

Telangana Biodiversity

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

Editorial

The recent forest fires in Telangana State have raised concerns about the well-being of its rich biodiversity. Forest fires may have negative impact on the flora and fauna not only in protected areas but also in forest fringes. With the development of irrigation projects and discovery of new species of fishes in the Pranahita basin, it is important we understand the impact of development in this region and the importance of Pranahita Wildlife Sanctuary in conserving unique biodiversity. In this issue we learn about *Albizia thompsonii* and *Rynchops albicollis* - two threatened taxa that need immediate conservation action. We also learn about the life and contributions of Dr. Sosamma Iype who has been honoured with Padma Shri for her work in conserving rare breed of cattle. We will learn about the largest lizard of the world—the Komodo Dragon. As a part of Jungle Book series of “Nature for Kids” we learn about the hypnotizing Kaa. Additionally we will increase our understanding on Plumed Cockscomb and Indian Python in the Features section. We will also learn about of the herpetofauna of Telangana State.

In the pursuit of bringing back the cheetah, the possibility of reintroducing them in to India has been a topic of discussion. While the idea is captivating, it requires careful planning, considering factors such as habitat suitability, prey availability, and potential conflicts with human activities. It is pleasing to note positive changes hapening throughout the world due to collective conservation efforts, ensuring the long-term health and resilience of life.



Courtesy: Petr Ganaj

Briefly

Forest fires across Telangana

Forest fires are the fire in the forest that mostly occurs during summers in grasslands or dry deciduous forests. Not always disadvantageous as they rejuvenate the soil quality, kill pests, and diseases. Furthermore, it clears the field for more stronger and resilient species to flourish. But all of this can happen if the fire does not occur as a result of climate change and man-made accidental and intentional fires. Around 340 fire accidents and 1,141 large forest fires have been reported by Forest Survey of India by March of this year. Telangana being part of the deccan plateau with a large percentage of dry deciduous forests is very prone to forest fires. From 2020 to 2021, 50 percent increase in forest fires have been recorded, out of which 80 percent are man-made. Man-made fires result in high production of greenhouse gasses leading to extreme climates including summers. Intentional fires—for collection of tendu leaves or mohua flowers, and accidental fires—due to negligent visitors, are major causes of forest fires.

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Photo: Henrique-Malaguti



Special Feature

Pranahita Wildlife Sanctuary

Nature's bounty is often found in the most unexpected corners of the world, and the Pranahita Wildlife Sanctuary in Telangana, India, is a testament to this fact. Nestled in the northern region of the state, it stands as a haven for a magnificent tapestry of flora and fauna. Pranahita Wildlife Sanctuary is situated on the banks of the river Pranahita, a tributary of the Godavari River. This prime location ensures a favorable environment for the growth and sustenance of a diverse range of plant and animal species. Covering an area of around 136 square kilometers, the sanctuary offers a pristine habitat that supports the region's rich biodiversity.

When it comes to vegetational diversity, it is truly a spectacle to behold and is characterized by a unique blend of dry deciduous forests, mixed deciduous forests, and scrublands supporting a wide array of plant species, including teak, bamboo, terminalia, pterocarpus, and many more.

However, it is the faunal diversity that truly sets it apart. The sanctuary is home to a multitude of animal species, both common and endangered. It boasts an impressive range of mammals, including tigers, leopards, sloth bears, wild dogs, hyenas, and deer species like sambar,

spotted deer, and chital. The avian population is equally diverse, with the presence of several species of eagles, owls, and migratory birds. Reptiles such as pythons, cobras, and monitor lizards add to the rich tapestry of fauna found within the sanctuary.

Despite this Pranahita Wildlife Sanctuary faces numerous threats that endanger its delicate ecosystem. One of the primary challenges is habitat destruction due to human encroachment and unsustainable developmental activities. Deforestation, illegal logging, and construction projects pose a significant threat to the sanctuary's

Photo: Raymond Pauly



flora and fauna.

Additionally, poaching and hunting activities continue to undermine conservation efforts and disrupt the balance of the wildlife population.

