ex-situ

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Central Zoo Authority
केन्द्रीय चिड़ियाघर प्राधिकरण

Ministry of Environment Forest and Climate Change

ADVANCING TOWARDS WILDLIFE AWARENESS

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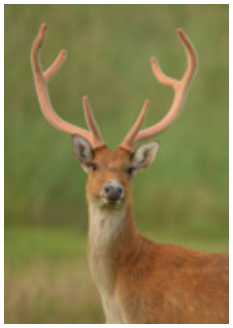

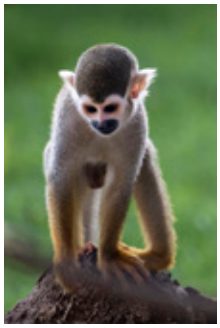

Cover and Back Cover Photo Credit: Dr. Sanjay Kumar Shukla, IFS

FROM THE DESK OF

MEMBER SECRETARY

Education in modern zoos is designed to foster scientific temper, ecological literacy, and responsible attitudes towards wildlife among diverse audiences. Structured educational programmes, interpretive signage based on species biology and conservation status, guided tours, school outreach initiatives, and citizen engagement activities enable visitors to understand the ecological roles of species, threats to biodiversity, and the importance of evidence-based conservation interventions. Zoos also increasingly serve as experiential learning spaces, supporting formal and informal education aligned with national biodiversity and environmental education goals.

Equally critical is the integration of scientifically designed enrichment programmes to enhance animal welfare and promote species-typical behaviours. Environmental, feeding, sensory, cognitive, and social enrichment strategies are now integral to captive management protocols. These interventions are informed by behavioural observations and welfare assessments, ensuring that animals are provided with stimuli that reduce stress, encourage natural behaviours, and support physical and psychological well-being.

Educational events such as wildlife weeks, conservation-themed exhibitions, keeper talks, interactive workshops, and celebration of internationally recognized environmental days further strengthen the interface between zoos and the public. Such events provide opportunities to disseminate scientific knowledge, showcase conservation successes, and highlight the role of ex situ conservation in complementing in situ efforts.

The Central Zoo Authority continues to emphasize capacity building, research, and standardization of best practices to ensure that education and enrichment efforts in Indian zoos remain scientifically robust and outcome-oriented. By integrating animal welfare science with conservation education, zoos are increasingly positioned as vital institutions contributing to biodiversity conservation, public engagement, and the long-term stewardship of wildlife.

Dr. V. Clement Ben
Member Secretary,
Central Zoo Authority

Photo Credit: Dr. Sanjay Kumar Shukla, IFS

42nd Meeting of the Governing Body of Central Zoo Authority

The Governing Body Meeting of the Central Zoo Authority held under the Chairpersonship of Shri Bhupender Yadav, Hon'ble Minister for Environment, Forest and Climate Change, Government of India on 22nd April 2025,at Indira Paryavaran Bhawan, Jorbagh Road, Aliganj, New Delhi.

Two-Day Workshop for Chief Wildlife Wardens and Zoo Directors/ Managers of the North-Eastern States in Assam

The Central Zoo Authority (CZA), in collaboration with the Assam State Zoo cum Botanical Garden, successfully organised a two-day regional workshop for Chief Wildlife Wardens and Zoo Directors/Managers of the North-Eastern States on 4–5 September 2025 at Radisson Blu, Guwahati.

The inaugural session was graced by Shri M. K. Yadava, Special Chief Secretary, Government of Assam; Dr. V. Clement Ben, Member Secretary, Central Zoo Authority; Dr. Vinay Gupta, Principal Chief Conservator of Forests (Wildlife) & Chief Wildlife Warden, Assam; and Dr. Ashwini Kumar, Director, Assam State Zoo cum Botanical Garden.

The workshop featured a series of technical sessions delivered by eminent experts from across the country. Dr. Sindura Ganapathi, PSA Fellow, Government of India, spoke on One Health and Collaborations, emphasising the need for cross-sectoral partnerships in wildlife health management. Shri Lakshminarasimha R, Director (Research and Conservation), GaiaMitra Collective Foundation, delivered sessions on Evidence-based Collection and Population Management and Modern Approaches to Zoo Animal Nutrition.

