



ex-situ

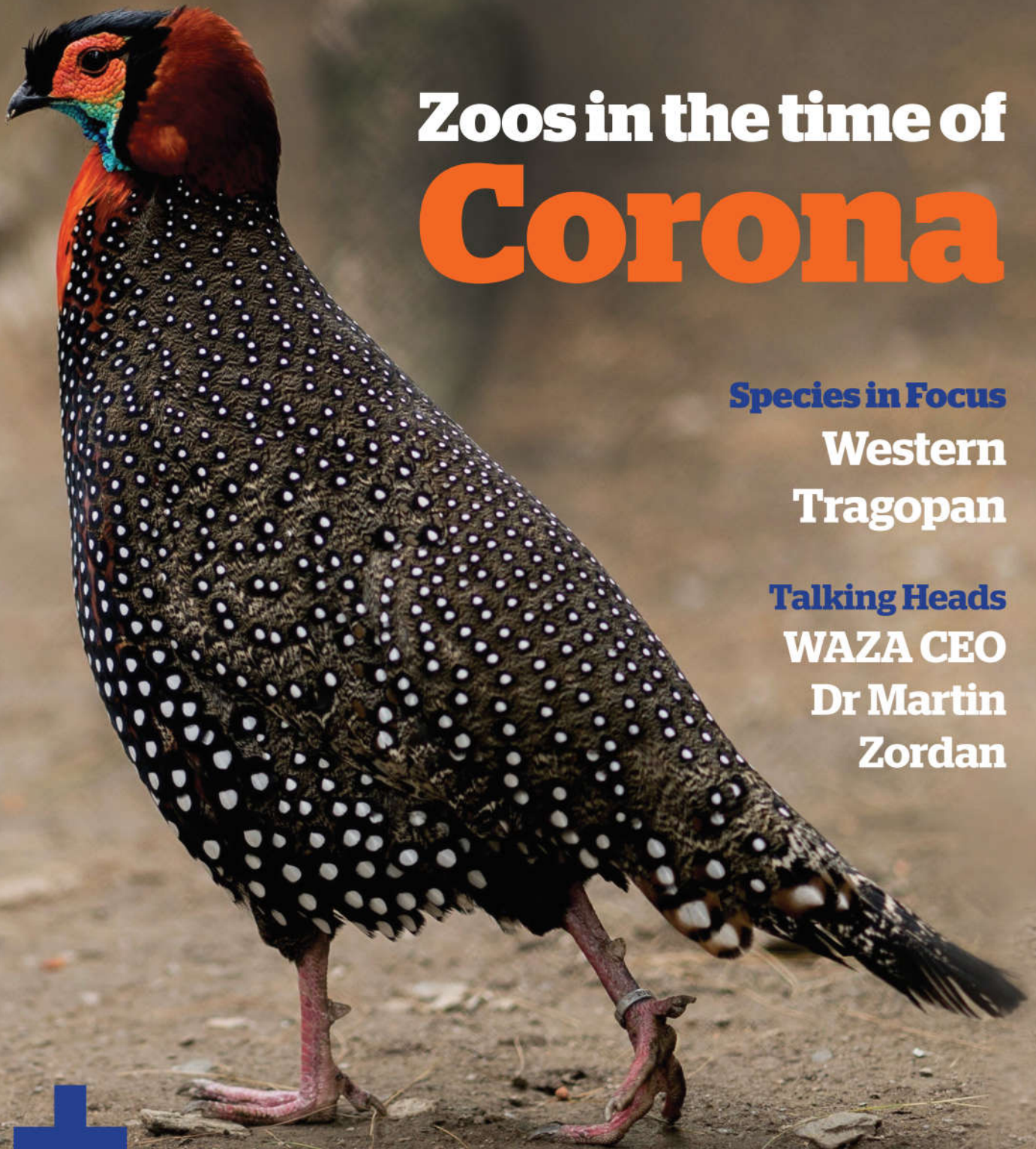
UPDATES



Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण



Ministry of Environment, Forest
and Climate Change



Zoos in the time of **Corona**

Species in Focus
**Western
Tragopan**

Talking Heads
**WAZA CEO
Dr Martin
Zordan**



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SUGGESTED CITATION
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ON THE COVER
Western Tragopan (*Tragopan melanocephalus*) at the Sarahan Pheasantry, Himachal Pradesh (Photo: Munmun Dhalaria)

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from the
MEMBER SECRETARY

Ex-situ conservation is perhaps more challenging than *in-situ* conservation as it requires intensive management to ensure the overall welfare of captive animals. Fortunately, the zoos of our country have evolved suitably with respect to overall management of animals in captivity, ranging from maintaining the upkeep and healthcare of animals to preparing for any unseen emergency. This was exactly the situation faced by zoo managers across India during the nationwide lockdown due to the COVID-19 global pandemic.

The situation was particularly alarming for zoos due to the news of a tiger (and consequently, five tigers and three lions) testing positive for the coronavirus at the Bronx Zoo, New York in April. Fortunately Indian zoos were on high alert before the lockdown was formally announced and timely advisories and concerted action by state forest departments have so far averted any pandemic-related tragedy.

This issue of *Ex-situ Updates* mainly focuses on efforts made by zoos during the COVID-19 pandemic, where staff have worked with tireless commitment for the voiceless creatures in the zoos under their care. These are challenging times and a reminder to the zoo community of the huge responsibilities



Shri Babul Supriyo, Minister of State for Environment, Forest and Climate Change at the CZA stall, CMS COP-13, with Dr S P Yadav, Member Secretary, CZA. (Photo: MoEFCC)

they have to fulfil in consideration of the animals, caretakers, as well as the visitors. However, as witnessed, the zoo community has shown courage and compassion for wildlife, and done exemplary teamwork responding in an unprecedented emergency with timely application of management plans, adapting these to suit the situation. Additionally, this newsletter issue also highlights the best innovative practises that gear us for the 'new normal'. Webinars, virtual zoo programmes and use of digital media platforms have helped zoos take up extensive outreach.

I hope that as we celebrate World Environment Day on 5th June, we remember to cherish and appreciate the beauty of nature and its many creatures, and pledge to protect and preserve her forever.

Dr SP Yadav, IFS
Member Secretary
Central Zoo Authority

TRIBUTE

*Madhavakrishna
Kamal Naidu, IFS
(1939-2018)*

Imagine being face to face with a six-and-a-half foot cobra and pushed to choose between your own life and the lives of the animals you love! This life threatening incident actually happened with Shri M Kamal Naidu, a distinguished Indian Forest Service officer and **former director of the National Zoological Park, Delhi.**

Born and brought up in Andhra Pradesh (including present-day Telangana), Shri Naidu joined the Indian Forest Service in 1962. He served in remote areas rife with insurgency and was known for showing exemplary courage. It was during his tenure as DFO that on August 10, 1972, he was **ambushed, shot at, and grievously injured by Naxals**, near Paloncha, a small town in present day Telangana. He survived but was confined in the hospital for three-and-a-half months before being discharged.