To protect this invaluable sanctuary, immediate steps need to be taken. First and foremost, raising awareness about the sanctuary's significance among local communities and policymakers is crucial.

Effective conservation strategies must be implemented, including stricter laws against poaching and habitat destruction.

Photo: Internet



Threatened Taxa

Plant - *Albizia thompsonii* Brandis



Photo: Vinayaraj

Taxonomy Order Fabales; Family Fabaceae

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

State Distribution Very rare; found only in Appapur, Farahabad, and Saleswaram in Nagarkurnool district.

Population Nothing is known about its population status or trends.

Habitat & Ecology Deciduous tree found in dry deciduous and scrub forests.

Major Threats Threatened due to habitat fragmentation and loss, fuel wood collection, and collection for local medicinal uses.

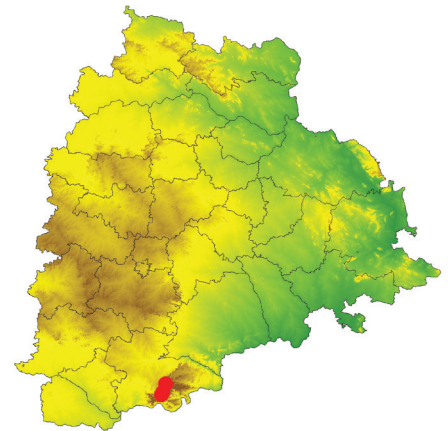
Use & Trade Not in trade, but is collected as fuel wood and for local medicinal use.

Conservation Measures No species-specific conservation measures are in place. Occurs in Amrabad Tiger Reserve.

Remarks

This taxon is found in dry deciduous and scrub forests. It occurs in Amrabad TR. It is threatened by habitat destruction, fuel wood collection and collection for medicinal purposes. The estimated number of localities is 3; the estimated extent of occurrence (EOO) in Telangana State is <500 km², and the area of occupancy (AOO) is <100 km². There is an inferred continuing decline in the area, extent, and quality of suitable habitat. At the global level, this species is assessed as Near Threatened. In Telangana State, this species is assessed as Endangered, with the criteria B1ab(iii,iv)+2ab(iii,iv).

Distribution in Telangana State



Animal - *Rynchops albicollis* (Swainson, 1838)



Photo: Mathew Schwartz

Taxonomy Class Aves; Order Charadriiformes; Family Laridae.

Geographic Range Presently confined to India, Pakistan, Nepal, Bangladesh and Myanmar. In India, it is widely, but patchily distributed.

State Distribution Rare; known from Medchal-Malkajgiri and Medak districts.

Population Nothing is known about the population status or trends.

Habitat & Ecology Inhabits large, sandy, lowland rivers, seen around lakes and adjacent marshes.

Major Threats Threatened by human disturbance at wetlands, degradation of rivers, over fishing, pollution from agriculture and industries.

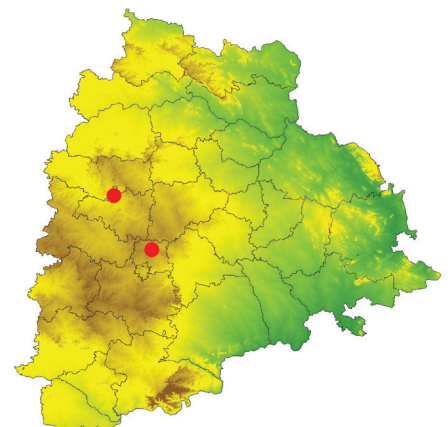
Use & Trade This species is not in trade.

Conservation Measures No known species specific conservation measures are in place for this species. It was reported from Pocharam Lake in Pocharam Wildlife Sanctuary.

Remarks

This taxon is found near large, sandy, lowland rivers, seen around lakes and adjacent marshes. It is threatened due to human disturbance at wetlands, degradation of rivers, over fishing, and pollution from agriculture and industries. It is known from only two locations in Telangana State. There is an inferred continuing decline in the area, extent, and quality of suitable habitat. At the global level, this taxon has been assessed as Vulnerable. In Telangana State, this species is assessed as Endangered, with the criteria B1ab(iii)+2ab (iii).

