

Telangana Biodiversity

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

Editorial

2020 has so far been a challenging year for humanity with the Covid-19 pandemic still troubling many parts of the world. Every piece of information and news coming during this pandemic added just not butter but crackers to the fire. We have witnessed how biodiversity and conservation-related matters have taken the least priority throughout the world. In India too we are aware that anti-nature decisions have taken its toll on habitats and biota significantly. The lockdown has shown that nature will heal once the pressures of human activities are controlled. The improvement of air quality index throughout the world during the lockdown and subsequent decline in the quality as unlocking down proceeds points that humanity is responsible for major tragic incidents witnessed over the last few decades. The human-driven climate change too has been one of the major concerns, and governments throughout the world have taken notice about this. By the end of 2020, the United Nations 'Decade on Biodiversity 2011-20' will end too. The main goal of this programme was to mainstream biodiversity at different levels. Humanity in general has not been able to slow down or revert many causes and attain various sustainable development goals. One of the major concerns relates to the projected increase in the human population that in turn will increase our dependence on natural resources. A recent study indicates that with increased effort in women's education and birth control, the human population will slow down and help in avoiding ecological collapse.



Photo: Henrik Gronvold

Briefly

COVID-19 vaccine human trial commences in India

The Maharashtra government-run KEM Hospital in Mumbai has on 26 September 2020 administered Oxford University's Covishield vaccine for coronavirus to three persons as part of human trial in India. According to Dr Hemant Deshmukh, Dean of the KEM Hospital "We have screened 13 persons so far including 10 today, of which three will get the first shot of Oxford University-AstraZeneca developed Covishield vaccine on Saturday," he said. Another person will get placebo as part of the standard testing procedure, he added. KEM is the first hospital in Mumbai where human trials of the vaccine, being manufactured in the country by Pune-based Serum Institute of India are being conducted. The Union Health Ministry has informed that India has conducted a total of seven crore COVID-19 tests till now, with the country's testing capacity having crossed 14 lakh tests daily. Those unable to afford a probable COVID-19 vaccine will get it for free and the government is considering a large immunisation programme to make the vaccine widely available, a highly placed official involved in the strategy revealed.

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Photo: Artem Podrez



Special Feature

Eturnagaram Wildlife Sanctuary

Eturnagaram Wildlife Sanctuary is one of the oldest protected areas of Telangana State. It is a part of Dandakaranya forest range in Mulugu District, and is spread over an area of 806 sq km. It is historically significant owing to the existence of fossilized trees in the caves and Sarvai precincts.

After its declaration as a wildlife sanctuary in 1953 by the former Hyderabad Government, its scenic location and the forest formation has been a paradise for the birders and nature enthusiasts. One just can't stop observing and praising the unique features of the Sanctuary with undulated steeps and slopes throughout the Sanctuary. Dayyam Vagu, a perennial water stream bifurcates the sanctuary into two halves. By virtue of its location in the heart of Deccan Plateau, it enjoys

unique climatic conditions. It is home to mammals like Leopard, Wolf, Dhole, Golden Jackal, Sloth Bear, Chousingha, Blackbuck, Nilgai, Sambar, Spotted Deer, Chinkara, Indian Gaur, Indian Giant Squirrels, many kinds of birds, and reptiles including Mugger Crocodile, Python, Cobra, Banded Krait, Giant-Leaf toed Gecko, to name a few.

The contiguous forests joining the Kawal Tiger Reserve and Eturnagaram WLS has been recognized as a tiger corridor occasionally used by tigers to seasonally visit and establish territories in the sanctuary. Over the years, the exploitation of land for agriculture, habitat loss, and infrastructure development has impacted the ecology of the area drastically and has had negative impact on its biological diversity.

Sacred Groves of Mallur: Mallur is known for its shrine, serenity, and the sacred grove. The latter is located on a small hillock - Puttakonda, on the northeastern side of the sanctuary. This grove, spread over 1500 ha, was developed as a Medicinal Plant Conservation Area. The grove is also protected by the local communities as they consider it as an abode of ancestral deities and also as a good omen for perennial water sources. The Hemachala Lakshmi Narasimha Swamy temple is also located on this hillock. This temple is said to be of ancient origin, and was built by the Chola Emperors between 1010-1200 AD. The vegetation is mostly dominated by herbs followed by trees, climbers, and shrubs. The surrounding hills encompass prehistoric megalithic dolmens.