Shri P. C. Tyagi, Retired IFS and former PCCF & Chief Wildlife Warden, Tamil Nadu, along with Dr. Sulata Maity of the West Bengal Zoo Authority, addressed Zoo Master Planning and Species-specific Environmental Enrichment. Disaster preparedness in zoological parks was discussed by Shri Hemanth Kumar, Retired IFS, Uttar Pradesh.

Healthcare and conservation genetics formed key thematic areas of the workshop. Padmashree Dr. K. K. Sarma, Professor, College of Veterinary Science, Khanapara, spoke on Challenges and Clinical Practices in Captive Animal Healthcare, while Dr. Uma Ramakrishnan, NCBS, presented insights on Genetics and Genomics of Endangered Big Cats. Dr. Bhaskar Choudhury, Centre for Wildlife Rehabilitation and Conservation, Kaziranga, shared field experiences on managing rescued animals and wildlife emergencies. Dr. Debabrata Phukon, Veterinarian, Assam State Zoo, discussed Science-based Approaches to Optimising Reptile Care.

Dr. Ashwini Kumar highlighted Best Practices in Zoo Management, and Dr. Parag Deka, Project Director, Pygmy Hog Conservation Programme, presented on Captive Breeding of the Pygmy Hog, a critically endangered species.

The workshop concluded with a working group discussion involving Zoo Directors and Chief Wildlife Wardens on Sustainable Zoo Management, followed by a valedictory address by Shri P. C. Tyagi.

The event provided an effective platform for knowledge exchange and capacity building, reinforcing the collective commitment to animal welfare, scientific zoo management, and wildlife conservation across Indian zoos.


Workshop for
ef Wildlife Wardens


Wardens
rs/Managers


Workshop for Chief Wildlife Wardens &
Zoo Directors/Managers

Human Approach Model to Nature Conservation Education

Text & Photos: Amarakshar V M, SFS, DCF & Executive Director, Shivamogga Zoo, Tiger & Lion Safari, Tyavarekoppa, Shivamogga, Karnataka

Introduction

The Changing Phase of Nature Conservation Education

There are several reports which emphasize on accelerated environmental degradation from 1980s. It is at that time Conservation Biology took birth as a separate discipline of study and the knowledge deficit model of Nature Conservation Education came into action. With the development of internet services, the information on conservation is a mouse click away to fill in the knowledge deficit and now the mode of Nature Conservation Education requires a Human Approach to promote care for the nature. The care is to collectively act with intention, to inquire, to get activated, internalized obligatory motivation for conservation.

The care includes cognitive, affective and behavioural components i.e., people must be informed, people shall recognize their behaviour causing degradation to the environment and understand the effect of their actions on the society wellbeing to alter their behaviours. The present Nature Conservation Education programmes and projects should bridge the deficit knowledge in the community with regard to the Conservation as well as promote the development of biophilic emotions.

With the pressing Conservation issues, the Nature Conservation Education is the main pedestal to carry out conservation projects and programmes. The initiatives and programme under Nature Conservation Programme should aim to trigger the latent innate connection of the human with nature to safeguard the vitality of the biodiversity by developing a *social fence* for conservation. The purpose of this conservation social fence is to discourage the individual actions, seemingly beneficial in the short term, lead to negative consequences for the group as a whole in the long run.

The Science behind Nature Conservation Education:

It is well documented through researches in the Environmental Psychology that the connecting with the nature releases the happy hormones viz. serotonin, dopamine and endorphins and these hormones are pivotal for generating biophilic emotions. And this biophilic emotions generates the care for the nature required for Community-based Conservation. And to get sensitized about natural elements the institutes viz. Zoos, Tree Parks and Eco-tourism facilities play an important role to ignite this latent love for the nature.

Scientific research suggests biophilic emotions is easily generated in kids so the private petting zoos are catching the limelight. When the child is exposed to petting zoo, he starts his journey to explore wildlife in the zoos which eventually takes him towards the wilderness area conservation and contribute in conservation efforts. Developing human approach models to rightly channelize the biophilic emotion is important and a bit tricky.

