

Telangana Biodiversity

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

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Editorial

The second issue of the newsletter of Centre for Biodiversity and Conservation Studies, Osmania University, we present the news on the impact of COVID-19 pandemic on conservation issues; a feature on Kawal Tiger Reserve; insights on two critically endangered species in Telangana State - *Anodendron paniculatum* (Plant) and *Geochelone elegans* (Reptile); about Dr. Bhargavi Srinivasulu's contribution to conservation of bats; news on environmental education; the importance of bees; the canid diversity of Telangana State; information on state flower and state bird; and brief notes on international biodiversity day celebrations, impact of pandemic on wildlife and COVID-19 - a pandemic.

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Photo: Hrishikesh Sabnis

Briefly

COVID-19 disrupts a major year for biodiversity policy

2020 was shaping up to be a good year for global policy on biodiversity. With momentum building from dire reports on biodiversity loss and climate change, policymakers were set for a packed schedule of meetings and negotiations to hash out what the future will hold for Earth's ecosystems. The COVID-19 pandemic has now scrambled that schedule. Today, the IUCN announced that its World Conservation Congress, scheduled for June in Marseille, France, has been postponed to January, 2021. The news comes after a string of announcements delaying key U.N. summits on biodiversity and climate change, among other disruptions.

"This is a situation which none of us expected," said Elizabeth Maruma Mrema, acting executive secretary of the U.N. Secretariat of the Convention on Biological Diversity (CBD). "The situation has made it impossible for what we planned to continue in the same way."

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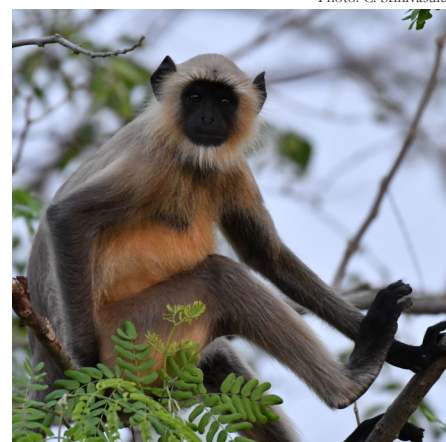


Photo: C. Srinivasulu

Special Feature

Kawal Tiger Reserve

Kawal Tiger Reserve (KTR) is spread over parts of two districts - namely, Nirmal and Mancherial in Telangana State. It is located between 78.558°E, 19.274°N to 79.232°E, 19.009°N and 19.346°N, 78.833°E to 18.927°N, 79.134°E, and is typical representative for the biodiversity of Deccan Plateau. Established as a Game Reserve in 1965, it was later declared as a Protected Area (PA) in 1999 under Wildlife Protection Act, 1972 and was named Kawal Wildlife Sanctuary. In 2012, it was recognized as a Tiger Reserve owing to being a potential tiger territory and need to protect the natural habitat of the tigers. It stretches from Sahyadri Hill ranges to Tadoba Forest in Maharashtra, and covers 892.23 km² (Core) and 1123.21 km² (Buffer) zones area.

The forest is interspersed with many villages and acts as a source of livelihood

for the tribal communities residing in and around the reserve. The reserve has a tropical dry-deciduous forest, which is an excellent mosaic of wildlife habitat in the form of dense forest, open grasslands, and water bodies. Due to varied topography and diverse habitats, the reserve harbors rich flora (about 673 species) and fauna (about 422 vertebrate species). The forest consists of dominant vegetation of teak (*Tectona grandis*) mixed with bamboo (*Bambusa arundinacea*/*Dendrocalamus strictus*), beedi (*Diospyros melanoxylon*), *Terminalia*, *Cassia*, etc. Important mammals found in the area are leopard (*Panthera pardus*), tiger (*Panthera tigris*), sloth bear (*Melursus ursinus*), jungle cat (*Felis chaus*), dhole (*Cuon alpinus*), chital (*Axis axis*), nilgai (*Boselephas tragocamelus*), gaur (*Bos gaurus*), chowsinga (*Tetracerus quadricornis*), and wild boar (*Sus scrofa*).

