

Telangana Biodiversity

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

Editorial

In this issue, we celebrate World Wildlife Day 2023, a global event that reminds us of the incredible diversity of life on our planet and the urgent need to protect it. Through engaging articles, we explore the wonders of nature and the essential role of conservation in safeguarding our biodiversity. Delve into the enchanting landscapes of Mrugvani National Park, an oasis of tranquility amidst the bustling city of Hyderabad, India. Our spotlight shines on *Arthraxon depressus* and Malabar Trogon. We pay tribute to a barefoot conservationist who has dedicated his life to the conservation of hundreds of paddy varieties, ensuring their preservation for future generations. His passion and dedication are an inspiration to us all. We reflect on the lasting impact of Darwin's pioneering work on evolution and the interconnectedness of all life forms. Sher Khan from Rudyard Kipling's Jungle Book, timber-yielding plants of Telangana State, and features on *Phyllanthus amarus* and the enigmatic Banded Krait is also provided.

However, amidst the celebration of biodiversity, we cannot ignore the pressing issue of climate change. Our focus in this issue is the alarming increase in global temperatures, making this the hottest quarter in the past 174 years. It has negative implications, and needs collective action to address this crisis. We invite you to join us in celebrating the beauty and resilience of our natural world - especially the ones that will be impacted more - like the Polar Bears featured below.



Photo: Hans-Jurgen Mager

Briefly

Wildlife Day and its importance

World Wildlife Day is observed on March 3 every year. It is recognised by the United Nations to celebrate all wild animals and plants and their beneficial role, and the impact they have on both our quality of life and the health of the planet. Given that the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), was signed on this day in 1973, it was chosen as the commemoration. This year this day is celebrated as double celebration as CITES turns 50. This year's World Wildlife Day theme is "Partnerships for Wildlife Conservation" in honour of the work that CITES undertakes and the cooperative conservation effort that is being done globally. Within this theme, the Wildlife day has a focus on two sub-topics: 1) Marine life & oceans and 2) Business & finance. Globally, conservation efforts need to be funded and this work needs to be done in collaboration with business - an area that, in the past, has been seen as exploitative and unsustainable. Successful partnerships for conservation must find ways of including business if we are to reverse the loss in biodiversity.

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Courtesy: United Nations



Special Feature

Mrugavani National Park

Nestled amidst the bustling city of Hyderabad, India near Chilkur in Moinabad mandal, lies the serene and picturesque Mrugavani National Park. Spread across an area of 3.6 square kilometers, this National Park, established in 1994, offers a much-needed escape into nature's lap. With its diverse flora and fauna, Mrugavani National Park provides an enchanting experience for nature lovers and wildlife enthusiasts alike.

Mrugavani National Park is renowned for its rich biodiversity. The park is home to a wide range of plant species, including medicinal herbs, shrubs, and trees, creating a

lush green canopy that offers respite from the urban environment. Visitors can witness the beauty of indigenous flora, such as teak, bamboo, sandalwood, and many more.

The park's diverse fauna is equally captivating. Mrugavani is a paradise for bird-watchers, as it hosts over 100 species of birds, including peafowls, partridges, hoopoes, and mynas. The tranquil atmosphere provides an ideal setting for bird enthusiasts to observe and appreciate these feathered creatures in their natural habitat. The park is also home to several mammals, such as spotted deer, wild

boar, jackals, and porcupines, which can be spotted during a safari or a leisurely stroll.

Mrugavani National Park offers a network of well-maintained nature trails that allow visitors to explore the park's diverse landscapes. These trails wind through the dense foliage, providing glimpses of hidden ponds, gurgling streams, and serene landscapes. The park management has created comfortable seating areas and viewpoints along the trails, allowing visitors to relax and immerse themselves in the surrounding beauty.