Photo: Y. Sairam

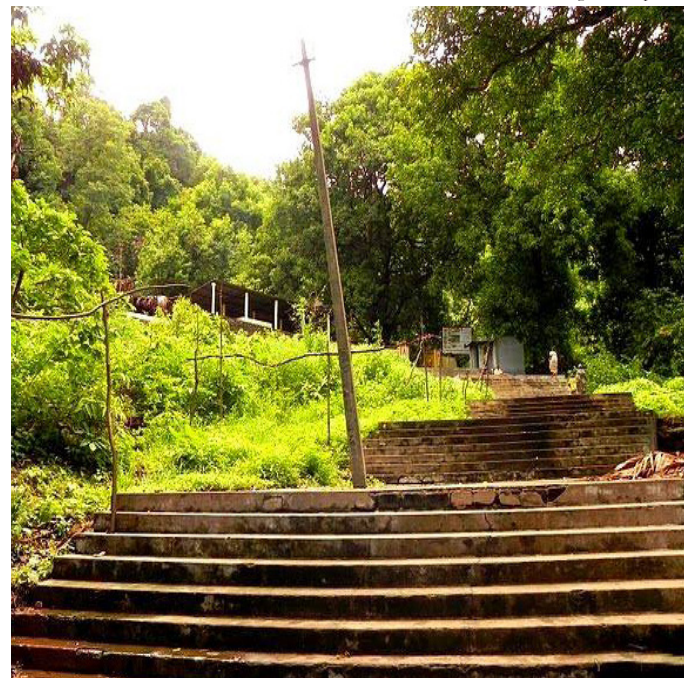


Photo: Telangana Unexplored

Sammakka Saralamma Jatara

It is one of the largest tribal religious biannual congregations in the world, where people honor the Hindu tribal deities. The congregations commemorate the fight of the mother-daughter duo – Sammakka and Saralamma, with the reigning rulers against an unjust law. According to a tribal story which dates back to 13th century, a troop of Koya tribal community while returning from a trip saw a lone girl child playing with tigers.

Inspired by her bravery the troop's head adopted her and named her as Sammakka. She was later married to a headman of neighboring tribal group and had a daughter, Saralamma. The mother - daughter duo protested against the Kakatiya kings who forced the tribes to pay

taxes. They fought bravely and reportedly lost their lives during the act. The people of Koya community residing in the heart of the sanctuary have constructed a temple as a token of gratitude.

The congregation, locally called as Jatara, gathers around 10 million people converging at one place over a period of four days who offer 'Gold' in the form of Jaggery to the deities. Due to the immense cultural importance the *jatara* has been recognized as State Festival of Telangana State. The indigenous tribes, the Koyas, the Nayakpods pray to the jungle goddesses during the Jatara days. However, worshipping the jungle goddesses would mean so much more if alongside worshipping, issues such as forest area

encroachment and habitat degradation during these days, are also addressed so as to conserve the serenity of the surrounding forest.



Photo: Satish Lal

Threatened Taxa

Plant - *Brachystelma nallamalayanum* K. Prasad & B.P.R. Rao



Photo: K. Prasad

Taxonomy Order Gentianales; Family Apocynaceae.

Geographic Range Endemic to peninsular India; distributed in Andhra Pradesh and Telangana State.

State Distribution Rare; reported only from Mannanur, Nagarkurnool district.

Population Nothing is known about its population status or trends.

Habitat & Ecology Erect herb, found amidst grasses on open hill slopes of dry deciduous forests at an altitude between 550–600 m asl, associated with *Cymbopogon coloratus* and *Heteropogon contortus*.

Major Threats Threats to the species are not known, but it is assumed that it is threatened due to habitat fragmentation and habitat loss.

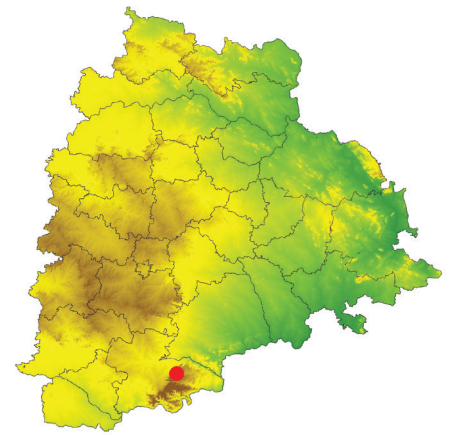
Use & Trade The species is not in the trade.

