

Telangana Biodiversity

Vol. 5 Issue 4

Oct-Dec, 2024

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

Editorial

The Striped Hyena (*Hyaena hyaena*), a lesser-known yet ecologically significant carnivore, is quietly vanishing from India's wild landscapes. Once widely distributed across the subcontinent, this elusive scavenger is now increasingly rare, primarily due to habitat loss, human-wildlife conflict, poaching, and negative perceptions. Often misunderstood and falsely labeled as a threat, hyenas are frequently persecuted or driven away from their native habitats. Despite its shy and solitary nature, the Striped Hyena plays a crucial ecological role as a scavenger, maintaining environmental hygiene by feeding on carcasses and organic waste. This natural cleanup helps prevent the spread of disease and supports overall ecosystem balance. Its disappearance would disrupt this balance and signal deeper ecological problems.

Conservation of the Striped Hyena requires a shift in public perception. Education and awareness are essential to dispel myths and promote coexistence. Strengthening wildlife protection laws, securing natural habitats, and conducting population assessments are equally vital. Protecting the Striped Hyena is not just about saving one species—it's about preserving the integrity of the ecosystems it supports. As stewards of biodiversity, we must ensure that this quiet sentinel of the night continues to thrive in the wilds of India, contributing to a healthier, more balanced environment. Safeguarding the Striped Hyena ensures ecological balance and reflects our commitment to wildlife conservation.

Contents

Editorial	1
Briefly	1
Special Feature	2
Threatened Taxa	3
Pioneers in Conservation	4
Environment Education	4
Nature for Kids	5
Our Biodiversity	5
Feature - Flora	6
Feature - Fauna	7
Events	8
News	8
Signing Off	8



Photo: Annu Jalais

Editorial Board

Chief Patron

Prof. Kumar Molugaram
(Vice-Chancellor, Osmania University)

Editor-in-Chief

Prof. Chelmala Srinivasulu FLS, FZS
(Director, Centre for Biodiversity and Conservation Studies, Osmania University)

Editorial Team

Sri Kalicharan S. Khartade
(Secretary, Telangana State Biodiversity Board)

Dr. Bhargavi
(PDF, Department of Zoology, Osmania University)

Ms. Farida Tampil
(State Director, WWF-India Hyd. Office)

Dr. C. Sudhakar Reddy
(NRSC-ISRO, Hyderabad)

Article Editor

Dr. Bhargavi
(Volunteer, Centre for Biodiversity and Conservation Studies, Osmania University)

Email

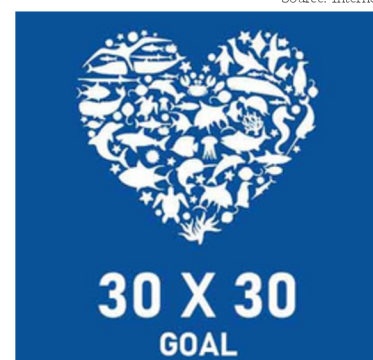
biodiversityclub@osmania.ac.in

Briefly

Urgent Action Needed to Meet 30x30 Biodiversity Goal

The International Union for Conservation of Nature (IUCN) has issued a compelling call to action: to protect 30% of the planet's land and oceans by 2030, known as the "30x30" target. Current conservation efforts fall short, with only 17.6% of land and 8.4% of marine areas under protection. Achieving this goal requires doubling terrestrial protected areas and tripling marine conservation zones within the next five years. This initiative is vital for preserving biodiversity, mitigating climate change, and sustaining ecosystem services. However, challenges such as inadequate funding, insufficient political commitment, and the need for equitable governance hinder progress. The IUCN emphasizes that effective conservation must involve indigenous and local communities, ensuring that protected areas are not only expanded but also well-managed and ecologically representative. As the 2030 deadline approaches, the global community must intensify efforts to increase financial investments, strengthen policy frameworks, and foster international collaboration. Protecting our planet's biodiversity is not just an environmental imperative but a cornerstone for a sustainable and resilient future.

Source: Internet



Special Feature

Sundarbans Tiger Reserve

The Sundarbans Tiger Reserve (STR), located in the South 24 Parganas district of West Bengal, India, is an integral part of the world's largest contiguous mangrove forest. Spanning an area of approximately 2,585 square kilometers, of which 1,474 square kilometers are forested, the reserve forms a unique and essential habitat for the endangered Royal Bengal Tiger (*Panthera tigris tigris*). It also provides refuge to a wide variety of terrestrial, estuarine, and marine species, making it one of the most biologically rich regions in India.