ZooVista Project- Experimental model for Human Approach Model of Nature Conservation Education:

Motivation for the project *ZooVista* at the Shivamogga Zoo is an attempt to create a virtual world of zoo animals which talks to its visitor on the role of Community-based Conservation. It is inspired by the *Disney Zootopia* movie (2016). This project was unveiled on March 3 to the celebration of World Wildlife Day.

1. **Aim:** To promote Conservation Education & Zoo Animals Adoption Programme through use of technology.

2. **Objectives:**
   a) To show the zoo short movies, documentaries specially crafted to children to promote Conservation Education & Awareness.
   b) To promote Zoo Animals Adoption Programme through a visual treat of Virtual Reality on Zoo Animals to its participants.

3. **Requirements:**
   a) Construction of an attractive interiors & exteriors to the condemn safari bus (15-Seater) so as to create a quality static theatre experience.
   b) Development of Shivamogga Zoo documentaries/movies through volunteer's support.
   c) Recordings of VR video of Charismatic Zoo Animals viz. Tiger, Lion and Bear.
   d) Purchase of VR gears.

4. **Operations:**

   a) The zoo movies and documentaries are screened in two slots per day for children/visitors.

   b) A visual treat through VR for participants of Zoo Animals Adoption Programme.

   c) The Education Officer is in-charge of its operations.

5. **Outcome:**

   a) The project disseminates the role of Zoo in Conservation Education through movie/documentary screening.

   b) The project introduces the use of technology to promote Zoo Animals Adoption Programme.

   c) The project will develop close connection with the Zoo animals virtually and generate biophilic emotions in visitors.

Photo 1: *ZooVista Bus*

Photo 2: *Visitors watching a mini-short animated movie- The Teddy*

Short Animation Movie: Teddy- The Tale of a Brave Little Rescued bear

This short animation movie is co-produced by the Shivamogga Zoo and its volunteers was released on account of World Bear Day (23-March-2025) at the ZooVista platform to put forward the true story of the plight of a rescued bear with two characters named "Tunga" (representing Nature named after the Tunga River which flows through Shivamogga) and "Shiva" (representing those residents of Shivamogga who are disconnected with the nature). This story takes the human approach to explain in detail the plight of the rescued bear named "Teddy" after its rescue to its audience. It reiterates the proactive participation of the people for wildlife welfare in the distress condition with a message *"the love and care to the wildlife in distress weighs more than the conflict".*

This mode of Nature Conservation Education is emotion evoking to the audience and also it supports fund raising programme viz. Zoo Animal Adoption and Donation. Use this link to watch the mini-short https://youtu.be/44w20_ogkjM?si=pFF3pxo6aQ99NzgW

Photo 3: *Tunga listening the story of the Teddy's plight*

Photo 4: *Teddy snared to the barbed wire*

Educating for the Wild: SPZP's Conservation Learning Model

Text and photos by: Dr. Shashikant Sharma, Darshit Shah and Soham Mukherjee
Sardar Patel Zoological Park

Figure 1: Education Assistant engaging diverse visitor groups in discussions on animal behavior and welfare.

At Sardar Patel Zoological Park (SPZP), education is not an auxiliary service; it is a statutory mandate woven through visitor experiences, staff routines, and research agendas. Between October 2023 and December 2024 the zoo delivered structured programming to more than 55,000 students across primary schools, colleges and professional tracks. Within the single fiscal year April 2024-March 2025, that effort scaled to 65,368 learners from 372 educational institutions—reinforcing SPZP's status as western India's busiest conservation classroom.

SPZP has adopted a multi-faceted educational approach, tailored to reach diverse audiences ranging from school children to university interns and young professionals. Keeper Talks, guided walks and pop-up pledge corners convert casual visits into inquiry-based learning. Tracking shows that an active Keeper Talk almost doubles average exhibit dwell time—from 12 minutes 30 seconds to 21 minutes 18 seconds—indicating deeper engagement with both animals and messaging (Figure 1). To amplify reach, the education team marked 37 global conservation observance days with craft stations and enrichment demonstrations, seamlessly integrating science communication into festive moments.