Distribution in Telangana State



Pioneers in Conservation

Padma Smt. Sosamma Iype

In the current Pathanamthitta district's Niranam hamlet in Thiruvalla, Sosamma Iype was born in 1941. Her work to preserve the Vechur cow, a local breed of cattle, earned her the Padma Shri award from the Indian government for the year 2022. She spent her entire life working to protect Vechur cows and is known as “Vechur Amma,” which is local for “mother of Vechur cows.”

At Kerala Veterinary University (formerly Mannuthy Veterinary College), she was a professor and researcher. Sosamma served as Head of the Department of Genetics and Animal Breeding at the Kerala Veterinary University. She has a PhD from the National Dairy Research Institute in Karnal, Haryana. In 2001, she retired and left her position as Director of the National Bureau of Animal Genetics at Kerala Veterinary University.

She is also a recipient of “India Biodiversity Award 2016” from the United Nations Development Programme (UNDP), Ministry of Forest, Environment, and Climate Change, Government of India and National Biodiversity Authority of India. She has two children, Rebecca Varghese, a doctor, and George C. Abraham, a retired professor of surgery at Kerala Veterinary University, both with the late Abraham Varkey. She now resides in the Thrissur district's Mannuthy. Sosamma still participates in the Vechur Conservation Trust, an NGO established for the conservation of domestic animals and birds in Kerala State, despite having retired from public life.



Photo courtesy: Twitter



Photo: Mullookkaran

Environment Education

Lizards aren't poisonous? But komodos are!

There's a lizard on the wall!!! What if it falls on you!? What if it bites you!? What if it runs and crawls upon you!? Will it bite me to death? What would you do? Well, you need not worry, if you observe them closely, you will notice that they will try to run away from you as they are as scared of us as we are of them. To begin with, lizards aren't poisonous! You might be surprised or confused because elders and our peers have been telling us this to us since our childhood. There are only a few species of venomous lizards we know so far, the gila monster, mexican beaded lizard, species of monitor lizards which includes the voracious and endangered komodo dragons and the iguanas. The difference between poisonous and venomous refers to the way this harmful chemical comes in contact with the victim. An animal is poisonous if it injects its poison into the body such as through fangs of a snake, and venomous when it touches our skin either by accident or by intention when the animal is threatened. It is said to maintain distance because lizards and amphibians such as frogs do carry a bacteria known as salmonella on their skin, teeth and stomachs which makes us sick. Having lizards at home is good as they help in keeping the house pest free. They snack on mosquitoes, cockroaches, house flies, spiders and more which are proven to be potential disease vectors.

Courtesy: Dimitri Dim



Nature for Kids

Kaa

In Rudyard Kipling's timeless masterpiece, 'The Jungle Book,' one of the most captivating characters is Kaa the python. This magnificent serpent - the Indian python, holds a special place in our hearts. They are native to the Indian subcontinent. They are primarily found in the dense forests and grasslands of India, Nepal, Bhutan, and Bangladesh. They have adapted to a wide range of habitats, including rainforests, scrublands, and even agricultural areas. Kaa, with his coiled magnificence, would often be discovered lounging in the branches of trees or lurking amidst the thick undergrowth. Kaa is a remarkable creature known for his incredible strength and stealthy movements. Indian Pythons are non-venomous constrictor snakes, relying on their muscular bodies to subdue and suffocate their prey. They have a preference for larger animals such as deer, wild boar, and monkeys, which they capture by ambushing them from the trees or striking swiftly from the ground. Kaa's patient and calculating demeanor mirrors the natural behavior of Indian Pythons, who often spend hours or even days lying in wait for the perfect opportunity to strike.

Indian Pythons play a vital role in the ecosystem as both predator and prey. As apex predators, they help control the population of smaller mammals, maintaining a delicate balance within their habitat. Additionally, their shedding of skin and excretion of waste contribute to nutrient cycling in the ecosystem. These pythons are also known to be excellent swimmers, often taking to the water to hunt or find refuge. This adaptation allows them to access new areas and disperses their impact on local prey populations. Habitat destruction due to deforestation, urbanization, and agricultural expansion has led to a significant reduction in their natural range. The illegal wildlife trade also poses a severe threat, with Indian Pythons being captured for their skin, meat, and for use in traditional medicine.