Designated a UNESCO World Heritage Site in 1987, the Sundarbans is internation-

ally recognized for its ecological significance. The landscape comprises a dynamic matrix of tidal rivers, mudflats, estuaries, and dense mangrove forests, primarily dominated by species like the Sundari tree (*Heritiera fomes*), which has given the Sundarbans its name.

Other important mangrove species include *Avicennia*, *Rhizophora*, and *Excoecaria*. These trees have remarkable adaptations such as aerial roots and salt-filtering systems, allowing them to survive in saline, waterlogged soils and tidal conditions.

The faunal diversity of the reserve is equally impressive. Apart from the Royal Bengal Tiger, the Sundarbans support spe-

-cies like saltwater crocodiles, fishing cats, estuarine and olive ridley turtles, spotted deer, wild boars, and rhesus macaques. Avian life is abundant, with birds such as kingfishers, herons, and Brahminy kites commonly seen. The region also supports a variety of fish and invertebrates, many of which are economically vital for the local fishing communities.

One of the most remarkable aspects of the Royal Bengal Tigers in the Sundarbans is their behavioral adaptation to a mangrove environment. Unlike their inland counterparts, these tigers are strong swimmers, often seen moving between the

Photo: Amar Preciado



islands, and have been known to prey on aquatic species such as fish and crabs. Their elusive nature and adaptation to brackish waters make them a symbol of resilience in one of the harshest tiger habitats on Earth.

Conservation efforts in STR are multifaceted. Anti-poaching patrols, regular camera trapping, radio-collaring, and habitat management are conducted by the West Bengal Forest Department and other agencies. These measures aim to monitor tiger populations, deter illegal activities, and enhance ecosystem health. Additionally, transboundary cooperation with Bangladesh is essential since the Sundarbans spans both countries and shares common conservation challenges.

The human dimension of the Sundarbans is vital. Approximately 4.5 million people live in and around the reserve, relying on its natural resources for livelihood. Fishing, honey collection, fuelwood gathering, and ecotourism are integral to the local economy. However, these activities often bring people into conflict with wildlife, especially tigers. To mitigate this, community-based conservation initiatives have been introduced. These include sustainable honey harvesting, mud crab farming, and alternative livelihoods that reduce pressure on forest resources while supporting income generation. Climate change too is emerging as the most significant threat to the future of the Sundarbans.

Photo: Biplab Sau



Threatened Taxa

Plant - *Crotalaria triquetra* Dalzell



Photo: Dinesh Valke

Taxonomy: Order Fabales; Family Fabaceae.

Geographic Range: This is endemic to India and Sri Lanka. In India, it is distributed throughout the peninsula.

State Distribution: It is rare and is known only from Farahabad in Nagarkurnool District.

Population: Nothing is known about its population. It has been reported from one locality in Telangana State.

Habitat & Ecology: This is a herb occurring in open grasslands and wastelands.

Major Threats: This species is threatened due to habitat loss and destruction, and livestock grazing. Specific threats to the species are unknown.

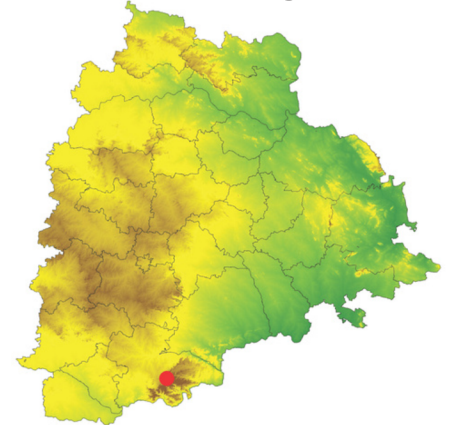
Use & Trade: The species is not in trade.

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

Remarks

This species is found in open grasslands and wastelands. Its presence is found in Amrabad Tiger Reserve. This species is threatened by habitat destruction, and livestock grazing. The estimated number of locations is 1; the estimated extent of occurrence (EOO) in Telangana State is <100 km², and the area of occupancy (AOO) is <10 km². There is an inferred continuing decline in the area, extent and quality of suitable habitat. At the global level this species is not assessed. In Telangana State, this species is assessed as Endangered with the criteria B1ab(iii)+2ab(iii).

Distribution in Telangana State



Animal - *Hyaena hyaena* (Linnaeus, 1758)



Photo: Vijay Sirdesai

Taxonomy: Class Mammalia; Order Carnivora; Family Hyaenidae.