The area is also well-fed by river Kadem, a tributary of the river Godavari, constituting to its high ecological value. The reserve is also rich in cultural heritage as it is inhabited by many aboriginal/traditional tribal groups, including the Raj Gonds, the Nayakpods, the Kolams, the Thotis, the Pardhans, the Lambadas, and people belonging to some marginalized sections. These people are dependent upon the reserve forest for various daily activities like agriculture, rearing cattle, collection of non-timber forest products (NTFPs) under the supervision of the forest authorities. These tribals people co-exist with the wildlife of the forest and present an example of harmonious human-wildlife relationship in natural environment.



Photo: G. Chethan Kumar



Photo: G. Chethan Kumar

Kawal Tiger Reserve has been established and maintained for the protection of biodiversity of Deccan Plateau of Sahyadri Hill range and the concerned authorities have been working actively to achieve the same objective. The antelopes of Kawal (Black Buck, Nilgai, Chowsinga, and Gazelle) contribute to the uniqueness of the reserve which, along with the deer (Chital and Sambar), are primary and preferred prey species for both tiger and leopard. Extensive camera trapping by various researchers and forest authorities have been aiding the monitoring of the wildlife in the reserve. This has helped in making of corridor maps and GIS maps of tiger movement.

Many activities have been undertaken to achieve the Aichi Targets of Biodiversity, in the area, which includes construction of

saucer pits in the fringe areas and check dams, natural water source development, grassland development, and removal of weeds, like *Lantana* and *Parthenium*.

Base camps, check posts, and patrolling camps have been constructed for proper surveying and monitoring of the wildlife. Anti-poaching squads have been formed to stringently act upon the issues of poaching and smuggling. Many awareness programs are conducted to spread awareness among common people about human-animal conflicts.

However, certain issues like extensive sand-mining, encroachment, and habitat destruction due to anthropogenic activities still need to be addressed.



Photo: Tribhuvan Tiwari

"Love and respect for the forest is the basis of our life, our gods live in forests and forests provide all that we need to survive. We protect our forests and our god (forests) protects us."

- Nayakpod sentiment

Threatened Taxa

Plant - *Anodendron paniculatum* (Roxb.) A. DC.

Photo: C. Sudhakar Reddy



Taxonomy Order Gentianales; Family Apocyanaceae.

Geographic Range Widely distributed species found throughout south and southeast Asia. In India, it is distributed throughout east, northeast and peninsular India.

State Distribution Very rare climber; found only in Mallur in Jayashankar Bhupalapalli district.

Population Nothing is known about its population status or trends.

Habitat & Ecology Large woody climber, found in the moist deciduous forests.

Major Threats Threatened due to habitat loss and fragmentation.

Use & Trade The species is not in the trade.

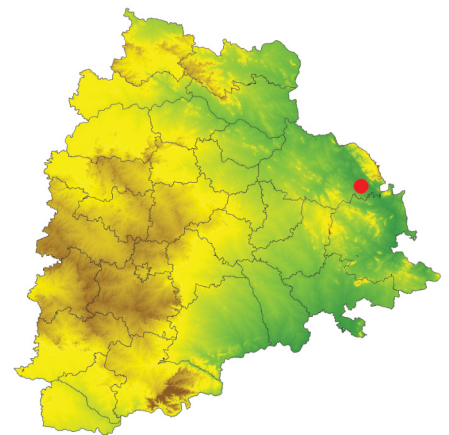
Conservation Measures No species-specific conservation measures are in place.

Remarks

This species is found in moist deciduous forests. It does not occur in any protected areas. It is threatened by habitat loss and fragmentation. 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)+2ab(iii)+D2.

Distribution in Telangana State



Animal - *Geochelone elegans* (Schöepff, 1795)

Photo: Jan Sevcik



Taxonomy Class Reptilia; Order Testudines; Family Testudinidae.

Geographic Range Endemic to south Asia. In India, it is distributed in two broadly disjunct areas – northwestern India, and eastern and southern areas.

State Distribution Occasional; widely distributed in Hyderabad, Medchal-Malkajgiri, Nagarkurnool, Nalgonda, and Warangal Rural districts.

Population Nothing is known. Sightings of this species have declined over the years.

Habitat & Ecology Found in varied habitats, namely scrub forests, grasslands edges of desert, agriculture land and plantations, and near human habitation. It is an omnivore feeding on vegetation along with animal matter. It is oviparous, and lays 2-10 eggs in two clutches.

Major Threats Threatened due to illegal collection for national and international pet trade. It is also collected for local sustenance, and is also threatened due to habitat loss and fragmentation.