Another close brush with death was with an Indian cobra at Delhi zoo, when he picked the serpent by its tail to save the lion cubs housed in the enclosure. Unfortunately, he got bitten and battled for three days in critical condition at the hospital.

For his bravery and steely commitment



Top left and above: Shri Naidu receiving the Shaurya Chakra from the Hon'ble President of India Shri R Venkataraman; Shri Naidu with one of his charges at Nehru Zoological Park, Hyderabad

towards wildlife, **he was awarded the Shaurya Chakra, for extraordinary gallantry, in 1988.** He is the first civilian and IFS officer to receive this honour.

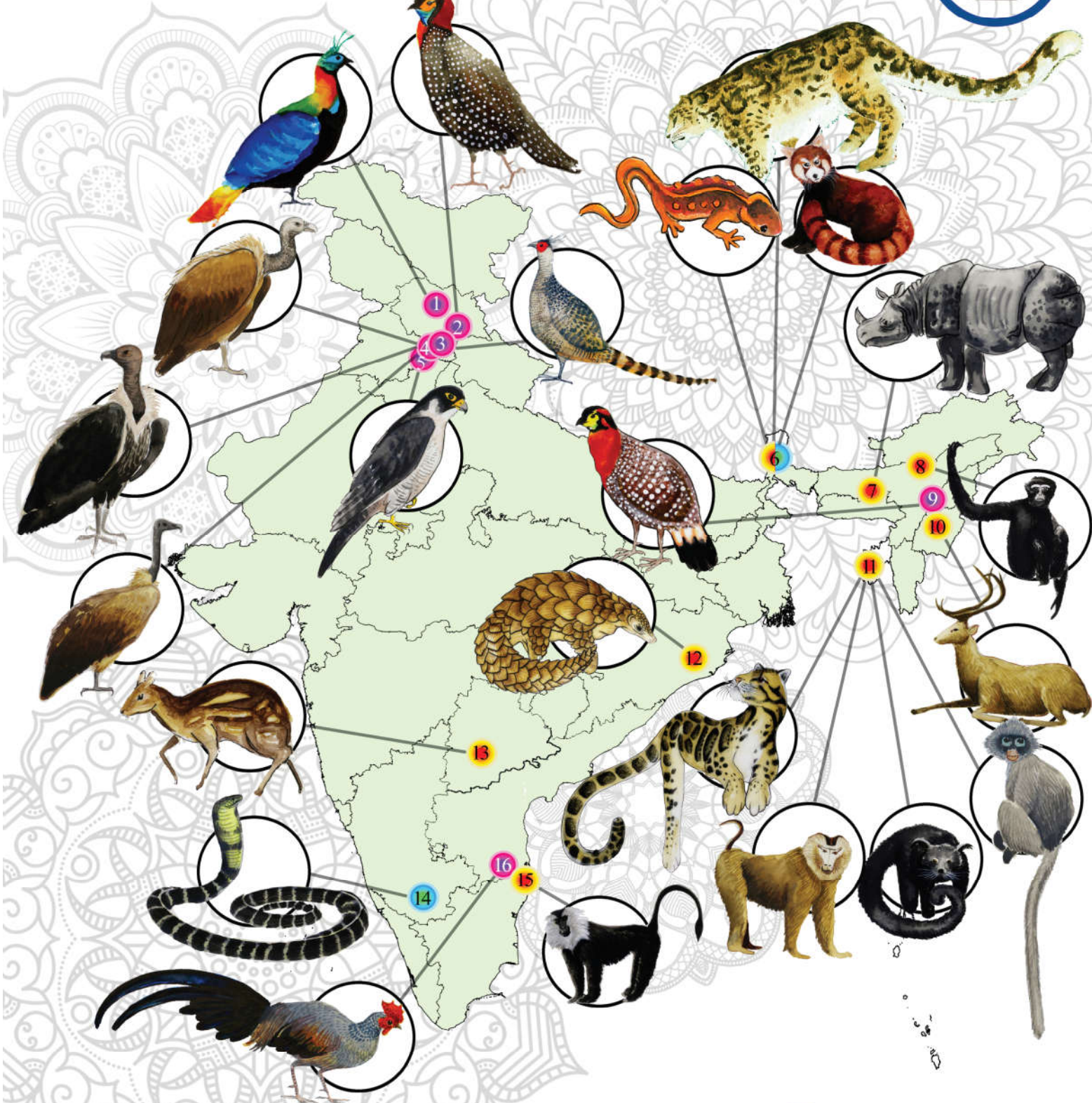
Shri Naidu's contribution to zoo management has been exemplary. He also served as **Curator at Nehru Zoological Park, Hyderabad.** His seminal book **'Handbook for Indian Zoo Directors'** was first published in 2006. His other book, **'The Tigress of Nallamalai'** is one of the few authored on the beautiful landscape of present day Nagarjunasagar - Srisaillam Tiger Reserve.

Shri Kamal Naidu will be remembered for his lifetime dedication to animals, both wild and captive, as he continues to inspire generations of zoo managers and conservationists in India.

PRIORITY SPECIES

for ex-situ conservation

Illustrations: Vivek Sarkar



- Mammals
- Birds
- Reptiles & Amphibians

1. **Nehru Pheasantry:** Himalayan Monal; 2. **Sarahan Pheasantry:** Western Tragopan; 3. **Chail Pheasantry:** Cheer Pheasant; 4. **Vulture Conservation Breeding Centre:** Indian Vulture, White-rumped Vulture, Slender-billed Vulture; 5. **Mahendra Chaudhury Zoological Park:** Peregrine Falcon; 6. **Padmaja Naidu Himalayan Zoological Park:** Himalayan Salamander, Red Panda, Snow Leopard; 7. **Assam State Zoo-cum-Botanical Garden:** Greater One-horned Rhino; 8. **Biological Park, Itanagar:** Western Hoolock Gibbon; 9. **Nagaland Zoological Park:** Blyth's Tragopan; 10. **Manipur Zoological Garden:** Eld's Deer; 11. **Sepahijala Zoological Park:** Binturong, Clouded Leopard, Northern Pig-tailed Macaque, Phayre's Leaf Monkey; 12. **Nandankanan Zoological Park:** Indian Pangolin; 13. **Nehru Zoological Park:** Indian Chevrotain; 14. **Dr. K.Shivaram Karanth Pilikula Biological Park:** King Cobra; 15. **Arignar Anna Zoological Park:** Lion-tailed Macaque; 16. **Sri Venkateswara Zoological Park:** Grey Junglefowl.



the **BIG PICTURE**
**Zoos in
the time of
Corona**



The key to successfully dealing with unprecedented situations like the COVID-19 pandemic is proactive preparation. We bring you lockdown stories from Indian zoos and the zoo managers, vets, caretakers, educators, sanitation workers, animal rescuers, and countless other staff who have tirelessly worked to ensure the survival of captive animals.