Geographic Range: This is widely distributed extending from Africa to South and Southeast Asia. In India, it is distributed in most of peninsular India, but absent in Western Ghats, most of Tamil Nadu, Kerala, West Bengal, the Northeast and also the deserts and coastal areas.

State Distribution: It is distributed in Mancherial, Sangareddy, Mahabubabad, Bhadradi-Kothagudem and Nagarkurnool districts of Telangana State.

Population: It is rare in occurrence. It is distributed in very few scattered localities and its sightings are on the decline.

Habitat & Ecology: It is found in open areas, scrub jungles, dry thorn forests, dry deciduous forests and sometimes near human habitation. In these habitats, it prefers rocky areas and lives in burrows.

Major Threats: This species is threatened majorly due to human-animal conflict, persecution, poisoning, depletion of prey base, habitat loss and fragmentation.

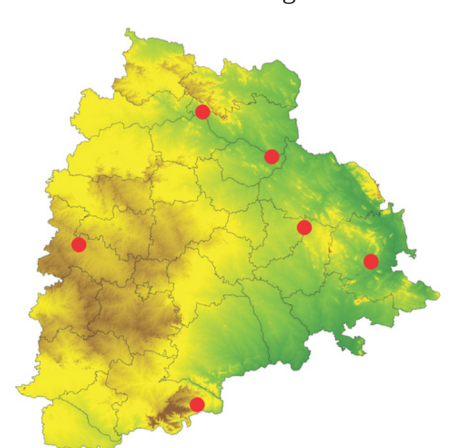
Use & Trade: This species is not in trade.

Conservation Measures: No known species specific conservation practices are in place for this species. It is known from Amrabad and Kawal Tiger Reserves, Siwaram, Pakhal, and Kinnerasani Wildlife Sanctuaries. It is included under Schedule III of the Wildlife (Protection) Act, 1972.

Remarks

This taxon is found in open areas, scrub jungles, dry thorn forests, dry deciduous forests and sometimes near human habitation. It occurs in Amrabad and Kawal Tiger Reserves, Pakhal, Siwaram and Kinnerasani WLS. This species is threatened majorly by human-animal conflict, persecution, poisoning, depletion of prey base, habitat loss and degradation; the estimated extent of occurrence (EOO) in Telangana State is >50000 km², and the area of occupancy (AOO) is >5000 km². 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(ii)+2ab(iii).

Distribution in Telangana State



Pioneers in Conservation

Padma Shri Chami Murmu

Chami Murmu is a remarkable environmentalist whose unwavering dedication to forest conservation and community welfare has transformed countless lives. Born on November 6, 1971, in Bhursa village, Seraikela district, she began her journey nearly three decades ago by mobilizing a group of 10 women to protect forests and improve livelihoods.

Determined to restore Jharkhand's degraded forests, Murmu has spearheaded large-scale tree-planting initiatives, mobilizing women from over 500 villages to plant native species like Neem, Sal, and Sheesham. Under her leadership, more than two million trees have been planted, helping revive the region's wildlife and ecosystem. Her efforts have not only restored biodiversity but also safeguarded forests from illegal logging through a robust network of women who actively monitor and prevent tree felling. Murmu also serves as the former Secretary of Sahayogi Mahila, Bagraaisai, an organization empowering women through sustainable agriculture and self-reliance.



Photo Courtesy : Internet Resource

Through her initiatives, Murmu has connected 2,800 Self-Help Groups (SHGs), comprising around 30,000 women, fostering economic independence through goat rearing, piggery, poultry farming, and modern agriculture techniques. Her relentless efforts have been nationally recognized with prestigious awards, including the Indira Priyadarshini Vriksha Mitra Award and the Nari Shakti Puraskar.

Environment Education

Tiger Beetles - Bioindicators

Tiger beetles, belonging to the family Cicindelidae, are fascinating yet lesser-known insects renowned for their speed and predatory skills. They are considered the fastest flying insects in the world, and their rapid hunting speeds are so intense that they temporarily lose vision while pursuing prey. This unique adaptation makes them not only agile hunters but also captivating subjects of scientific study. Globally, around 2,600 species of tiger beetles have been recorded, with the Indian subcontinent boasting the highest diversity, comprising of 220 species.