Photo: Internet Resource

Our Biodiversity

Herpetofauna of Telangana State

Amphibians and reptiles of an area are crucial for the ecosystem by the services they provide such as serving as an indicator species that warn us of changes in the environment, and serve as pest controllers. India being a tropical country, herpetofauna available here are abundant but there has been absence of surveys and sampling to know the exact amount and type of species present. Telangana state is dominated with dry deciduous forest type along with many river systems that pass throughout the state, nursing the land with rich nutrients that supports diversity.

Herpetofauna in Telangana State has been recently assessed by Chelmala Srinivasulu and G. Chetan Kumar. Based on field surveys conducted since 1995 until 2022, and data from peer-reviewed articles, research papers, and sightings from citizen science initiatives, a checklist of 98 species of herpetofauna including 17 species of amphibians and 81 species of reptiles is provided. The reptiles include 1 species of crocodiles, 6 species of turtles and tortoises, 35 species of lizards and 40 species of snakes.

Three species of lizards (*Hemidactylus flavicaudus*, *H. xericolus*, and *H. aemulus*) are found to be endemic to Telangana State.

Indiscriminate use of chemical fertilizers and pesticides in agriculture fields, dumping of industrial wastes in water bodies, encroachment, and conversion of water bodies into human settlements are the reasons for the drastic decline in the populations of amphibians in the State. The reptiles too face a range of threats, including habitat loss, road mortality, illegal wildlife trade, and lack of awareness. Immediate action is necessary to mitigate these challenges and ensure the survival and well-being of these unique and ecologically significant creatures.



Photo: TToTS



Photo: C. Srinivasulu

Feature - Flora

Plumed Cockscomb - *Celosia argentea* L.

Classification

Kingdom: Plantae
Division: Tracheophyta
Class: Magnoliopsida
Order: Caryophyllales
Family: Amaranthaceae
Genus: *Celosia*
Species: *argentea*
Authority: L.