Use & Trade This species is in pet trade, and collected for medicine and superstitious beliefs.

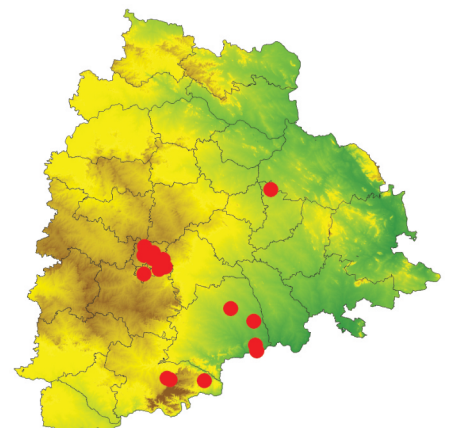
Conservation Measures This species is included under Appendix II of CITES and Schedule IV of the Wildlife (Protection) Act, 1972. Occurs in many protected areas.

Remarks

This taxon is found both in forested areas and also around urban dwellings. It occurs in Amrabad TR and Kawal TR. It is threatened by illegal over-harvesting for pet trade. It has been reported from many locations. The estimated extent of occurrence (EOO) in Telangana State is <10000 km², and the area of occupancy (AOO) is <500 km². There is an inferred continuing decline in the area, extent, and quality of suitable habitat. At the global level, this species has been assessed as Vulnerable.

In Telangana State, this species is assessed as Critically Endangered, with the criteria B1ab(iii)+2ab(iii).

Distribution in Telangana State



Pioneers in Conservation

Bhargavi Srinivasulu PhD

Dr Bhargavi Srinivasulu is a Post Doctoral Fellow under the UGC's Woman Scientist Scheme at Department of Zoology, Osmania University. She worked for her PhD on pestiferous birds and their management in agroecosystems, and shifted her research focus to bats - a much neglected yet important field of study in zoology - in 2003.

She has executed a number of projects on bats to further the understanding of their diversity, distribution, biology, and ecology. Her research has indicated that the insectivorous bats help in reducing disease-carrying insects including and especially mosquitoes. She has conducted research in many protected and non-protected areas in India including Andaman Islands to study bats. Her current research focuses on bat study with an emphasis on conservation, community

building, information dissemination, awareness and outreach. She has conducted outreach activities at various levels, from local to international, for creating awareness about the ecological importance of bats, threats they face and their conservation. In 2013, she led a team of researchers from Osmania University who have rediscovered the last remaining population of the Kolar Leaf-nosed Bat near Hanumanhalli in Kolar district of Karnataka. After years of continued research at the site and surrounding areas, talking to stakeholders at all levels - from villagers to district administration and forest department staff, creating awareness amongst common public about the threat to the last known population, the team was successful in getting the mining activity halted in 2015 and the place was declared as Hanumanhalli Conservation Reserve in January 2019. A true 'Bat-woman of India' indeed with deep understanding and love for bats.