An important aspect of Indian zoos is their primary mandate of animal welfare and ex-situ conservation, besides public awareness and outreach. Driven by this perspective, Indian zoos have fared better in ensuring a continuous supply of food and animal care including veterinary support during these troubled times.

>> **Timely Intervention by CZA**

From across India, there are numerous excellent examples of how zoos stepped up their preparation - in many cases, well before the nationwide lockdown was announced.

CZA issued its first advisory reminding zoos to follow preventive measures on 13th March while also reiterating the advice of the Ministry of Health and Family Welfare. An important step was to write to the Chief Secretaries of all states and UTs, requesting them to include zoos and zoo personnel under 'essential services'. It also helped when the Ministry of Home Affairs in its addendum dated 25th March exempted zoo management services from the list of non-permitted activities.

>> **Proactive Preparation**

A range of measures like ensuring good hygiene and sanitation practices, temperature scanning of zoo staff, as well as monitoring animal behaviour, helped prevent any major mishap during the lockdown.

An excellent example comes from **Sanjay Gandhi Biological Park**, Patna, Bihar where visitor entry was shut down on 15th March - nine days before the

Staff being checked with a thermal scanner at Nehru Zoological Park, Hyderabad (Photo: NZP)





Veterinarians inspecting animal feed at Nehru Zoological Park, Hyderabad (Photo: NZP)

nationwide lockdown. “With the bird-flu scare two-years-ago that resulted in the zoo shutting operations for two months, the staff have the experience of dealing with an abrupt halt to zoo operations, as well as sanitation and hygiene protocols,” as per Amit Kumar, Director of the park. He recalls: “When the lockdown began, we ensured that about 30 percent of our staff were working as part of essential services with nearly 40 individuals staying full-time in the zoo residential complex.

Similarly, in **Nehru Zoological Park**, Hyderabad, Curator N Kshitija mentions that she anticipated such uncertainty early on, and started making preparations. “We made masks and gloves compulsory for staff even when the zoo was open to visitors, and ordered medicines for staff and animals early on.” In the first week of March, the zoo stocked up on two months of feed and grain supply. A dedicated medical team maintained a daily register of staff temperatures.

Another example comes from a zoo under public sector undertaking in Jamshedpur, the **Tata Steel Zoological Park**. Bipul Chakraborty, the Curator mentions, “We anticipated this uncertainty early in January. A majority of the sanitation and hygiene measures as advised were already being followed here since years, and we had adequate supply of PPE (Personal Protective Equipment). Being a small zoo, we were able to manage.”

Impressively, for Bengaluru’s expansive **Bannerghatta Biological Park**, pandemic preparedness went beyond just staff and animal safety; with the zoo engaging its student volunteers in educating visitors about social distancing and hygiene. The Executive Director, Vanashree Vipin Singh, appreciatively adds that all staff have been pitching in with longer hours than usual, picking up night shifts, and going well beyond what is required to ensure that zoo functioning is optimal.



Golden Jackal (*Canis aureus*) enclosure at Rajkot Zoological Park (Photo: R K Hirpara)

>> India on High Alert

In April, a tiger in Bronx Zoo, New York tested positive for COVID-19, and CZA issued its second advisory to zoos across India indicating the three National veterinary centres (at Bhopal, Hissar and Bareilly) where suspected samples for COVID testing could be sent. Fortunately for India, over 22 animal samples have been tested and found to be negative till date.

In **Kanpur Zoological Park**, staff took various precautionary steps like enhancing pest control services, and introducing foot trays dipped with disinfectants for all individuals entering the zoo premises. They also conducted regular awareness programs for staff about biosecurity and zoonotic diseases.

>> Peace in Spring

With a sudden halt in visitors' entries to zoos, animals were placed in an environment unlike ever before. Zoo staff have been keeping a watchful eye and have observed that animals appear more relaxed with no footfalls!

Amala M Anil, Education Officer at the Bannerghatta Biological Park, Bengaluru observes, "the zoo is rather peaceful, so we have tried to move animals in different enclosures too. We observed the crocodiles mating, elephants can walk around freely."

She pointed out that the zoo's primates actively engage with visitors, and thus appear slightly bored - an observation mirrored by zoo staff at the **Assam State Zoo cum Botanical Garden**, Guwahati.

Tejas Mariswamy, Director at the zoo adds, “Our hoolock gibbons interact a lot with people, so they appear a little dull with no visitors around. But otherwise, I think our animals are quite relaxed, especially the big cats, who have become more active in their enclosures.”

The lockdown coincided with spring and breeding season, and multiple births were reported in zoos. A Rhino calf was born in Patna’s Sanjay Gandhi Biological Park during the lockdown and giraffes were observed mating too. In the Nehru Zoological Park, Hyderabad, 13 births have taken place during the lockdown: three royal Bengal Tigers, two African Lions, six Jackals, and two Blue-and-Yellow Macaws brought in joy and also kept the zoo medical team on their toes! In a first, an Asiatic Lion at the **Sakkarbaug Zoological Garden**, Junagarh also gave birth to six cubs, which is unusual in the wild.

Staff sanitisation cabin at Gorewada Zoo and Wildlife Rescue Center (Photo: Gorewada ZWRC)



The more peaceful environs have invited free ranging animals - Bannerghatta is overrun with colourful butterflies, and Bhopal’s **Van Vihar National Park Zoo** has welcomed Black Kites who have quickly taken up residence in the park’s trees.

>> Rescue and Treatment During Lockdown

Additionally, zoos have continued with animal rescue and rehabilitation during the lockdown too. In **Alipore Zoological Garden**, Kolkata, an injured Spotted Deer was rescued from the Sundarbans area. A Burmese Rock Python with unusual tissue swelling was also treated here. At the **National Zoological Park**, Delhi, an Asian Elephant, Rajlakshmi was treated for her abscess while white tigress Sita was operated for her dental ailment by the inhouse vets.

>> Outreach in the times of Covid

If there’s one thing that COVID-19 has taught zoos, it is to find new innovative ways to continue with conservation outreach. With visitors at home, zoos have tried to continue with public engagement through digital and social media by live-streaming sessions of animal enclosures, uploading educational talks on social media, and encouraging participation through animal adoption schemes.