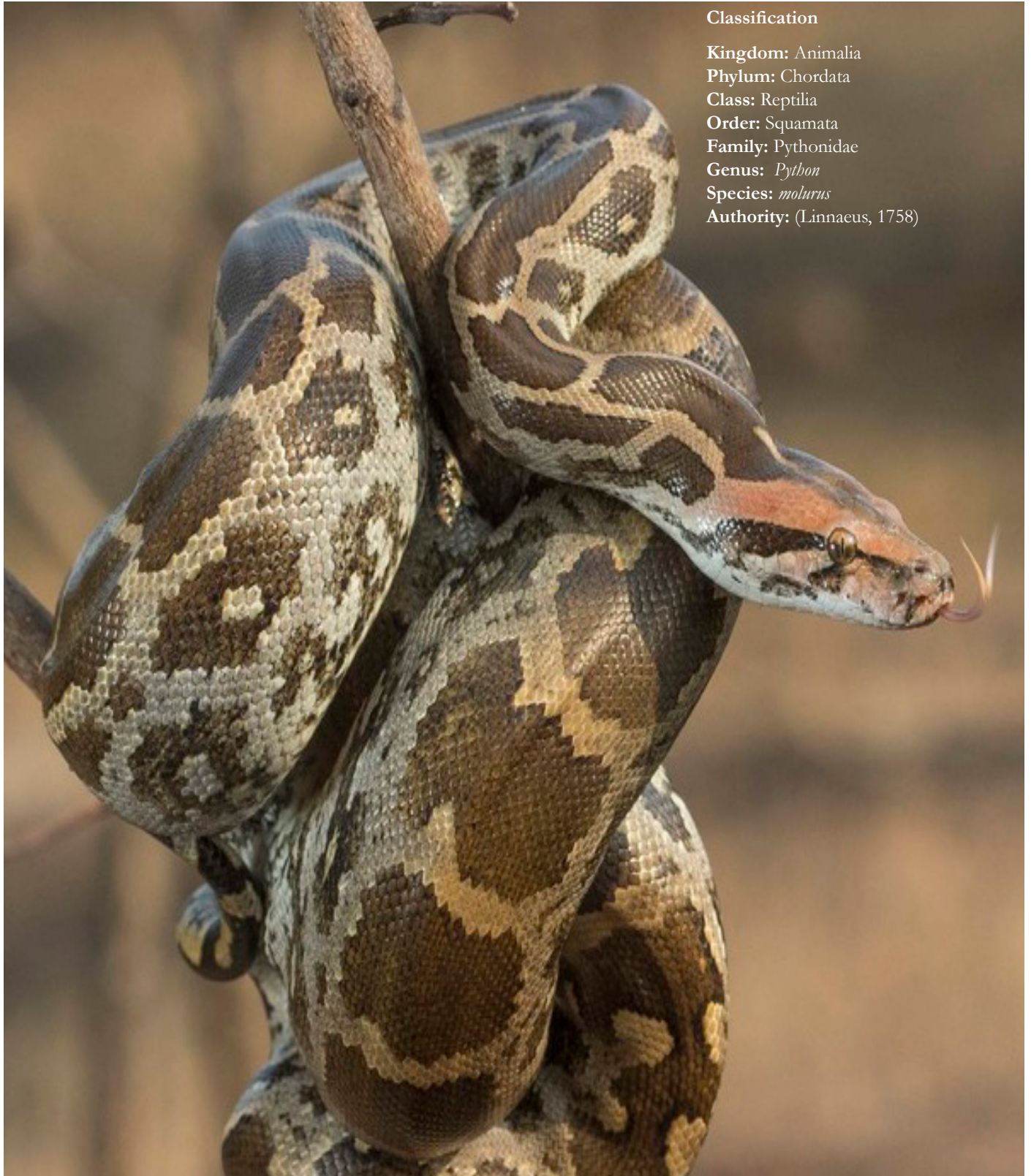


Celosia argentea, also known as the Plumed Cockscomb or Silver Cock's Comb, is a striking flowering plant native to Africa. It features erect stems, lanceolate leaves, and show-stopping flowers that resemble vibrant plumes or rooster crests. The flowers come in various colors, including red, pink, orange, yellow, and white, adding a burst of color to gardens and floral arrangements. Growing up to 1-3 feet tall, *Celosia argentea* is hardy and adaptable, thriving in full sun and well-draining soil, even in dry climates. While typically grown as an annual, it can sometimes behave as a short-lived perennial. Apart from its ornamental value, the plant holds cultural significance, being used in religious ceremonies, festive decorations, and symbolic representations of prosperity and longevity. Overall, *Celosia argentea* is a versatile and resilient plant that offers beauty and intrigue to landscapes and is favored by gardeners and flower enthusiasts worldwide. In Telangana State, it is an integral part of the Bathukamma festival, and like all the flowers used to make the Bathukamma - a floral canopy revered during the festivities, *Celosia argentea* too has pharmacological significance as it has antibacterial and antifungal properties, and also has high radical scavenging activity.

Photo: Bing Lui

Feature - Fauna

Indian Python - *Python molurus* (Linnaeus, 1758)



Classification

Kingdom: Animalia
Phylum: Chordata
Class: Reptilia
Order: Squamata
Family: Pythonidae
Genus: *Python*
Species: *molurus*
Authority: (Linnaeus, 1758)

The Indian Python (*Python molurus*) is a large and impressive snake species found in the Indian subcontinent. With lengths reaching up to 20 feet or more, it is the largest snakes in the region. Its body is robust, covered in smooth scales, and typically displays a beige or light brown base color with dark brown patches outlined in black. These markings allow the python to blend into its diverse range of habitats, including grasslands, forests, wetlands, and agricultural areas. As an ambush predator, the Indian Python relies on its powerful coils to constrict and subdue its prey. Its diet mainly consists of small to medium-sized mammals, such as rodents, deer, monkeys, and birds. Reproduction in Indian Pythons is fascinating, with females laying eggs and then incubating them by coiling around them until they hatch after two to three months. It faces several threats including habitat destruction, fragmentation, and illegal hunting for their skin and meat. Human-python conflict is also a significant concern. Conservation strategies include strict protection measures, habitat preservation, anti-poaching initiatives, and community education; which can ensure the survival of the Indian Python and its continued contribution to the delicate balance of the ecosystem.