Their aggressive hunting strategy has earned them their common name, highlighting their role as formidable predators in various ecosystems. Beyond their hunting skills, tiger beetles serve as essential bioindicators. Highly sensitive to environmental changes, they are often the first to respond to changes like pesticide use, habitat degradation, and climate change. Tiger beetles are found in diverse habitats, including dense forests, open grasslands, and rocky terrains. Hence, their presence, and diversity can provide crucial insights into the health of an ecosystem. Continued research on the ecology of tiger beetles can aid in monitoring ecosystem changes, making them invaluable allies in biodiversity conservation.

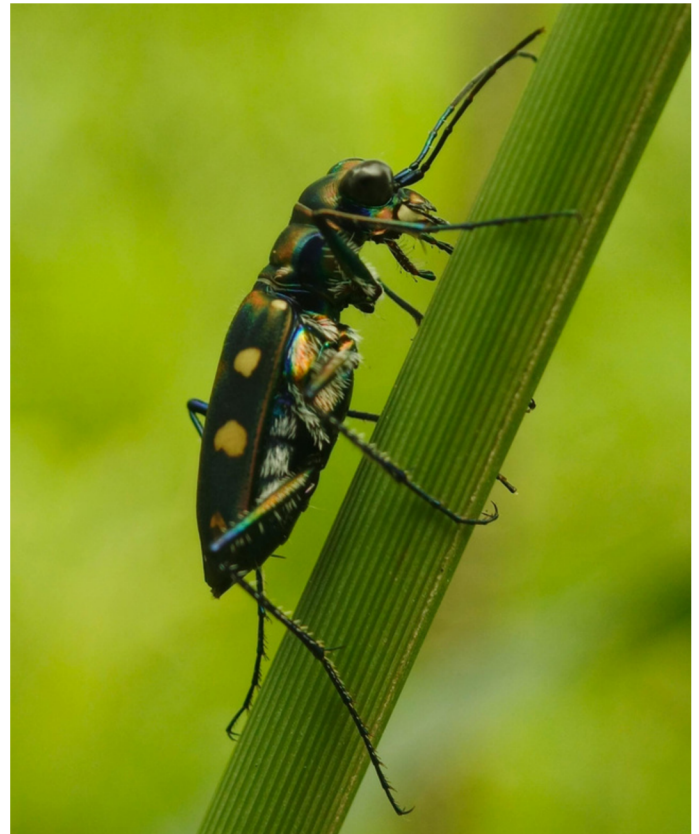


Photo: Igud Supian

Nature for Kids

Bandar-log

The Bandar-log, or the Monkey People, are some of the most memorable characters from *The Jungle Book*. Wild, unpredictable, and often chaotic, these monkeys represent a society without rules or leadership - a sharp contrast to the ordered jungle world of characters like Bagheera and Baloo. In Rudyard Kipling's tale, the Bandar-log kidnap Mowgli and take him to the Cold Lairs, an abandoned city in the jungle, where their chatter and confusion reign supreme.

But did you know the Bandar-log were inspired by real monkeys found in India? In particular, Kipling likely drew inspiration from the gray langur (*Semnopithecus*), a species of slender, long-limbed monkeys with expressive faces and long tails. These monkeys are common throughout the Indian subcontinent and are often seen in temples, forests, and urban areas.

Langurs are intelligent and social, living in groups with complex social structures. Much like the Bandar-log, they can be noisy and mischievous — known to steal food or leap across rooftops in villages. However, unlike the lawless Bandar-log of fiction, real langurs follow group hierarchies and are essential members of their ecosystems. They feed on fruits, leaves, and flowers, playing a role in seed dispersal and forest health.

Though they are not predators like Bagheera or Shere Khan, langurs too face threats from habitat loss and human interference. By appreciating the Bandar-log, we also learn to understand and respect real-world primates - mischievous, yes, but fascinating, social, and vital to the jungle's balance.