Bannerghatta Biological Park uses social media to update viewers about zoo animals, and encourages them to support the welfare of these animals. It has seen an unprecedented increased engagement in their ‘animal adoption’ scheme, collecting over ₹10 lakh from



An Asian Elephant (*Elephas maximus*) undergoing treatment at the National Zoological Park, New Delhi (Photo: CZA)

46 individuals in a 15-day period during lockdown.

Chennai's **Arignar Anna Zoological Park** has shared live video-streaming of various animal exhibits for about two years, but saw a rapid increase in viewership during the lockdown period "from 15,000 page views per day, the viewership has shot up to between 60,000 to 80,000 during lockdown,"

says the curator of the zoo Sudha Ramen.

Similarly, in an effort to engage visitors, Assam State Zoo and Botanical Garden has also been sharing videos on their social media channels to keep followers engaged. Both the Arignar Anna Zoological Park and **Sri Chamarajendra Zoological Gardens**, Mysuru have started virtual zoo Ambassador programmes which are a big hit with children.

>> Advice from the Curators

In the interest of learning from the challenges faced by zoos during the lockdown, we asked curators what advice they would give to zoos for continuing to work post COVID-19.

The director, Sanjay Gandhi Biological Park, Patna, acknowledges that when zoos reopen, they will have to be extremely cautious about zoo functioning; from being watchful of young visitors, to the importance of maintaining social distancing amidst the crowds. “We need to work together, and share our experiences and learnings to get through this together,” he added.

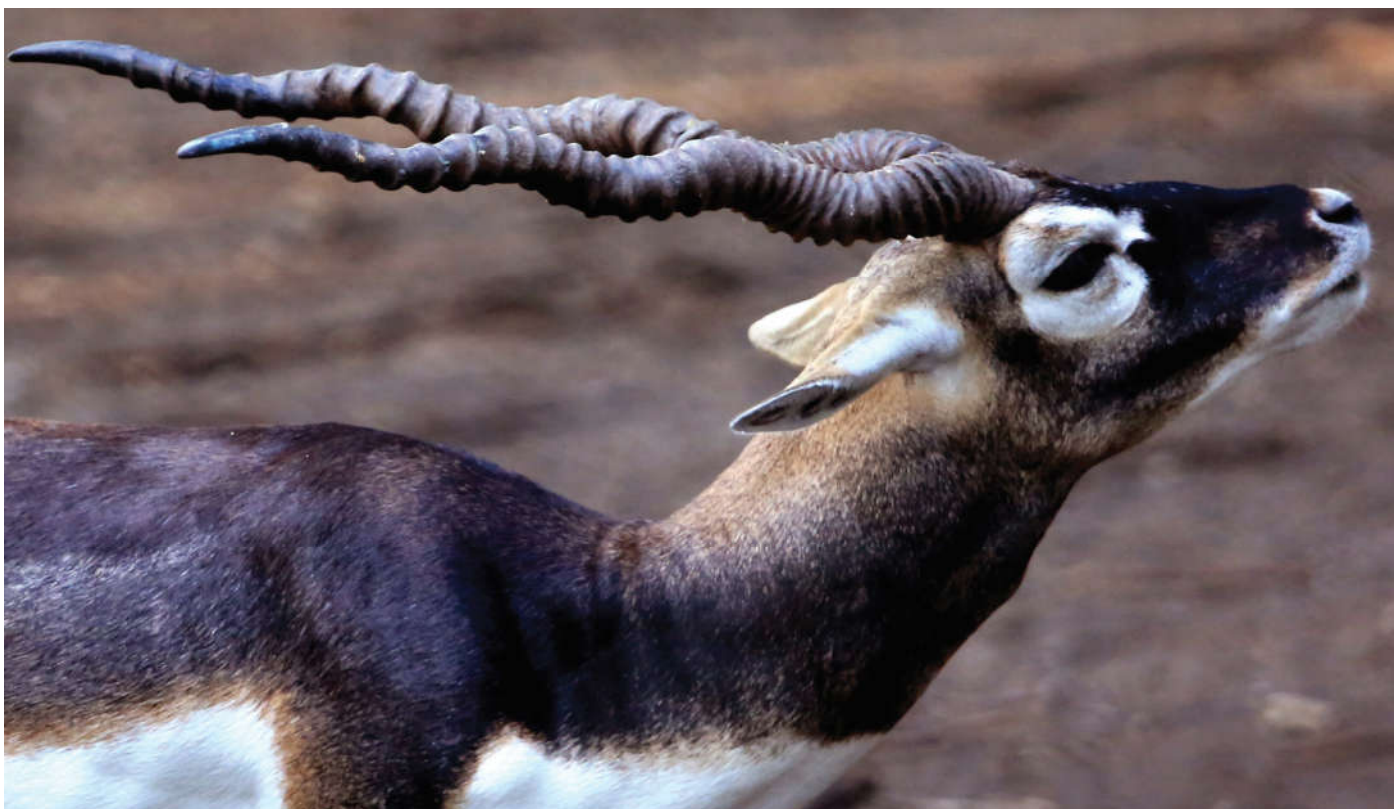
The Bannerghatta administration is calculating revised carrying capacity for reopening zoos, and working on how staff can be more efficient in monitoring visitors. Meanwhile, the curator, Tata Steel Zoological Park, Jamshedpur, advises that zoos should try focussing on indigenous species instead of trying

to collect exotic species, as they are best suited to the local climatic conditions. In the same vein, the curator of Assam State Zoo cum Botanical Garden recommends self-sufficiency and growing fodder and other feed in-house, instead of relying on external sources .

At Nehru Zoological Park, Hyderabad, the executive director advises preparing dormitory facilities on-site in zoo residential complexes, so that staff can stay on premises in cases of emergencies.

It is heartening to note that zoos across India have demonstrated preparedness and have lived up to this enormous challenge. The untiring efforts of the animal keepers, vets, sanitation workers and the entire zoo management truly make them the unsung heroes of *ex-situ* wildlife conservation.

A Blackbuck (*Antelope cervicapra*) at Tata Steel Zoological Park (Photo: Sanjib Dutta)



SNAPSHOT

CZA at CMS COP-13

Gandhinagar, Gujarat

(February 15-22, 2020)

The Central Zoo Authority participated in the 13th meeting of the **Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP-13)** together with the associated meetings of the Standing Committee held at Gandhinagar, Gujarat from 15th to 22nd February, 2020. CMS is the only global biodiversity agreement aimed at international cooperation for the conservation of migratory species of wild animals and their habitats.

The theme of CMS COP-13 was **'Migratory species connect the planet and together we welcome them home'**. The mascot for CMS COP-13 was 'Gibi - The Great Indian Bustard', which is a critically endangered species on the IUCN Red List and has been accorded the highest protection status (listed in Schedule I) under the Wild Life Protection Act, 1972.