Courtesy: Mrugavani NP



The park's administration actively promotes eco-tourism and organizes guided nature walks, promoting environmental awareness and conservation. These walks provide valuable insights into the park's ecosystem, wildlife conservation efforts, and the importance of preserving natural habitats. Additionally, the park regularly conducts educational programs, workshops, and nature camps, creating opportunities for visitors, especially children, to learn about wildlife conservation and sustainable practices.

Mrugavani National Park serves as a crucial habitat for several endangered and endemic species. Recognizing its ecological significance, the park administration works diligently to protect and conserve

its natural resources. Efforts are focused on maintaining a delicate balance between preserving the park's biodiversity and promoting responsible tourism.

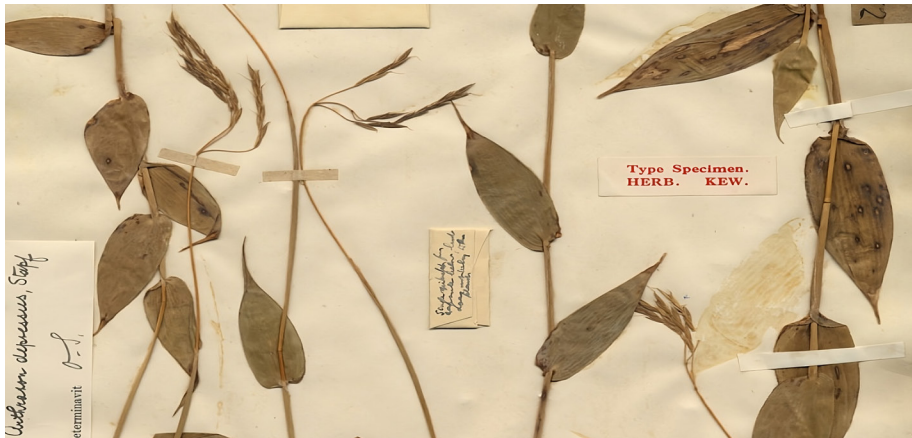
Mrugavani National Park offers a captivating blend of natural beauty, wildlife diversity, and tranquility amidst the urban chaos of Hyderabad. This oasis of greenery serves as a reminder of the importance of preserving and appreciating nature's wonders. A visit to Mrugavani National Park promises an enriching experience, connecting visitors with the inherent beauty and serenity of the natural world.

Courtesy: Internet Stock Images



Threatened Taxa

Plant - *Arthraxon depressus* Stapf ex C.E.C.Fisch.



Courtesy: Kew Gardens Herbarium

Taxonomy Order Poales; Family Poaceae

Geographic Range Endemic to India; and is distributed throughout the country.

State Distribution Rare; found in Siddipet, Wanaparthy, and Nagarkurnool districts.

Population Nothing is known about its population status or trends.

Habitat & Ecology Grass species found in grassland areas and open hilly areas in dry deciduous and scrub forests.

Major Threats Threatened due to habitat fragmentation and loss, forest fires, and livestock grazing.

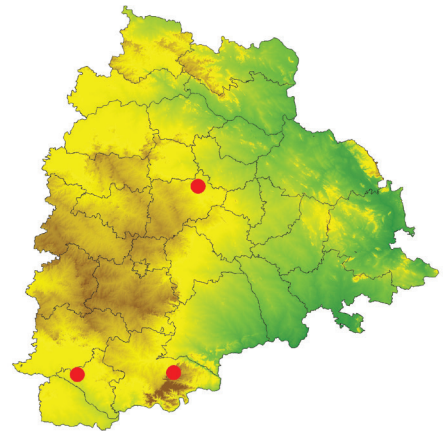
Use & Trade The species is not in trade.

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

Remarks

This species is found in dry deciduous and scrub forests. It occurs in Amrabad TR. It is threatened by habitat destruction, livestock grazing, and forest fires. 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 <200 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 B1ab(iii,iv)+2ab(iii,iv).