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 forests. It occurs in Amrabad TR. It is threatened by habitat fragmentation and loss. The estimated number of localities 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 has not been assessed. In Telangana State, this species is assessed as Critically Endangered, with the criteria B1ab(iii)+2abc(iii)+D2.

Distribution in Telangana State



Animal - *Gyps indicus* (Scopoli, 1786)



Photo: Pranjal J. Saikia

Taxonomy Class Aves; Order Accipitriformes; Family Accipitridae.

Geographic Range Distributed from southeast Pakistan to India and Nepal. In India, widely distributed.

State Distribution Very rare; known earlier from many localities. Only one breeding population in Bejjur, Komaram Bheem Asifabad district is currently known.

Population Less than 20 individuals of this species may occur in Telangana State.

Habitat & Ecology Earlier this species was reported visiting carcasses in cities, towns and villages, found near cultivated areas, and in open and wooded areas.

Major Threats Threatened due to feeding on livestock carcasses treated with the drug diclofenac and other NSAIDs and excessive use of pesticides.

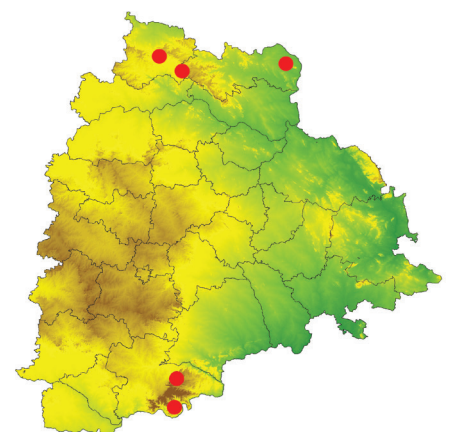
Use & Trade The species is not in the trade.

Conservation Measures The breeding population at Bejjur is protected and monitored by the Telangana State Forest Department.

Remarks

This taxon is currently known from the forested tracts of Komaram Bheem Asifabad district. It is threatened majorly due to feeding on livestock carcasses treated with the diclofenac and other NSAIDs, and excessive use of pesticides. Historically, it was a widespread species. Currently, it is known only from a single location. At the global level, this taxon has been assessed as Critically Endangered A2bce+4bce.

Distribution in Telangana State



Pioneers in Conservation

Byalla Sadasivaiah PhD

Dr. Sadasivaiah is an Assistant Professor of Botany at Dr. BRR Government College, Jadcherla in Mahabubnagar District. For his doctoral studies, he worked on 'Herbaceous plant resources, species richness of Nallamalla hills' and for his Post-Doctoral research, he worked on Floral and Faunal composition of Thummalapalli Uranium Mining Area. During this period, he has discovered a few new plant species and has also reported new occurrence records for both flora and fauna. After gaining a thorough understanding of the global plant biodiversity and studying the threats to distribution of plant species, he followed his passion of *ex situ* conservation and hence, took an initiative to establish a botanical garden in the premises of Dr. BRR Government College. The botanical garden, which is in the shape of



Photo: A. Ramakrishna

geographical map of Telangana State, is spread over an area of about 3.75 acres. The Telangana Botanical garden is a safe haven for plant diversity, with around 1800 individual plants of around 378 species. It includes sections for plant species of different categories, like, ornamental, vegetable, medicinal, threatened, endemic, fruit arboretum, forest plants, and xerophytic plants. For his continuous efforts on biodiversity conservation and establishment of Botanical Garden, he has been commended immensely by Sri Navin Mittal IAS, Commissioner, Collegiate Education to the Hon'ble Chief Minister of Telangana State. The Government has also sanctioned an amount Rs. 5.0 lakh for the development of the Telangana Botanical Garden. He also received the Best Teacher Award 2020 from the Telangana State Government. We wish him success for his future endeavours to conserve plant diversity in Telangana State.

Environment Education

Dragonfly Festival 2020

On 17 August, 2020, World Wide Fund (WWF India), in collaboration with Bombay Natural History Society (BNHS) and Indian Dragonfly Society (IDS) launched the 3rd edition of Dragonfly Festival 2020 - named *Thumbimabatosav - 2020*. The festival, celebrating the Helicopters of Nature, is a pan-India fest dedicated to disseminating information on ecological importance of dragonflies and their conservation. The festival started with its first edition in the year 2018, aiming to educate and notify the integral role that dragonflies and their lesser known siblings, damselflies play in the environment by acting as efficient bio-indicators. Many awareness drives were conducted to help build a connection between these beautiful creatures and humans and underpinning the need to conserve them. This year's edition, however, was virtual due to the ongoing pandemic. The festival included fun filled activities pertaining to wildlife, interactive webinars, competitions on photography, art, quizzes, and storytelling.