CZA showcased its successful conservation breeding initiatives ongoing in Indian zoos at the CMS exhibition pavilion. The stall, which looked vibrant and attractive with wild animal models was appreciated by several visitors, including the Hon'ble Ministers for Environment, Forest and Climate Change, GOI, Chief Ministers of various states, senior forest authorities and heads of National and International



The popular zoo-themed selfie point at CZA's stall in the CMS exhibition pavilion (Photo: MoeFCC)

organisations. There was also a selfie point themed on zoos at the stall that proved to be quite popular!

The Central Zoo Authority also organised a side event on Species Conservation at the India Pavilion. It was chaired by Dr S P Yadav, Member Secretary, Central Zoo Authority and co-chaired by Shri Soumitra Dasgupta, Inspector General of Forests (Wildlife), MoEF&CC. The panel highlighted the following success stories of *ex-situ* breeding programmes:

- Asiatic Lion (*Panthera leo ssp. persica*) - Sakkarbaug Zoological Park, Gujarat
- Indian Chevrotain (*Moschiola indica*) - Nehru Zoological Park, Telangana
- Greater One-horned Rhino (*Rhinoceros unicornis*) - Sanjay Gandhi Biological Park, Bihar.



Central Zoo Authority, New Delhi

@CZA_Delhi

This is the official twitter handle of Central Zoo Authority, New Delhi. A Statutory Body of the Ministry of Environment, Forest & Climate Change. @moefcc

📍 New Delhi 🌐 cza.nic.in 📅 Joined April 2020

CZA launched its first official social media account on Twitter (@CZA_Delhi)

CONSERVATION NEWS

Digital Outreach, COVID-19 Management and more

>> **Advisories for COVID-19 Safety Practices**

CZA issued timely advisories to states and zoos which included providing factual information about COVID-19, preventive steps to be followed as per national guidelines, and advice on upkeep and maintenance of captive animals. Specific advisories were also issued in response to news of COVID-19 infection in a tiger at Bronx Zoo, New York.

During the lockdown period, a major breakthrough was achieved when with

active pursuance of CZA, on 25th March, 2020, the Ministry of Home Affairs, Govt of India included zoo personnel, animal fodder and transport as part of essential services permitted during lockdown.

>> **Integrated Species Recovery Plan**

The CZA is spearheading the formulation of a five-year plan for recovery of threatened species. The aim is to 'converge' and employ a multi-faceted approach including aspects of habitat, conservation breeding (in case of endangered and critically endangered



species) and species restoration options through science-based monitoring.

>> CZA Launches Official Twitter Handle

On 30th April, 2020, CZA launched its first official social media account on Twitter (@CZA_Delhi), which received an overwhelming welcome. The account regularly shares updates from zoos across India through videos and photographs, and encourages zoos to continue reaching out to visitors while staying connected with them during the lockdown period.

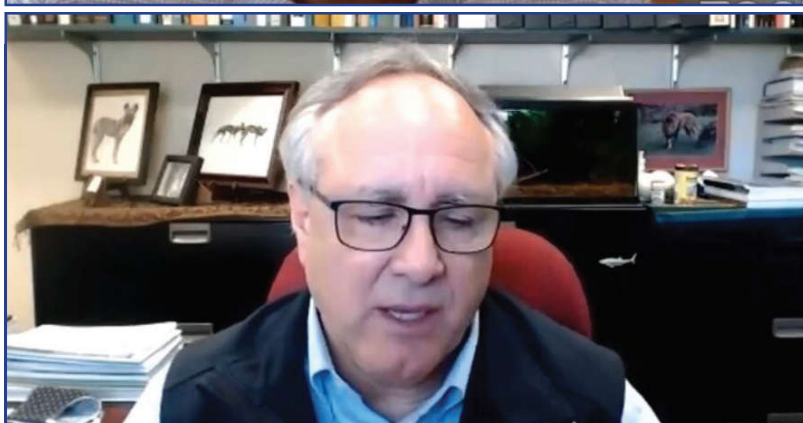
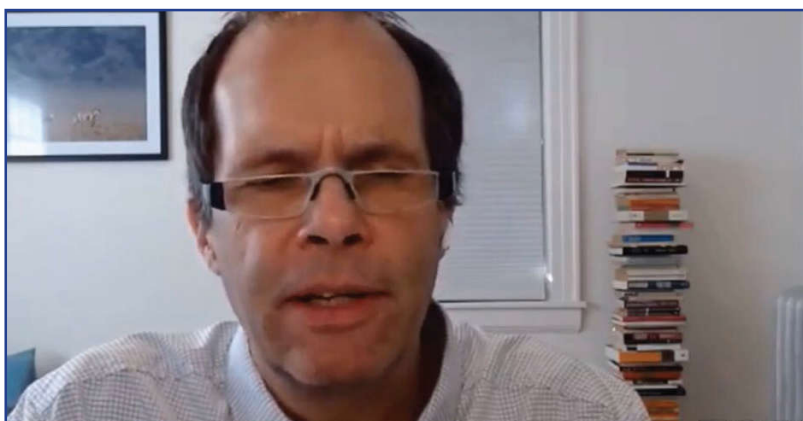
>> Webinar on COVID-19 Detection and Management in Big Cats

A webinar on “COVID-19 Detection and Management in Big Cats” was organised on 2nd May, 2020, in collaboration with HCL Foundation, The Habitats Trust, and Wildlife Conservation Society. The webinar commenced with a keynote

speech delivered by Dr SP Yadav, Member Secretary, CZA, followed by expert lectures from Dr Christian Walzer (Executive Director Health, Wildlife Conservation Society, Bronx, New York and Co-Founder of Conservation Support Network) and Dr Patrick R Thomas (Curator of Mammals, Bronx Zoo, Wildlife Conservation Society). The webinar was attended by 200+ participants including IFS officers, zoo directors, veterinarians, animal lovers and wildlife enthusiasts.