Photo: Vinay Goggula

Events

Workshop on Circular Economy held at EPTRI



Courtesy: EPTRI, Hyderabad

Increasing amount of waste generation was identified as one of the four particularly worrying trends worldwide by the Global Sustainable Development Report (GSDR 2019). The Earth faces a “triple emergency” with pollution continuing to poison our air, land and water; the climate heating up and habitat loss threatening large scale extinctions. It is more apparent than ever that our resources are finite. The drivers of climate change and environmental degradation are deeply rooted in our societies and economies. The way out is a solid commitment to deep-rooted transformations and actions that are vital to reducing humanity’s footprint on our planet. We need to move out of our current consumption based-growth model and transition from a linear to a “circular economy” that is sustainable and inclusive. Circular Economy practices and supporting policies will be catalytic in crafting goods, processes and ecosystems that are restorative and regenerative. The workshop was jointly organized by EPTRI and TSPCB.

News

Cheetah to be reintroduced in India



Photo: Magda Ehlers

India is likely to have Cheetahs roaming around in a protected forest in central India by mid August 2022 according to top sources in the Union Environment Ministry. The first few spotted cats will come from South Africa. In the first batch 5-6 animals may be brought before Independence Day as the paperwork is on track. Two technical teams from India have visited the source game park and a South African team will be inspecting the arrangements at Kuno Palpur National Park in Madhya Pradesh for ensuring smooth introduction. A 10 sq km enclosure for cheetahs has been readied at Kuno to house the animals ensuring they are adapting well to the Indian climate and landscape. The plan is to import 32 animals over a period of time. Earlier this year, the ministry informed the Parliament that Rs 38.7 crore from Project Tiger was allocated for the Cheetah reintroduction project between 2021-22 and 2025-26. An action plan has been released for the project, which was under consideration for more than a decade.

Signing Off

Oceans and corals are healing

A comprehensive study on the condition of the planet’s coral has recently been released by the United Nations. In the last ten years, the amount of healthy reef cover—where soft polyps and vibrant algae cover the white skeletons of hard coral—has decreased by 14%. Overfishing, ocean plastic waste, and coastal development all have an impact on the environment, promoting the growth of harmful algae. The greatest threat to reefs worldwide, however, is the bleaching of coral caused by warmer oceans. There are a few positive aspects to the all-too-familiar scenario, too. After significant bleaching incidents in 1998 and 2005, coral recovered, demonstrating that recovery is feasible. The so-called Coral Triangle in the western Pacific Ocean, which is home to the most biodiverse coral in the world, is also thriving. A significant turning point in the UN’s Decade of Ocean Science for Sustainable Development, delegates convened in Lisbon, Portugal, for the UN Ocean Conference. This conference gave participants the chance to discuss their in-depth knowledge of the ocean and the difficulties it faces including the urgency of the need for radical cooperation to achieve SDG 14 (life below water). Water covers 75% of the surface of our planet and the ocean provides a plethora of life. It is home to almost 200,000 species that have been recognised and provides a living for three billion people.

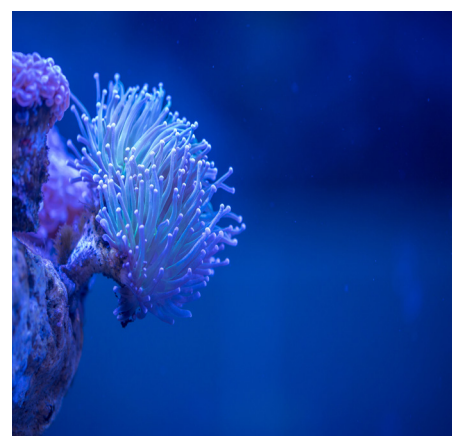


Photo: Egor Kamelev

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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