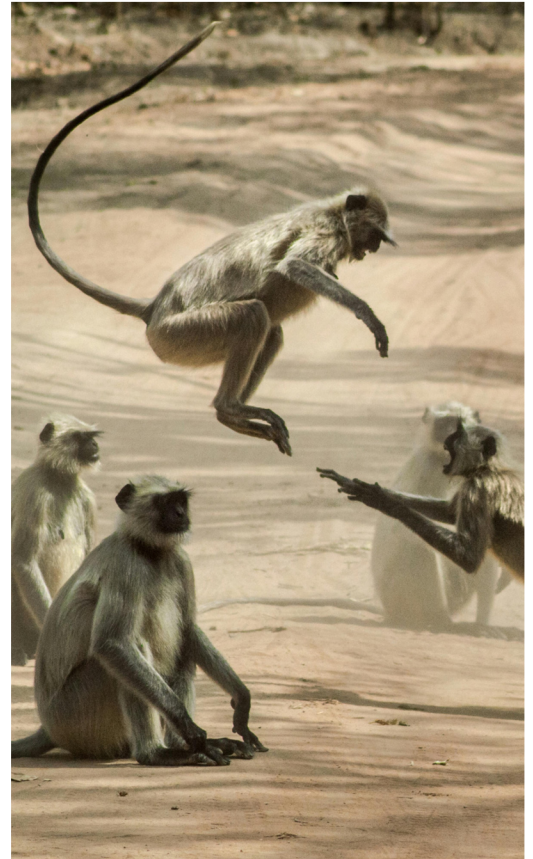


Photo: Vishnudeep Dixit

Our Biodiversity

Geckos of Telangana State

Telangana's varied landscapes, encompassing rocky outcrops, forests, and urban areas, support a rich diversity of geckos, particularly within the genus *Hemidactylus*. Recent herpetological studies have highlighted the state's significance as a hotspot for gecko diversity, leading to the discovery of several new species.

In 2021, researchers described two new species: *Hemidactylus flavicaudus* and *H. xericolus* from xxx and xxx respectively. These small-sized geckos, measuring less than 45 mm in snout-to-vent length, are distinguished by their bright yellow tails and unique morphological features. Genetic analyses revealed significant divergence from other members of the *H. brooki* group, underscoring the hidden diversity within this complex.

Further expanding the known diversity, a 2022 study led by scientists from Osmania University identified two new species from Telangana previously referred to as *H. giganteus* - *H. saxicolus*, and *H. aemulus*. These species were differentiated based on detailed morphological assessments and phylogenetic analyses, highlighting the presence of cryptic species within well-known taxa.

H. giganteus itself, once thought to have a broad distribution, is now understood to be restricted to the Godavari river basin in Telangana and neighboring regions. This realization emphasizes the importance of precise taxonomic studies in understanding species distributions and conservation needs.

Other notable species in Telangana include *H. treutleri*, endemic to the region, and commonly encountered species like *H. flaviviridis* and *H. frenatus*, which are well-adapted to urban environments.

These discoveries underscore Telangana's role as a center of gecko diversity and the necessity for continued research. Comprehensive surveys and conservation efforts are crucial to protect these unique species and their habitats, ensuring the preservation of the state's rich herpetofaunal heritage.



Photo: Aparna Lajmi



Photo: G. Chethan Kumar

Feature - Flora

Karanj - *Pongamia pinnata* (L.) Pierre

Classification

Kingdom: Plantae
Division: Tracheophyta
Class: Magnoliopsida
Order: Fabales
Family: Fabaceae
Genus: *Pongamia*
Species: *pinnata*
Authority: (L.) Pierre



Pongamia pinnata, commonly known as Karanj or Indian Beech, is a medium-sized deciduous tree native to the Indian subcontinent and Southeast Asia. In Telugu, it is called "*Kanuga*." It is recognized for its wide, spreading crown and pinnate leaves with glossy green leaflets. The tree bears fragrant purple to lavender flowers, which develop into flat, brown seed pods containing oil-rich seeds. Traditionally, it has been used in agroforestry and along roadsides for shade and soil improvement due to its nitrogen-fixing ability. The seeds yield Karanj oil, used in traditional medicine and for biodiesel production. In Ayurveda, various parts of the tree are used to treat skin diseases, wounds, and inflammation. Hardy and drought-resistant, it plays a vital ecological role in land reclamation and is valued for its environmental and medicinal properties.

Courtesy: Karoyono, CIFOR

Feature - Fauna

Bengal Tiger - *Panthera tigris* (Linnaeus, 1758)



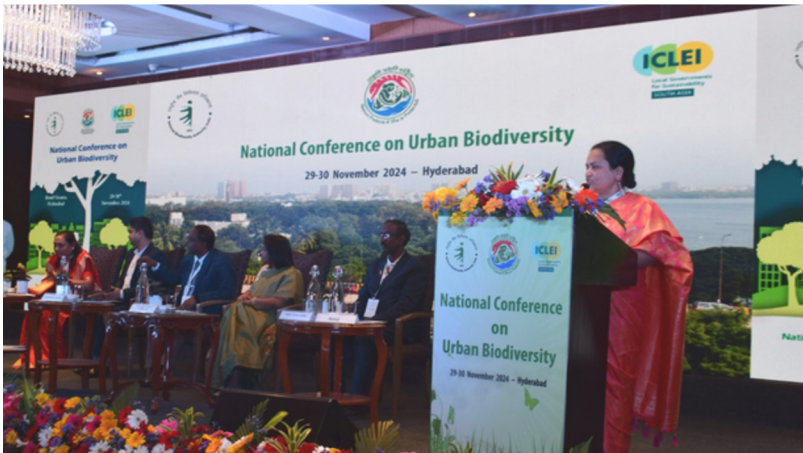
Classification
Kingdom: Animalia
Phylum: Chordata
Class: Mammalia
Order: Carnivora
Family: Felidae
Genus: *Panthera*
Species: *tigris*
Authority: (Linnaeus, 1758)