The webinar can be viewed at: www.youtube.com/watch?v=-J-9KnJF5Yc

(Below) An online poster announcing the webinar on “COVID-19 Detection and Management in Big Cats”; (below, top right) Dr Christian Walzer and (below, bottom right) Dr Patrick R Thomas participating in the webinar



HCL FOUNDATION ACADEMY
 ✓ Enrich ✓ Enable ✓ Engage
Topic of the Webinar
 COVID-19 Detection and Management in Big Cats:
 An Expert Talk by WCS
 In collaboration with The Habitats Trust

Saturday, May 2, 2020 **6:00 pm IST (GMT +5:30)**

Keynote Address	Experts from WCS	
 Dr. S.P. Yadav Member Secretary, Central Zoo Authority, New Delhi, India	 Dr. Christian Walzer Executive Director Health, Wildlife Conservation Society, Bronx, New York and Co-Founder of Conservation Support Network	 Dr. Patrick R. Thomas Curator of Mammals, Bronx Zoo, Wildlife Conservation Society



Nadia, the 4-year-old female Malayan Tiger (*Panthera tigris ssp. jacksoni*) that tested COVID-19 positive at the Bronx Zoo (Photo: Julie Larsen Maher / WCS)

SPECIAL FEATURE

In the Eye of the Storm

COVID-19 in Felids at Wildlife Conservation Society's Bronx Zoo

Text: Dr Patrick Thomas, Vice President & General Curator, Wildlife Conservation Society, and Associate Director, Bronx Zoo

Five tigers and three lions at the Wildlife Conservation Society's Bronx Zoo tested positive for COVID-19 in March and April 2020. This included two Malayan Tigers (*Panthera tigris ssp. jacksoni*) and three Amur Tigers, (*Panthera tigris ssp.*

altaica) and three African Lions (*Panthera leo*). All are adults between 4 - 14 years old. **Seven cats that tested positive for COVID-19 exhibited some clinical signs; one Amur Tiger was asymptomatic.** The primary clinical indicators of illness



were coughing (all seven animals) and wheezing (three tigers and one lion). One Malayan Tiger also exhibited a decreased appetite for a few days. All were treated with a broad spectrum antibiotic (Amoxicillin/clavulanic acid).

>> Diagnoses

The Malayan Tiger that exhibited signs of illness for the longest period of time was started on a course of Amoxicillin/clavulanic acid on 28th March. When her symptoms did not subside she was chemically immobilised on 2nd April for a complete medical evaluation (physical examination, radiographs, ultrasound and routine blood testing) and to collect diagnostic samples, including nasal and oropharyngeal swabs and tracheal wash samples, to test for COVID-19.

The samples for qPCR testing showed presumptive positive results which were confirmed with another test.

>> Our Response

To protect our animals and staff, we instituted a **higher degree of Personal Protective Equipment (PPE) for keepers** who work with felid species across all four WCS zoos. Staff working with cats now must wear coveralls, a surgical mask, some form of eye protection (e.g., face shields or goggles) and latex gloves, including when preparing animal diets. Additionally, we have encouraged social distancing by limiting close contact with cats and limiting access to felid-holding areas. We have also reinforced the use of footbaths whenever staff enter or leave any cat enclosure.

After receiving the test results, we had

staff dry-clean all off-exhibit indoor enclosures of felids. We now have a protocol in place whereby those areas are cleaned by first picking up and removing all organic debris, spraying the enclosures with Rescue™, a disinfectant known to kill COVID-19, and allowing that product to sit for five minutes, as per product guidelines. The enclosures are then hosed with a weak stream of water. All our cats can still go into outdoor yards or exhibits, and our staff immediately reports any unusual observations in the animals.

We have also **increased PPE and enhanced enclosure cleaning** for mustelids, viverrids and bats and a long-standing (20+ years) protocol with PPE is already in place for our primates. We have not seen any signs of illness in any of these groups of animals.

>> Conclusion

All eight big cats that tested positive for COVID-19 appear to be doing very well. We will continue with our current management protocol with all our felids and the other species we believe to be susceptible to COVID-19 for the foreseeable future.

(Photo: Bronx Zoo / WCS)





(Photo: WAZA)

TALKING HEADS

Dr Martín Zordan

CEO, World Association of Zoos and Aquariums

D*Dr Martín Zordan is a veterinarian with a diverse professional background in science and conservation, culminating in his work as Executive Director of the Latin American Association of Zoos and Aquariums, followed by his role as the Director of Conservation at the World Association of Zoos and Aquariums (WAZA). He took over as full-time CEO of WAZA in April 2020. CZA congratulates him on his new role. Published here is an exclusive interview with **Ex-situ Updates**.*

To your understanding, how have zoos and aquariums globally fared in dealing with COVID-19 pandemic?

Zoos and aquariums are prioritising the care of animals as well as the safety of visitors and staff. Financially, it has been challenging as the main income for most of the zoos and aquariums around the world comes from the entrance fees. At some point, 95 percent of our members were closed. Now some WAZA members zoos have opened in Germany, Austria,



the USA, Sweden, Czechia and France to name a few.

What were some immediate challenges faced by zoos worldwide when you became CEO? What is WAZA's strategy to overcome these challenges?

Financial support, need for guidance for re-opening and access to experiences of the global Zoo and Aquarium community in other parts of the world were the main needs that were perceived.

As a global organisation, our role has been to be a platform for national and regional associations of zoos and aquariums to share their needs and experiences. In addition, we are running a series of online webinars to discuss relevant topics to the zoos and aquariums during COVID-19.

How do you think Indian zoos have fared in dealing with COVID-19 pandemic? And how do we build more successful partnerships for the future?

One way we learn about what our nine members in India are doing is through social media and online news. We have seen that Bannerghatta Zoo and Vandalur Zoo have been very active on social media. We also know that during this crisis, our members in India are committed to a high degree of hygiene

within zoo premises, just as all the others. For the future, we also need to collectively move towards achieving the '2023 Animal Welfare goal' which states that by 2023, WAZA National and Regional Associations must have an animal welfare evaluation process in place. We are excited to see how Central Zoo Authority, as a WAZA Association member, can help us with this goal. Additionally, internationally, there is increasing interest in gathering data from India for the WAZA International Studbooks.

“ I'm excited about future collaborative opportunities with India ”

We would love to hear your advice for zoos and zookeepers across India, who are dealing with unprecedented challenges during COVID-19.

We are incredibly and humbly thankful for the

work you are doing for the animals. We know this is a hard time for you and we hope your families and friends are doing okay. At this time, we encourage you to seek support from your government and communities.

Continue to find ways to keep your audiences engaged with what is happening at your zoos and find ways to also share optimistic and inspirational messages. We are seeing our world changing, and as hard as that is, it also brings new opportunities. For me that opportunity is to heal how we interact with nature.



Western Tragopan (*Tragopan melanocephalus*) at the Sarahan Pheasantry

“ In the mountain forests of the Western Himalayas lives this great bird, its black and crimson plumage covered with a shower of silvery stars...” ”

William Beebe, 1918

SPECIES in focus

Western Tragopan

Text & Photographs: Lakshminarasimha R, Scientific Officer, CZA

>> The King of Birds

The Western Tragopan is a vulnerable pheasant endemic to the western Himalayas. It is predominantly a ground-dwelling bird distributed in fragmented populations across northern Pakistan, Kashmir and Himachal Pradesh.



Locally, the Tragopan is known by various names: *jujurana* (king of birds) in Himachal Pradesh, *jewaar* in Garhwal (a former distributional range of the species in Uttarakhand) and *seeng-monai* (horned Monal) across most of its range.