Courtesy: WWF-India



Nature for Kids

Odonates - Our saviors

Odonata is one of the smallest insect order with roughly 6300 species worldwide. Odonates includes both dragonflies and damselflies which are well-known but poorly understood. They are the insects of great economic importance, as they are predators of disease causing vectors and agricultural pests. Their larvae are important as top predators in aquatic ecosystems. Odonates are indicators of healthy aquatic ecosystems. They have been depicted in mythology and folklore of many cultures and are the subjects of beautiful art.

What do they eat?

Odonates feed on many insects, including disease causing insects - mosquitos and houseflies, and crop pests. Both the adult and larvae are highly predaceous, generalists and tend to feed on most abundant available prey and exploit dense swarms of insects



Photo: Vansh Sharma

belonging to the family Diptera.

Bioindicators and Ecosystem services

The dragonflies affect both the terrestrial and aquatic ecosystems. They are good indicators of the quality and integrity of aquatic habitats including the riparian or littoral areas which led to 'Dragonfly Biotic Index', an excellent index of aquatic habitat quality and its characteristics. Furthermore the odonates have inspired and often been in part of, designs for and experiments on unusual modes of flight and visual flight control. Several species of dragonfly are known to collect in large swarms. You can see them flying over waterbodies and open spaces.

Life cycle

Most dragonflies live for about 6 months. At the beginning of their life cycle they are eggs, then they live as larvae or nymphs, and they finally develop into adults. Though most dragonflies don't live too long, there are some larger dragonflies that live for 6 or 7 years! Most of this time is spent living as a larva or nymph, beneath the surface of water, catching other insects.

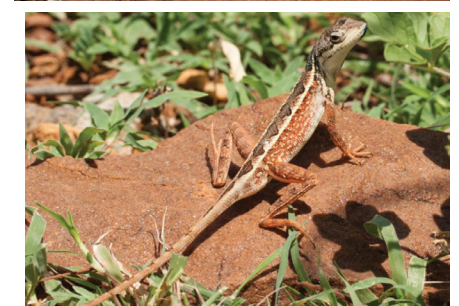
Our Biodiversity

Agamids of Telangana State

Agamidae is a family of diverse group of lizards, often referred to as old world iguanids, with around 530 species belonging to 63 genera. Lizards are widespread throughout the Palearctic and Palearctic regions, though their range does not extend far into Europe. They have been recently introduced to Madagascar. They are found in a variety of forms such as terrestrial, tropical forest dwellers, terrestrial desert dwellers, semiaquatic, and borrowing forms. Some run bipedally across the surface of water, and some forms glide from one tree to another.

In India, the family is represented by around 72 species in 21 genera. In Telangana State, 6 species belonging to 4 genera are known. These include Roux's Forest Lizard, Oriental Garden Lizard, Peninsular Dwarf Rock Agama, South Indian Rock Agama, and two species of Fan-throated Lizard. A recent regional level assessment for the Telangana Threatened Taxa has categorized Roux's Forest Lizard as Critically Endangered, while the Peninsular Dwarf Rock Agama and South Indian Rock Agama have been listed as Vulnerable species. These are threatened due to stone quarrying and blasting activities, mining and pollution.

Photo: Raju Kasambe, Saumen Pal, JM Garg, Akshay Khandekar, V. Deepak



Feature - Flora

Peepal - *Ficus religiosa*

Classification

Kingdom: Plantae
Division: Magnoliophyta
Class: Magnoliopsida
Order: Rosales
Family: Moraceae
Genus: *Ficus*
Species: *religiosa*
Authority: L.



Ficus religiosa L. is an evergreen or deciduous, perennial, deep rooted, irregularly shaped tree native to Indo-China and the Indian subcontinent. It has also been introduced in other parts of the world. It can tolerate various climatic conditions and is known to grow in various soil types. Commonly known as *Peepal* or 'sacred fig' tree, it is a medium to large tree or strangling climber that can grow to 20–25 m, and can reportedly live to over 3000 years. The tree is considered sacred by Hindus and is commonly planted near temples. Women worship this tree as a symbol of fertility. It is also grown as an ornamental and avenue tree. It is harvested in wild for its edible fruit. It has many medicinal uses including relief from foul taste, toothache, thirst, biliousness, diseases of blood and heart, and is known to have digestive and laxative properties. Dried fruit is used to cure asthma; seeds are useful in urinary discharge, and young bark is an astringent. Leaves are lopped as fodder for elephants, camels, goats, and cattle. The tree also provides low grade timber that is mainly used in making cheap boarding, yokes, spoons, and bowls.