Distribution in Telangana State



Animal - *Harpactes fasciatus* (Pennant, 1769)



Photo: Vidya Vijay Kulkarni

Taxonomy Class Aves; Order Trogoniformes; Family Trogonidae.

Geographic Range Distributed in Sri Lanka and peninsular India. In India, it is localized in the Western Ghats and scattered localities in the northern Eastern Ghats.

State Distribution Rare; historically in Nagarkurnool district, and occasional records in Bhadradi Kothagudem district.

Population Nothing is known about its population status and trends.

Habitat & Ecology Inhabits forested tracts.

Major Threats Threatened due to deforestation and expansion of agriculture.

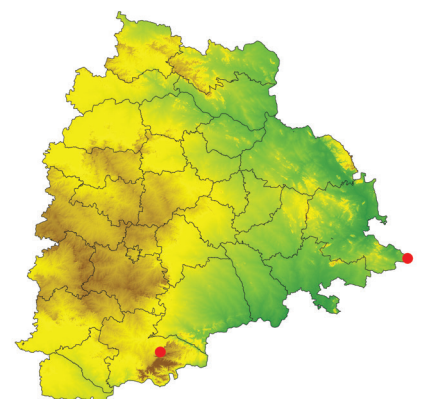
Use & Trade This species is not in trade.

Conservation Measures No species-specific conservation measures are in place for this species.

Remarks

This taxon is found in forested tracts of Bhadradi Kothagudem district in the Godavari river basin. It is threatened by deforestation and expansion of agriculture. 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 Least Concern. In Telangana State, this species is assessed as Endangered, with the criteria B1ab(iii)+2ab (iii).

Distribution in Telangana State



Pioneers in Conservation

Padma Shri Cheruvayal K Raman

Cheruvayal K. Raman, affectionately known as Ramettan (Brother Raman) among the locals, belongs to the Kurichiyar tribal community in Wayanad (Land of Paddies). He hails from Mananthavadi, Kammana, and comes from a traditional family of farmers settled in Wayanad for generations. Even at the age of 73, he continues to cultivate 52 rare rice varieties, a feat that requires immense effort. Despite facing financial difficulties, he has steadfastly preserved traditional rice varieties instead of opting for higher-yielding hybrid seeds. What makes Raman's achievement remarkable is that he has conserved these rice seeds without adopting modern technology or conventional agricultural sciences. Despite owning acres of land, he still resides in his ancestral 150-year-old mud hut. Over the years, he has received numerous accolades for his dedication, with the Padma Shri being the latest recognition on his esteemed list of honors.



Inset Photo Courtesy: The Hindu



Photo Courtesy : South Firsts

Raman's small farm serves as a living gene bank for indigenous paddy varieties. He preserves 52-55 rare rice varieties, most of which have been passed down through generations and are approximately 500 years old. His commitment to farming with these indigenous seeds is remarkable, as he refrains from using hybrid varieties that require fertilizers for growth and preservation.

He was awarded the Padma Shri in 2023 for his significant contributions to agriculture. Raman is renowned for his extraordinary work in conserving over 55 rare rice varieties on his small farm in Kammana, which he has preserved over several decades.