The name 'Tragopan' originates from a union of the two words: Tragus (goat) and Pan (the Greek half-goat deity of the high hills, who watches over shepherds and their flocks). The males are brightly coloured with an orangish-red face and throat, crimson neck, black head and body with white-spots on black; while the females have duller hues – mostly brownish with whitish-gray spots. During courtship, males exhibit unique facial features like lappets and horns, which is why the species was earlier called the Western Horned Pheasant.

The Western Tragopan breeds in a narrow altitudinal range between 2600m to 3600m in the upper temperate region. Its diet predominantly consists of seasonally available leaves, ferns,

flowers, buds, and occasionally, insects. Tragopans are polygamous and breed during April-July. They nest in elevated broken tree trunks or abandoned corvid nests, laying around three to five eggs. The female incubates for around 28 days and exclusively provides parental care.

>> Conservation Status

There are fewer than 2,500-3,000 individuals left in the wild. The major threats to their survival in the wild are habitat loss, poaching and collection of minor forest produce such as medicinal plants and mushrooms. The species is listed in **Schedule-I of the Wild Life (Protection) Act of India** and categorised as 'Vulnerable' by IUCN to prioritise its protection in the country and across its distributional range.

>> Reigning in Himachal Pradesh

Himachal Pradesh is a stronghold of wild populations of the Western Tragopan, which is its state bird. Given its importance as a flagship species for wildlife conservation the Wildlife

The Pheasantry at Sarahan, Himachal Pradesh during the winter months





The team at the Sarahan Pheasantry



Diet provided for Western Tragopans at the pheasantry

Wing of the Himachal Pradesh Forest Department has pioneered the conservation breeding of Western Tragopan at an exclusive breeding facility in Sarahan.

The Sarahan Pheasantry holds the first record of captive breeding of Western Tragopan in 1993. In 2007, the Central Zoo Authority identified the Western Tragopan as a priority species for conservation breeding and Sarahan Pheasantry as a coordinating zoo. The goal is to establish an *ex situ* population for species restoration purposes.

>> The Sarahan Pheasantry

The pheasantry has the distinction of being the only centre in the world where Western Tragopan is being bred. At Sarahan, the birds are kept in enclosures in undisturbed conditions that closely simulate their natural environment. Each breeding pair has access to 80m² of ground space and 3-4m of vertical space. Bamboo, grass tussocks and

other wild plant species are planted within the enclosures. Interconnected perches are placed at various heights within the aviaries to mimic a forest canopy.

Tragopans here are fed a mix of fruit and vegetable, locally-grown greens, seeds, sprouts, boiled eggs and eggshell grit. The food is offered early in the morning and a proportion of the food is scattered inside the aviaries to encourage foraging behaviour in the birds. As the enclosures consist of natural ground substrate and edible plants from the species' habitat, the birds also forage for insects and fresh vegetation. Freshly grown sprouts are also offered to chicks and young birds. Food items collected from the natural habitat, like berries, flowers and leaves are provided occasionally.

During the breeding season, each female is provided access to 3-5 elevated nesting platforms (handmade bamboo



A Western Tragopan chick bred at the Sarahan Pheasantry

baskets) at varying heights, with dried moss and ferns as nesting material. The nests are concealed using lianas and tree branches. Perches are positioned at the nest to allow the female to skulk and facilitate tragopan chicks in walking to the nest for roosting. Breeding birds are remotely monitored using video cameras for hatching and chick rearing. Juvenile birds are housed with the mother until the following breeding season. All birds are fitted with uniquely numbered aluminum leg-rings.

>> **Back to the Wild**

From five individuals in 2004, the **stock has grown to 43 individuals (21 males and 22 females)** at Sarahan. This is the highest population size achieved since the inception of the conservation breeding programme. Over the years, the staff at Sarahan Pheasantry now

have adequate husbandry experience in keeping and breeding Western Tragopans. Since a steady population growth has been achieved at the centre, an experimental reintroduction of the species is being planned.

The aim of this reintroduction project is to re-establish populations of the Western Tragopan in areas where they occurred naturally in the past, but are currently extinct because of anthropogenic activities.

The reintroduction plan aligns with the IUCN guidelines for reintroduction and other conservation translocations (IUCN/SSC, 2013), guidelines for the reintroduction of Galliformes family for conservation purposes (World Pheasant Association, 2009) and key aspects of Western Tragopan ecology.