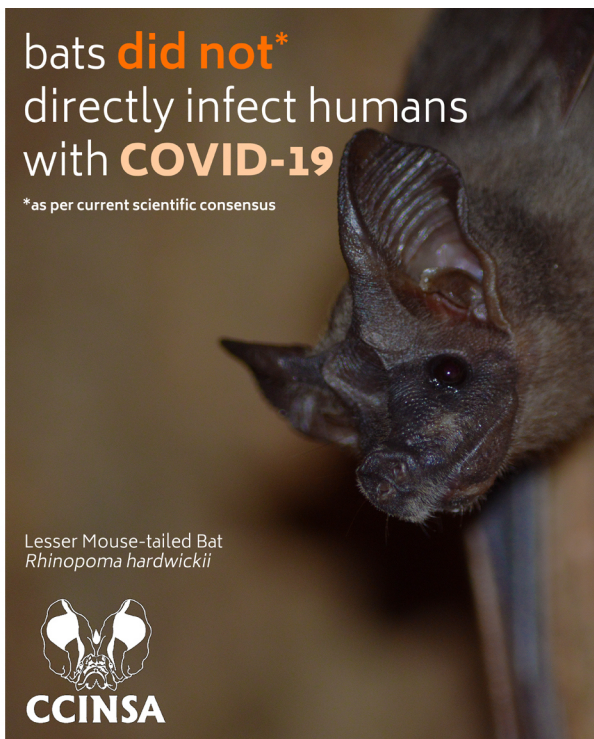
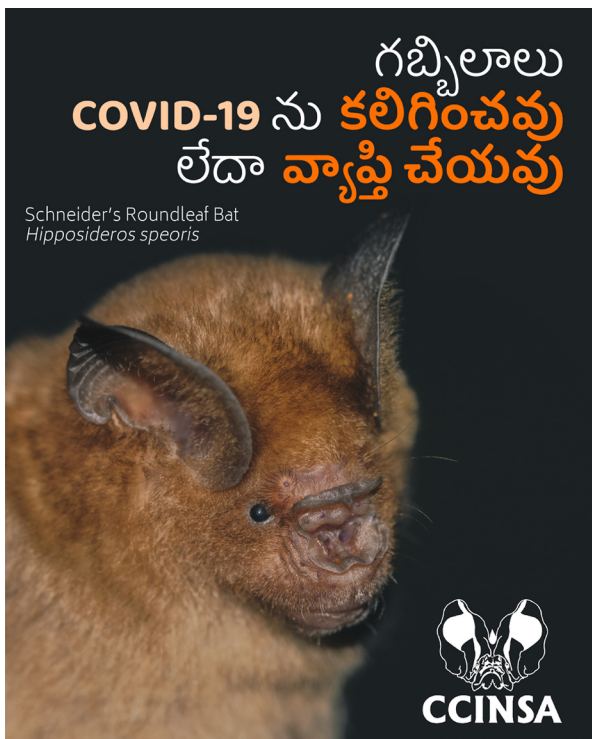
Photo: Tariq Ahmed Shah

Environment Education

Bats do not cause COVID – an online campaign

With the beginning of the pandemic, many unverified news and social media posts started to emerge around the world linking bats with the spread of COVID. Consequently, culling of bats commenced at many places, mainly due to apathy towards bats and lack of awareness amongst general public. As an effort towards curbing such activities, an online awareness campaign was conducted by Centre for Biodiversity and Conservation Studies (CBCS), Osmania University, in which awareness posters in 12 different languages of South Asia were posted on online platforms to raise awareness about the fact that bats do not cause COVID and also about the significant ecological services they provide in the ecosystem.

Photo: Aditya Srinivasulu



Nature for Kids

Buzz about the BEES

When we talk about pollination in the terrestrial ecosystem, we think mainly about the bees but pay little attention to the fact that they are a sign of well-functioning ecosystems. World Bee Day is celebrated on 20th of May every year to raise awareness about the ecological importance of bees, beekeeping, and their protection.

World's best pollinators!

While bees hop from one flower to another, they help in the transfer of pollen, thereby pollinating flowers so that they can grow and produce fruit. There is a reason they are known as busy bees! They pollinate millions of plants each year including flowering plants and agricultural crops. In addition to their great numbers, their morphology and behavior of foraging on only one species at a time makes them the most efficient pollinators.



Photo: David Hablützel

Food Security

Bees are responsible for a third of world's food production. They provide high-quality food that includes honey, royal jelly, and pollen. Many products used in healthcare and other sectors, like beeswax, propolis, and honey bee venom come from bees.

Important part of the food-chain

There are numerous species of birds, including bee-eaters, swifts, wood-peckers, some other animals like bears, honey badger and some spiders that are dependent on bees as their food source.

Bioindicators!

Bees can indicate the health of an ecosystem, thus acting as bio-indicators. The fluctuations in the bee mortality rate in a particular area and/or the quality of honey produced may indicate toxicity in the environment.

Protection of bees and knowing their significance to both agricultural and non-agricultural systems is of importance, calling for raised awareness about these stinging creatures. Without bees we will not have flowers and fruits!

Our Biodiversity

Canids of Telangana

The State of Telangana is home to four species of canids, namely, *Canis aureus* (Asiatic Jackal), *Canis lupus* (Grey Wolf), *Cuon alpinus* (Asiatic Wild Dog), and *Vulpes benghalensis* (Indian Fox). While the Asiatic Wild Dog, also known as Dhole, has its distribution restricted to the forests of protected areas, other three species of canids are widely but unevenly distributed throughout the Telangana State.

A recent regional level assessment has categorized the Asiatic Jackal, Grey Wolf, and Asiatic Wild Dog as 'Endangered', and Indian Fox as 'Vulnerable'. Although found in many places Asiatic Jackal populations too are dwindling, however they are doing good in protected area network in Telangana State.