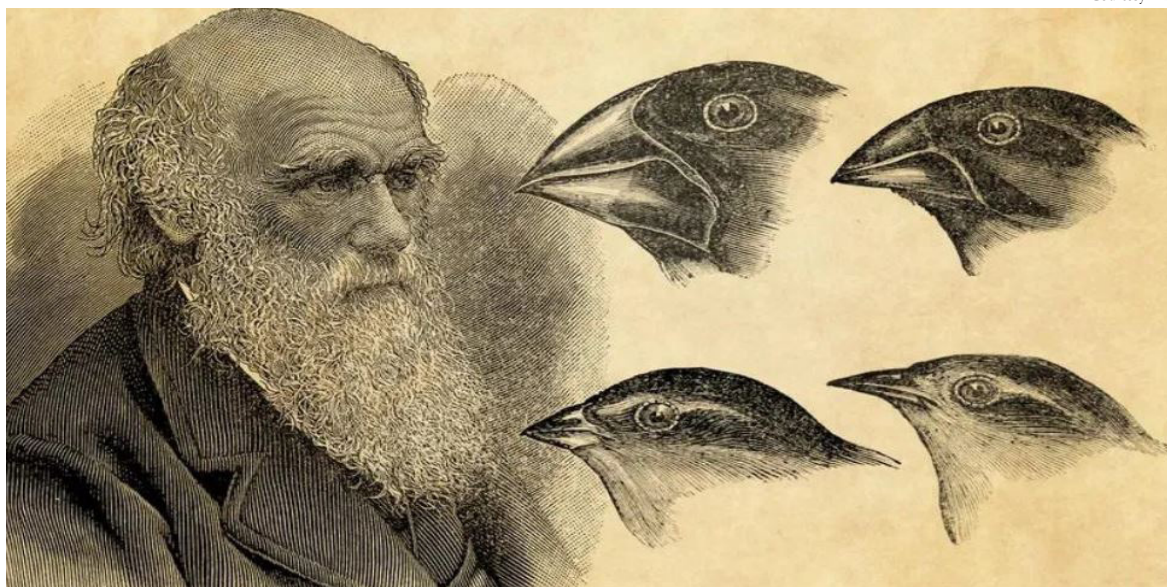
Environment Education

Darwin's Birth Anniversary 2023

On February 12, International Darwin Day is celebrated the world over to motivate people to consider and take action on the Darwinian ideals of intellectual boldness, ongoing curiosity, scientific inquiry, and thirst for truth. This day is also marked to celebrate, advocate and develop cooperation for the development of science, education, and human welfare. Many educational institutions and organisations involved in scientific pursuits celebrate by taking part in community outreach activities that highlight science as a tool for advancing humanity. At the global level, United Nations and its members commemorate Darwin Day to further global collaborations using science as a unifying language for the benefit of everyone.

Many schools and university departments across Telangana State have conducted the Darwin Day celebrations in a befitting manner. Special assemblies were conducted in schools where participants have shared information on life, contributions and achievements of Charles Darwin, and the importance of understanding Darwinian theory of evolution.

Courtesy: Encyclopedia Britannica



Nature for Kids

Sher Khan

Sher Khan in Rudyard Kipling's "The Jungle Book" is inspired by the real-life Royal Bengal Tiger. The Tiger, *Panthera tigris*, is a majestic and iconic big cat found in the Indian subcontinent. It has a striking appearance with reddish-orange fur and dark stripes, and adult males can grow up to 10 feet in length and weigh up to 250 kilograms. In Kipling's story, *Sher Khan* is portrayed as a fierce and cunning tiger, representing the dominance and fear-inducing nature in real life. In the story, *Sher Khan* - the main antagonist, wants to kill *Mongli*, while *Mongli* and his friends try to help bring peace in the jungle by curtailing the menace and mayhem unleashed by *Sher Khan*.

The Tiger is an apex predator and primarily hunts large ungulates like deer, wild boars, and buffalo. It is a solitary animal, with males occupying larger territories than females. They are highly adaptable and can thrive in various habitats, including forests, grasslands, and even human-dominated areas. It is an endangered species due to multiple threats. Habitat loss and fragmentation are significant challenges, with deforestation, agriculture, and infrastructure development destroying their natural habitats. This reduces their available territory and prey base. Poaching poses another significant threat. Their magnificent pelts and body parts are highly sought after in illegal wildlife trade markets. Conflicts with humans arise as tigers come into contact with settlements, leading to retaliatory killings.

To conserve tigers many protected areas have been recognized as Tiger reserves to safeguard their habitats. Anti-poaching measures, community engagement, and education programs are implemented to mitigate conflicts and raise awareness about tiger conservation.