Photo: Pranav Vyas

Feature - Fauna

Indian Gaur - *Bos gaurus*

Classification

Kingdom: Animalia

Phylum: Chordata

Class: Mammalia

Order: Artiodactyla

Family: Bovidae

Genus: *Bos*

Species: *gaurus*

Authority: Smith, 1827



The Gaur (*Bos gaurus* Smith, 1827), also called as Indian Bison, is native to South and South-east Asia, distributed in Bhutan, Cambodia, China, India, Lao People's Democratic Republic, Malaysia (Peninsular Malaysia), Myanmar, Nepal, Thailand, and Viet Nam. It is possibly extinct in Bangladesh and Sri Lanka. It is categorized as Vulnerable by IUCN and is protected as Schedule – I species in Indian Wildlife (Protection) Act, 1972. The Gaur prefers forested tracts, savanna, shrubland, and grasslands. It lives in herds of minimum five to maximum 20 individuals. Usually herbivore - grazes and browses, reportedly eating mostly young green grass but also leaves, fruits, twigs, bark of various woody species, coarse dry grasses, and bamboo. The Gaur is often termed as a model of strength and symmetry and is known for its formidable appearance. In Telangana State, it is known as *Adavi Dunna*. The species is under threat due to loss of habitat, mining, residential & commercial development, hunting, and competition with domestic livestock.

Photo: Sujath Mohammed

Events

Summit on Biodiversity



Credit: <https://www.cbd.int/article/Summit-on-Biodiversity-2020>

The United Nations Summit on Biodiversity conveyed an Urgent Action on Biodiversity for Sustainable Development on 30 September, 2020. The report summarizes that the biodiversity is declining at an unprecedented rate and the pressures driving this decline are intensifying, posing grave danger to human health and prosperity. It urges for an urgent need to conserve biodiversity and work towards the sustainable development and restoration of degraded ecosystems. The Covid-19 pandemic highlighted the grave importance of developing harmony between nature and people by mitigating the effects of continued biodiversity loss and the degradation of ecosystems.

News

Snake Rescue Centre inaugurated at Bowrampet



Photo: Ramarao Gajula

The Telangana Forest Department, in collaboration with the Friends of Snakes Society (FoSS), Hyderabad has inaugurated an exclusive rescue and rehabilitation centre for snakes at Bowrampet in Medchal District on the World Environment Day - June 5 2020. Forest minister Mr. A. Indrakaran Reddy along with Mrs. R. Sobha PCCF, Mr. Venkateshwar, District Collector, Medchal Malkajgiri, Mr. Avinash Viswanathan, General Secretary FoSS, Dr. C. Srinivasulu, Director CBCS OU and other officials/dignitaries of the state were present during the inaugural. FoSS is known for its snake conservation activities by conducting awareness programmes, and rescuing of snakes within the city precincts. The organization is also involved in research on ophiofauna in the form of scientific writings.

Signing Off Silver lining...

Conflict, climate instability and the COVID-19 pandemic are putting the health and well-being of all children and adolescents at risk. The COVID-19 crisis, in particular, is exacerbating existing inequities, with reported disruptions in essential health interventions disproportionately impacting the most vulnerable, women and children. At the height of pandemic lockdowns, schools were closed in 192 countries, affecting 1.6 billion students. Domestic violence and abuse of girls and women increased. Poverty and hunger are also on the rise.

Protect the Progress: Rise, Refocus, Recover, 2020 highlights that since the Every Woman Every Child movement was launched 10 years ago, spearheaded by the United Nations Secretary-General, there has been remarkable progress in improving the health of the world's women, children and adolescents. For example, under-five deaths reached an all-time low in 2019, and more than 1 billion children were vaccinated over the past decade. Coverage of immunization, skilled birth attendant and access to safe drinking water reached over 80 per cent. Maternal deaths declined by 35 per cent since 2000, with the most significant declines occurring from 2010. An estimated 25 million child marriages were also prevented over the past decade.



Photo: Anna Shvets

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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