Canids prefer habitats such as open areas, grasslands, and scrublands. Due to incessant habitat loss and degradation, depletion of preferred prey species, and human-animal conflicts, the population of canids is decreasing at an alarming rate.

Canids

Canids are dog-like carnivores that belong to family Canidae under order Carnivora. These are generally known as canines and include dogs, wolves and foxes. They are found on all continents except Antarctica. The largest canid is the Grey Wolf (6.6 feet tall) and the smallest is the Fennec Fox (9.4 inch tall).

They are mostly social animals that live in family units or small groups. They communicate with scents and vocalizations. The domestic dog, thought to have evolved from wolf stock, is the only canid to have long association with humans. Fossil evidence suggests the association of wolves with humans approximately 36000 years ago when humans were still hunters and gatherers.



Photo: Bishnu Sarangi



Photo: Arindam Aditya



Photo: N. Kesavamurthy



Photo: M.V. Shreeram

Feature - Flora

Tangedu - *Senna auriculata*



Classification

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Fabales

Family: Fabaceae

Genus: *Senna*

Species: *auriculata*

Authority: (L.) Roxb.

Tanner's Cassia, *Senna auriculata* (L.) Roxb., is an evergreen shrub/small tree which grows up to 7m tall. It is a native of South Asia, but introduced in many countries in the African Continent. The leaves are alternate, stipulate, paripinnate compound, with 16-24 very shortly stalked leaflets. Tanner's Cassia has a smooth reddish brown bark and the trunk has many ascending branches. The end of the branches bear bright yellow flowers in racemes. Fruit of this tree is a 7-12 cm long, flat brown pod. This shrub/small tree is used extensively for landscaping roadways and gardens. It is the state flower of Telangana and is called 'Tangedu' locally. Tangedu flowers hold great cultural significance in the state of Telangana. Newly-weds worship and offer *bonam* to goddess Parvathi under the Tangedu tree. During *Bhadrapada*, the lunar month, the flowers are used for *Bathukamma* celebrations. In Ayurveda, the root of this plant is used in a decoction for fevers, diseases of the urinary system and constipation. The leaves have laxative properties. The plant has also been reported to treat hyperglycemia and associated hyperlipidemia. The powdered seed is also applied to the eye, in case of chronic purulent conjunctivitis. This plant continues to be a topic of interest/focus for researchers to corroborate its effectiveness for its various medicinal properties.

Photo: Thamizhpparithi Maari

Feature - Fauna

Indian Roller - *Coracias benghalensis*

Classification

Kingdom: Animalia

Phylum: Chordata

Class: Aves

Order: Coraciiformes

Family: Coraciidae

Genus: *Coracias*

Species: *benghalensis*

Authority: (Linnaeus, 1758)

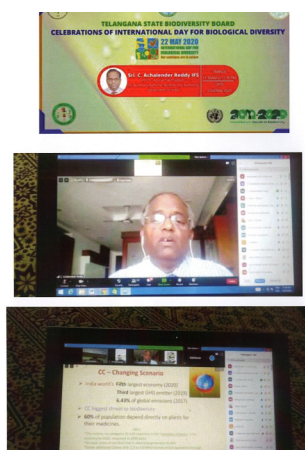
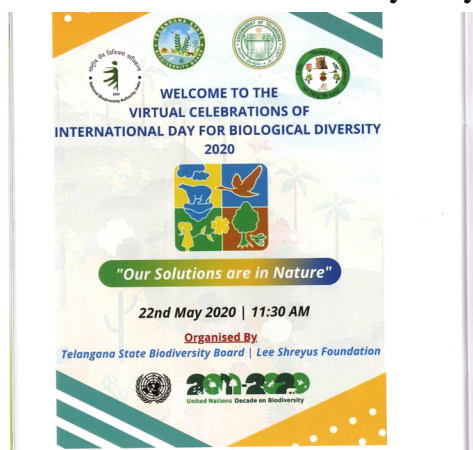