Telangana has two Tiger Reserves – Kawal Tiger Reserve and Amrabad Tiger Reserve.

Our Biodiversity

Timber-yielding plants of Telangana State

Telangana State, is home to a rich assortment of timber-yielding tree species, which play a crucial role in bolstering the region's economy.

The state boasts an impressive collection of such species, including the renowned Teak (*Tectona grandis*), famous for its robustness and longevity. Additionally, Rosewood (*Dalbergia latifolia*) is highly sought after for its captivating grain patterns, while Red Sanders (*Pterocarpus santalinus*) is prized for its vibrant deep red timber.

Neem (*Azadirachta indica*) finds extensive use in construction and furniture-making due to its versatility, and Sissoo (*Dalbergia sissoo*) is valued for its durable wood. White Cedar (*Melia dubia*) offers the advantage of lightweight timber. Hardwickia binata, Indian Elm (*Holoptelea integrifolia*), and Eucalyptus species (*Eucalyptus* spp.) are also prevalent in Telangana, each serving specific purposes in industries ranging from furniture to construction and handicrafts.

The utilization of these timber resources not only fuels economic growth within the state but also promotes sustainable forestry practices and the conservation of natural resources. The wide variety of timber-yielding tree species found in Telangana showcases the region's wealth of natural resources and underscores the significance of responsible management and the prudent utilization of these valuable assets.

The protection and conservation of timber-yielding tree species in Telangana State are essential for sustaining the economy, preserving biodiversity, mitigating climate change, maintaining soil and water resources, safeguarding cultural heritage, and ensuring the availability of valuable resources for future generations. It requires collaborative efforts from government agencies, local communities, and stakeholders to implement effective conservation measures and promote sustainable management practices.



Photo: Internet Resource



Photo: C. Srinivasulu



Courtesy: Internet

Feature - Flora

Gale of Wind - *Phyllanthus amarus* Schumach & Thonn.

Classification

Kingdom: Plantae
Division: Tracheophyta
Class: Magnoliopsida
Order: Malphigiales
Family: Phyllanthaceae
Genus: *Phyllanthus*
Species: *amarus*
Authority: Schumach & Thonn.



Phyllanthus amarus, commonly known as Gale of Wind or Carry Me Seed, is a herb that holds significant value in Ayurveda, the traditional Indian system of medicine. It is native to tropical areas across Africa, North and South America, China, India, and Southeast Asia. This herb typically grows up to 75 cm in height and features stout, woody roots, branched stems, and stipulated leaves with small leaflets. The plant's flowers are minute and yellow in color. It has been widely used in traditional medicine for over 2000 years. In Ayurveda, it has been employed in the treatment of various ailments, including jaundice, frequent menstruation, gonorrhea, and diabetes. Additionally, it has been topically applied to address skin ulcers, itching, sores, and swelling. The entire plant, including its flowers and seeds, is utilized in traditional medicinal preparations. The herb has been found to possess hepatoprotective properties, making it beneficial for liver health. Its antidiabetic, antihypertensive, analgesic, anti-inflammatory, diuretic, and antimicrobial properties have also been extensively studied. Moreover, studies have highlighted its usefulness in addressing gastropathy, dysentery, diarrhea, intermittent fevers, scabies, ophthalmopathy, ulcers, and wounds.

Photo Courtesy: LivAyur

Feature - Fauna

Banded Krait - *Bungarus fasciatus* (Schneider, 1801)

Classification

Kingdom: Animalia

Phylum: Chordata

Class: Reptilia

Order: Squamata

Family: Elapidae

Genus: *Bungarus*

Species: *fasciatus*

Authority: (Schneider, 1801)