The Bengal Tiger (*Panthera tigris tigris*) is the most iconic and majestic big cat of the Indian subcontinent. Known for its rich orange coat with black stripes, a white underside, and powerful build, it symbolizes strength and grace. They are solitary and territorial carnivores, typically found in varied habitats—ranging from dense mangrove forests like the Sundarbans to grasslands and tropical forests. As apex predators, they play a crucial role in maintaining the health and balance of ecosystems by regulating prey populations. These tigers primarily hunt deer, wild boar, and other large ungulates. Though once widespread, Bengal Tigers faced severe population declines due to poaching, habitat fragmentation, and human-wildlife conflict. Project Tiger and protected reserves have aided in population recovery, though threats remain. The Bengal Tiger is listed as Endangered on the IUCN Red List.

Photo: Vijay Surdesai

Events

National Conference on Urban Biodiversity



Courtesy: Internet Resource

ICLEI – Local Governments for Sustainability, South Asia, in collaboration with the National Biodiversity Authority, organised a two-day national conference on urban biodiversity. The conference was held on 29 and 30 November 2024 in Hyderabad. The event saw the participation of over 200 delegates, bringing together mayors, municipal commissioners, policymakers, environmental experts, forest officials, and urban planners from 35 cities in India to discuss the pressing issue of biodiversity conservation in urban environments.

The two-day event consisted of technical sessions and deliberations, on topics including: “Nature in the City: Fundamentals and Perspectives,” “Showcasing Best Practices / Voices from Cities,” and “Role of Local Bodies, Urban Development Bodies, Biodiversity Boards, Forest Departments, and Forest Development Corporations in Promoting Urban Biodiversity.” This conference emphasised fostering collaboration across sectors and levels of governance for urban biodiversity conservation.

News

Cali Fund for Biodiversity Conservation



Photo: Abhinav Ravindran

International discussions are progressing on securing sustainable financial resources for biodiversity conservation. A key focus has been the operationalization of the Cali Fund for Nature, aimed at channeling dedicated support to developing countries for conservation efforts. Delegates and stakeholders have also explored the potential of voluntary biodiversity offset markets, which allow businesses to compensate for environmental impacts by investing in habitat restoration and preservation elsewhere. These financial instruments are viewed as critical tools to bridge the global biodiversity funding gap and support countries in meeting their targets under the Kunming-Montreal Global Biodiversity Framework. The dialogue reflects a growing recognition of the need for innovative, scalable, and inclusive financing mechanisms to ensure the long-term protection of biodiversity across the planet, especially in regions most vulnerable to ecological degradation and biodiversity loss.

Signing Off

Indigenous Communities Important for Conservation

The critical role of Indigenous Peoples and Local Communities (IPLCs) in safeguarding global biodiversity is gaining long-overdue recognition in international conservation dialogues. These communities, who have lived in harmony with nature for generations, possess deep-rooted traditional ecological knowledge and sustainable practices that have preserved diverse habitats across the globe. Their stewardship is especially significant, as nearly 80% of the world's remaining biodiversity exists within Indigenous-managed lands.

In a landmark development, growing consensus has emerged around the need to formally include IPLCs in biodiversity policymaking. The establishment of a permanent subsidiary body dedicated to IPLCs is being seen as a major step forward. This proposed body would ensure that Indigenous voices are not only heard but also integrated into global conservation frameworks. It will provide a formal platform for sharing traditional knowledge, advocating for rights, and participating in decisions that directly impact their lands and livelihoods.

Recognizing the knowledge systems and governance models of IPLCs aligns with the goals of the Kunming-Montreal Global Biodiversity Framework, which emphasizes equity, inclusivity, and rights-based approaches to conservation. Experts and advocates agree that empowering IPLCs is essential for achieving durable conservation outcomes and addressing the root causes of biodiversity loss.



Photo: Anusree GS

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