklin, 1831)



Bubo bengalensis (Indian Eagle Owl/Rock Eagle Owl) is native to the Indian subcontinent, widely distributed in rocky hills, scrub forests, semi-arid areas, and forest edges. It is a large owl about 50–60 cm in length, with a wingspan reaching over 130 cm. It has mottled brown, grey, and buff plumage providing excellent camouflage, with whitish underparts streaked in brown. Prominent ear tufts, a pale facial disc bordered in dark, orange to deep yellow eyes, and a strong curved beak are its distinctive features. Its habitat includes rocky outcrops, cliffs, and abandoned quarries; it prefers areas with sparse vegetation and minimal disturbance. It is mostly solitary, pairing only in breeding season, and roosts during the day while active at dusk and night. Its deep booming hoot can be heard at twilight, especially in the mating season. It nests in rock crevices or ground scrapes without added nesting material. It feeds on small mammals, reptiles, birds, and insects, thus helping control pest populations and maintaining ecological balance. It breeds from November to April, laying 2–4 eggs with chicks hatching after around 33–35 days. Though listed as Least Concern by IUCN, threats like habitat disturbance, superstition-driven persecution, and reduction in prey are causing regional decline. Being a large and vocal bird, it often becomes vulnerable to human activities.

Photo: Swaonil Thatte

Events

India's Commitment to River Dolphin Conservation



Courtesy: www.worldwildlife.org

India recently participated in the Global Declaration for River Dolphins, held in Bogotá, Colombia, on October 23-24, 2023, underscoring its dedication to the conservation of these endangered aquatic species. River dolphins, which are found in the country's major river systems, such as the Ganges and the Brahmaputra, face significant threats from habitat loss, pollution, and overfishing. India's involvement in the declaration is a clear reflection of its ongoing efforts to safeguard these unique species, including the Ganges river dolphin (*Platanista gangetica*), which is listed as endangered by the IUCN. During the discussions, India reaffirmed its commitment to collaborative international efforts, policy strengthening, and the implementation of conservation strategies that focus on habitat protection, sustainable fisheries, and reducing river pollution. This global initiative aligns with India's broader goals of biodiversity preservation and its commitment to the United Nations Sustainable Development Goals (SDGs), particularly those related to life below water.

News

Indian Government updates forest cover data



Photo: Amal R.

The Ministry of Environment, Forest and Climate Change has announced an update to its forest cover assessment methodology, with the Forest Survey of India (FSI) adopting 2022-23 as the new base year for compiling Gross Domestic Product (GDP) and forest cover data, replacing the 2011-12 base year. The latest assessment, based on the India State of Forest Report (ISFR) 2021, reveals that India's total forest cover is 713,789 square kilometers, or 21.71% of the country's land area. This marks an increase of 7,449 square kilometers from 2017, with no loss in forest or tree cover, addressing concerns about deforestation and carbon emissions. Discrepancies between ISFR 2021 and Global Forest Watch data are attributed to differing definitions of forest cover. Additionally, amendments to the Forest (Conservation) Act, 1980, effective from December 1, 2023, aim to enhance forest conservation and management, aligning with India's carbon neutrality goals and ecological sustainability.

Signing Off

Why Feeding Pigeons Harms Us All?

Feral rock pigeons, commonly found in urban areas like Hyderabad, have become a serious ecological and public health concern. Though often seen as harmless or even charming, their unchecked population growth poses multiple problems. These birds thrive in cityscapes, nesting on buildings and feeding off food waste and offerings by people. Their droppings, rich in uric acid, corrode buildings, monuments, and vehicles, leading to increased maintenance costs. More critically, pigeons are carriers of diseases such as histoplasmosis, cryptococcosis, and psittacosis, which can be transmitted to humans through inhalation of dried droppings, especially in enclosed or poorly ventilated spaces. The feathers and droppings also contribute to poor air quality and respiratory issues, particularly for children, the elderly, and those with weakened immune systems. Their dominance in urban habitats often displaces native bird species, reducing avian diversity and altering the ecological balance. Feeding pigeons, a common practice in cities, worsens the problem by encouraging overpopulation and dependence on humans. This artificial support disrupts natural food chains and causes overcrowding, disease spread, and aggression among flocks. To protect urban biodiversity and safeguard public health, citizens should refrain from feeding feral pigeons. Responsible urban coexistence begins with informed action.



Photo: Ashuthosh U.

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

A Centre of Excellence under MHRD-RUSA 2.0 at Osmania University

#F5, First Floor, CFRD Building, Osmania University, Hyderabad- 500007, TS

Visit us at: www.osmania.ac.in/rusa2/cbcs

Email: biodiversityclub@osmania.ac.in