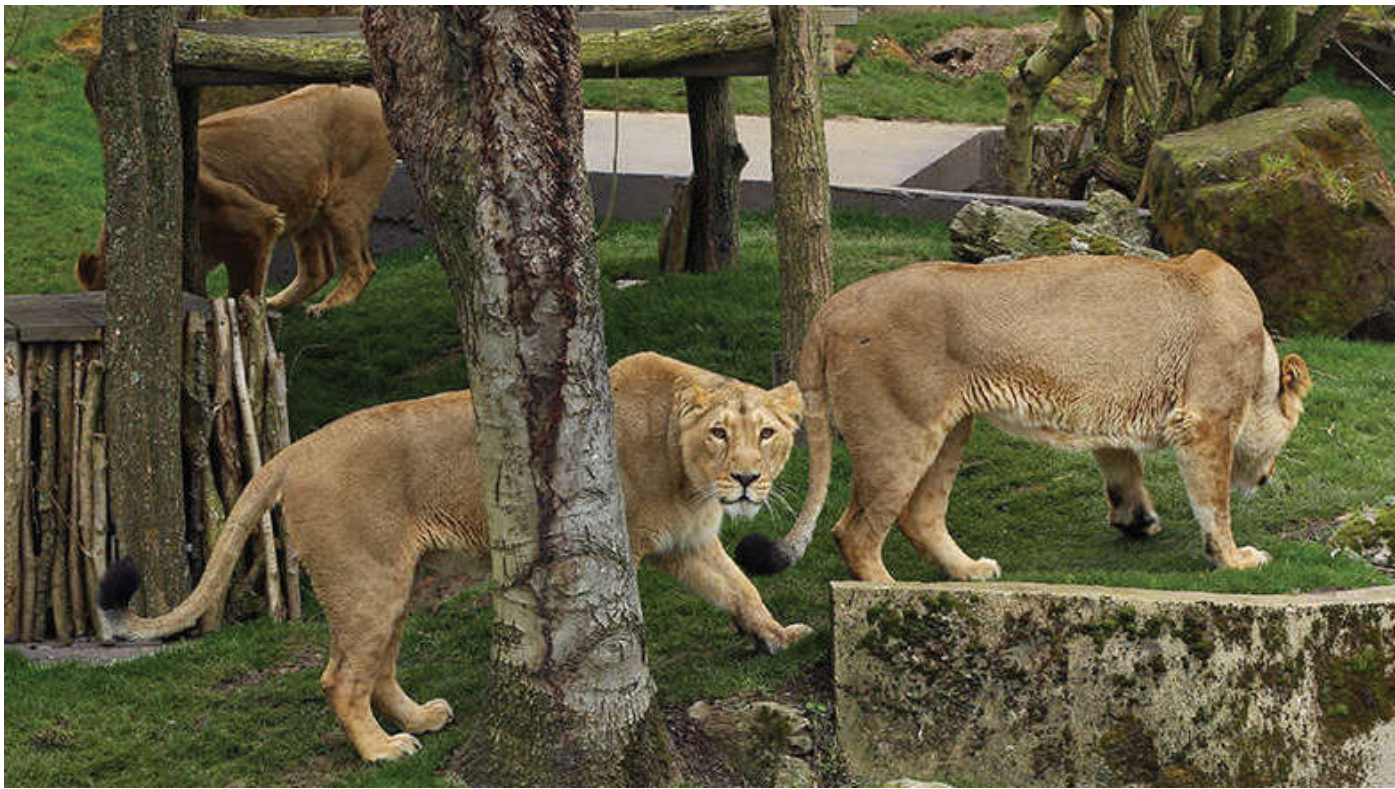


EXHIBIT SHOWCASE

Land of the Lions in the Heart of London

Text & Photographs: Zoological Society of London (ZSL), London Zoo

One of world's oldest zoos, ZSL London Zoo opened in London in 1828. Since then, the zoo has evolved to contribute pioneering research towards the scientific study and conservation of animals.

One of its most breathtaking exhibits, '[Land of the Lions](#)' transports visitors from London to India's vibrant Sasan Gir region in Gujarat, where they can get closer than ever to the zoo's resident [Asiatic Lions](#) (*Panthera leo ssp. persica*).

Auto-rickshaws, bicycles, sacks of lentils and spices, a replica of the Sasan Gir's train station waiting room and ticket office, a realistic and colourful depiction of a bustling market in Junagadh, shrines amidst the Girnar hills, rangers' dwellings, and even a life-size truck – all meticulously sourced

and shipped from India – are dotted around the 'Land of the Lions', both inside and out of the lions' domain, depicting the uniquely close relationship interlinking people and Asiatic lions in Gujarat. This was researched by ZSL's talented interpretation team with inputs from the Gujarat Forest Department, Wildlife Institute of India and the local Gujarati community.

Three walkways cover the 2,500m² exhibit with thrilling, [immersive Indian-themed areas for children and adults](#) to explore and learn about Gujarat, its culture and the majestic lions that are the pride of the state.

[A beautiful mosaic created by a local artists' collective](#) reiterates the importance of landscaping and design aesthetics while depicting animals in a zoo.



ZOO in focus

Nehru Zoological Park, Hyderabad

Text: N Kshitija, IFS, Curator, NZP Hyderabad; Photographs: NZP Hyderabad

Fancy spending your day seeing lions, tigers, bears, and bison, all in a single day? Maybe add a little detour through a butterfly garden, to get that elated feeling when these winged beauties flutter by? All this, and much more awaits you at the expansive complex of the Nehru Zoological Park (NZP) in Hyderabad!

Established in 1959, this 380-acre park focuses on conserving wildlife of the Deccan Peninsula, and houses an impressive collection of 172 species of animals and 2,072 specimens. A pioneering institution, it was the first in the country to establish a safari park (in 1974), nocturnal animal house (in 1982) and butterfly park (in 1998). Today, these are all popular visitor attractions, along with a reptile house and a 'Prehistoric Park' displaying fiber-glass dinosaur models. The zoo complex is also steeped in the city's history; adjoining it is the 'Mir Alam Tank bund' - an indigenous arch bund dam with 24 arches, that is nearly 200 years old.

Conservation breeding and rewilding

The zoo successfully runs animal breeding and reintroduction programmes for several species. Indian Chevrotain (*Moschiola Indica*), Blackbuck (*Antelope cervicapra*) and Sambar (*Rusa unicolor*) bred here have been released in Protected Areas across



Above: Bengal Tiger (*Panthera tigris tigris*) cubs born recently at NZP Hyderabad // Facing page, clockwise from top left: An experimental fish pond at the zoo; Golden jackal (*Canis aureus*) pups born during the lockdown; An in-house fodder plot created as part of the 'green zoo' initiative; A Bengal Tiger with her cubs; Papaya farming, also a part of the 'green zoo' initiative; Common Ostrich (*Struthio camelus*) chicks hatched at the zoo

Telangana. A crocodile breeding centre was also established in the 1980s for Mugger (*Crocodylus palustris*) populations, and big cats like the Bengal Tiger (*Panthera tigris ssp. tigris*) and Asiatic Lion (*Panthera leo ssp. persica*) have been bred here and sent to zoos across India as part of exchange programmes.

Conservation Outreach

The zoo is a major tourist attraction in the city. In 2018-19, NZP recorded a massive footfall of 28.27 lakh visitors and more than Rs 18.51 crores as revenue. The zoo provides recreational services to visitors and several civic amenities such as infant care centres, battery operated vehicles, AC Safari Buses, extended parking etc, set amidst huge sprawling lawns and beautiful landscapes for a family's day out. The 'green zoo' concept has received a major boost with initiatives such as organic farming, recycling and vermicomposting. As social distancing becomes the new normal in times of COVID, the zoo hopes to connect to its visitors through digital media, and by sharing educational talks for visitors online.





(top left and right) Old Burdwan House in 1910 and 2020; (bottom) An albino Indian Peafowl (Photos: Alipore Zoo)

from the pages of **HISTORY** **Alipore Zoological Garden, Kolkata**

Text: A K Samanta, IFS, Director, Alipore Zoo

Established in 1875, the **Alipore Zoological Garden**, popularly known as **Kolkata Zoo**, is India's oldest zoological park, built in response to public demand by the Government of Bengal. Preparations began in 1842 with contributions from Dr John McClelland, curator of Bengal Asiatic Society's Museum, Dr Joseph Bart Fayrer, President of Asiatic Society of Bengal, and Carl Louis Scwendler, Postmaster to the Government of India. In 1875, about 33 acres of land was approved, and a sum of ₹5,000 was sanctioned to begin construction. The zoo was inaugurated by Emperor Edward VII, the Prince of Wales, on 1st January 1876.

The first Indian superintendent of the Zoological Garden was Ram Brahma Sanyal. His observations and meticulous scientific records were published in 1892 in 'A Hand book of the Management of Wild Animals in Captivity in Lower Bengal', which became the first seminal work on captive care management in the world. The zoo continues to serve the people of Kolkata and currently, around 65 species of native and non-native animals are housed here.



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