Bungarus fasciatus (Banded Krait) is found in most of India, Pakistan, Southeast Asia including Malaysia, Indonesia and southern China. Characteristically, it has golden banded appearance along with bands in black or white with red coloured triangular head and tail. They are found in various habitats such as forests, agricultural lands, termite mounds and rodent holes near to villages and water bodies. It can reach around 6 ft to 8.10 ft in length. Highly venomous, their venom contains neurotoxins, which can cause vomiting, abdominal pain, diarrhea, dizziness and even respiratory failure and death in extreme cases. They are nocturnal and shy in nature, these creatures avoid unnecessary contact with humans. They hide their heads in their coil when threatened and rarely use their venom in defense. As they are carnivorous, they mostly feed on other snakes, rodents, fish, frogs, skinks and snake eggs. Females are reported to lay eggs with a clutch size of 4 to 14. Juveniles grow to full size within 3 years and their lifespan is estimated to be around 13 years. Though their population status falls under least concern by IUCN red list, their numbers appear to be on a decline due to habitat loss. Telangana has the southernmost records of this species in India.

Photo: <https://groundreport.in>

Events

23rd Mobile Biodiversity Festival



Courtesy: Internet Resource

Deccan Development Society (DDS) celebrated the Zahirabad Mandal Jathara of 23rd mobile biodiversity festival at the Government Degree College on 22nd January 2023. The event began with traditional songs and the installation of seeds by the Sangham women farmers. DDS founding member P V Sathesh said that the mobile biodiversity festival has grown from 2 carts and one village to 16 carts and 25 villages in a span of two decades. "Every year the rate of biodiversity loss in native seed varieties is rising rapidly. I am glad that over the years, DDS has saved Zaheerabad as one of the standing agro-biodiversity hotspots in Telangana, especially for millets. It is our mission to conserve and promote the cultivation of these crops for generations to come," he said. 2023 has been declared as the 'International Year of Millet' by the United Nations following India's proposal. The growth trajectory of millets will definitely be changed due to an increase in consumption of millets among the urban population.

News

Nizamabad Environment and Wildlife Society



Photo: Internet Resource

Nature lovers, wildlife conservationists and NGO members formally launched the Nizamabad Environment and Wildlife Society (NEWS), which is expected to usher in a new chapter for the district. Joining the efforts were founders of Deshpande Foundation, Gururaj and Jaishree Deshpande. The growing reputation of Nizamabad as the home to some of the most beautiful flora and fauna, including a large number of blackbucks in the backwaters of Sriramsagar Project, was underpinned with World Wildlife Day being celebrated here on 3rd March with a message for citizens to be more nature-conscious. Wildlife enthusiasts Santhosh Kumar, Bharat Reddy, and Hiten Bhimani from the recently-launched Nizamabad Environment Wildlife Society (NEWS) have taken it upon themselves to sensitise people to the importance of wildlife conservation in the district in coordination with top officials of the State government including Mr. Hanmanthu and Assistant Commissioner of Police Kiran Kumar.

Signing Off

Unprecedented Heat: Hottest First Quarter in 174 Years

According to the National Centers for Environmental Information, globally, March 2023 was the second-warmest March in the 174-year NOAA record. The year-to-date (January–March) global surface temperature was the fourth warmest on record. In addition, a major UN "report of reports" from the authoritative Intergovernmental Panel on Climate Change (IPCC), outlines the many options that can be taken now to achieve a liveable future for all. The report also delivers a final warning on climate crisis: act now or it's too late.

Furthermore, according to the World Meteorological Organization (WMO), between 2023 and 2027, there is now a 66% chance that the planet's temperature will climb above 1.5 degrees Celsius of warming above pre-industrial levels for at least one year. The U.K. Met Office is forecasting that global average temperatures in 2023 will be at least 1.2°C (2.16°F) above the pre-industrial average. Globally, January 2023 was the seventh-warmest January in the 174-year NOAA record. Changes to near-surface air temperatures will likely influence ecosystem functioning and thus the biodiversity of plants, animals, and other forms of life. Continued global warming is expected to impact everything from energy use to water availability to crop productivity throughout the world.



Photo Courtesy: Internet Resource

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



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