The Indian Roller, *Coracias benghalensis*, has its distribution in parts of South-west Asia and the Indian Subcontinent, ranging from Iraq and United Arab Emirates through the Indian Subcontinent, including Sri Lanka, Lakshadweep islands, and Maldives. It is a brightly coloured bird, about 31 cm in length, with shades of blue on the wings, tail, belly, and crown. The colours are more prominent while the bird is in flight. There is no sexual dimorphism and presence of longitudinal white streaks on the throat and breast is a conspicuous character. Usually silent, but produces harsh *chakh-chakh-chakh* notes and is more vocal in the breeding season producing shrieking notes during courtship display. Cultivated areas, scattered forest, and grasslands are preferred habitats. Mostly seen in agricultural landscapes, sitting on exposed perches including electric wires, bare branches, and small bush tops. It is the state bird of Telangana and called 'Palapitta' in Telugu. This bird has religious and cultural significance as the sighting of Indian Roller on Dushhera is said to be a good omen.

Photo: Narahari Kanike

Events

International Biodiversity Day

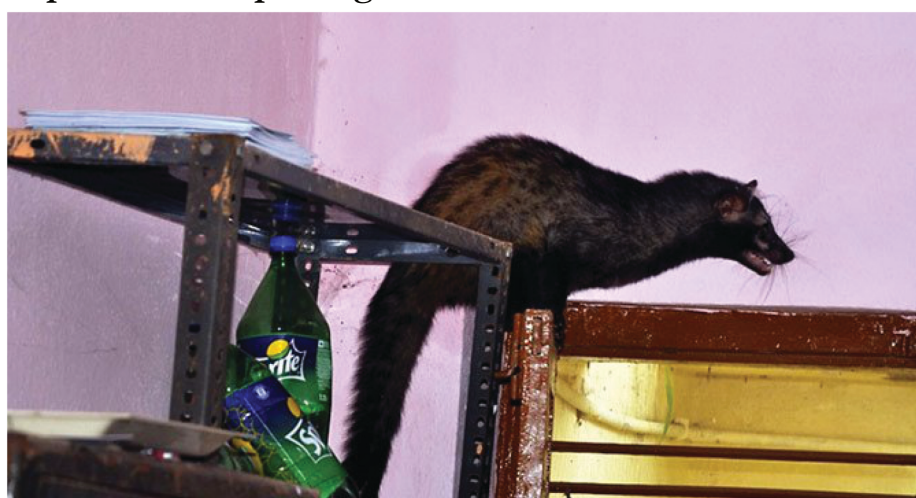


Courtesy: Telangana State Biodiversity Board

The International Biodiversity Day, was celebrated on 22nd May, 2020 by Telangana State Biodiversity Board (TSBDB) through conduct of webinars on Women in Biodiversity, Science, Traditional Knowledge, Healthy Food, Agriculture and Biodiversity, and Biodiversity Conservation. In compliance with the theme “Our Solutions are in Nature”, the participants addressed the significance of working together at all levels to mitigate biodiversity loss. Around 100 students joined webinars and 70 students presented their ideas on the said

News

Is pandemic impacting wildlife movement?



Courtesy: Telangana Today

The ongoing pandemic compelled people to stay in their homes thus restricting their movement. This situation, in a way, acted as a boon to the wildlife, as many wild animals were spotted in close vicinity of human settlements.

Asian palm civet at Siddipet, Rusty-spotted cat in Kamareddy District, two sloth bears in Kagaznagar town, and a leopard in the outskirts of Hyderabad city were spotted during this period.

Forest officials also observed an increase in the number of wild animals crossing the roads in Amarabad mandal. These incidents clearly underpin the issue of anthropogenic habitat loss of wildlife.

Signing Off

COVID-19 : A pandemic broke out!

On 24 March 2020, the Government of India under Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India. To curb the transmission of the COVID-19 in India, the government has extended the lock down in a phased manner [Phase 1 (25 March – 14 April), Phase 2 (15 April – 3 May), Phase 3 (4–17 May), and Phase 4 (18–31 May)] until 31 May 2020. The first phase of lockdown was placed when the number of confirmed positive coronavirus cases in India was approximately 500. On 30 May, it was announced that lockdown restrictions were to be lifted from then onwards, while the ongoing lockdown would be further extended till 30 June for only the containment zones. Services would be resumed in a phased manner starting from 8 June. It was termed as "Unlock 1.0", which lasted up to 30 June 2020. As of this date India had reported 5,66,840 confirmed COVID-19 cases and 16,893 deaths due to COVID-19.



Courtesy: Nandhu Kumar

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



Centre for Biodiversity and Conservation Studies

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