Building power: Docents, Interns and Staff

SPZP's docent programme has trained four intensive batches (cumulative 70 student volunteers). A highlight was Wildlife Week 2024, where ten life-science undergraduates delivered 81 hours of bilingual interpretation on the public loop (Figure 2).

Thematic audio-visual sessions further reinforce environmental literacy, with topics such as snakebite awareness and habitat conservation presented in a format accessible to younger audiences. These sessions are typically followed by interactive discussions to promote reflection and comprehension. SPZP also utilizes commemorative occasions such as Wildlife Week and World Environment Day to engage broader communities (Figure 3). Through curated workshops, exhibitions, competitions, and public sessions, the zoo extends its educational mission beyond institutional boundaries.

Figure 2: Docent training to equip student volunteers in wildlife interpretation and visitor engagement.

Figure 3: Public session on World Water Day at Sardar Patel Zoological Park, using thematic audio-visual education to enhance environmental awareness among students.

In addition to public programmes, SPZP has invested significantly in academic and professional capacity-building. A month-long summer internship conducted in May 2024 provided undergraduate students with immersive exposure to animal management and interpretive services. Complementing this, the veterinary internship programme trained 286 students across 22 batches in diagnostic procedures, preventive healthcare, husbandry practices, and rescue protocols under the mentorship of in-house veterinarians (Figure 4). Further, a five-day trainee workshop held in March 2024 introduced participants to exhibit design, animal welfare assessment, and effective public communication. Internal staff capacity is continuously enhanced through periodic training modules focused on interpretation techniques, visitor interaction, and evolving standards in animal welfare (Figure 5).

Figure 4: Hands-on veterinary training session during internship, focused on diagnostics, treatment, and animal care under expert supervision.

Figure 5: Capacity-building workshop for training staff and trainees in exhibit design, animal welfare assessment, and public engagement techniques.

Survey comments have already informed tangible actions: Anti-glare films are being trialled on glass enclosures after some guests reported reflection issues. Docent scripts now incorporate behaviour-change prompts—a strategy validated by a 22–23 % knowledge jump and post-visit plastic reduction reported in school groups. A pilot mobile-app feedback loop is in development to capture real-time visitor insights and link them directly to operations..

Looking forward, SPZP remains committed to expanding and evolving its educational portfolio. Key priorities include the integration of digital learning platforms, the refinement of docent training tools, and the initiation of long-term outcome tracking to assess behavioral changes among programme alumni. Through these advancements mentioned in the Table 1, SPZP aspires to ensure that every visit to the zoo becomes not just informative, but transformative.

Table 1: Comprehensive Data Checklist for the fiscal year April 2024- March 2025 from Education & Outreach department, SPZP

Sr.	Activity	Number
1.	**Program Portfolio**	1. Conservation Days - 37 2. Keeper's Talk - 74 3. Bird Watching Sessions - 25 4. Docent Program - 1 5. Summer Internship - 1 6. Zoo Management Internship - 1 7. Veterinary Internship - 22 8. Campus Bird Count - 1 9. Outreach Programs - 2 10. Instagram Reels - 17 11. Instagram Post - 29 12. Collaboration with university - 2 13. Number of Schools & Colleges catered - 372 Schools & Colleges, 65368 Students 14. Dissertation Thesis - 8 15. Research Publication (Published) - 6 16. Research Publication (Submitted) - 1 17. Staff Training Program - 5 18. Signage Placements: 10 19. Plantation Drives - 3 20. Guided Walks on every weekend
2.	**Number of Schools & Colleges**	Total: 372 institutions from 6 states • Gujarat: 180 • Maharashtra: 120 • Rajasthan: 30 • Madhya Pradesh: 25 • West Bengal: 9 • Karnataka: 8 Total Students Reached: 65,368
3.	**Docent Program**	• Conducted from 01–09 October 2024 • Participants: 10 (from Gujarat University) • Duration: 9 Days | 81 Hours of comprehensive training
4	**Internship Program**	• Summer Internship (01–31 May 2024): 7 students from the Department of Zoology, MSU • Zoo Management Internship (08–22 March 2025): 6 interns from Life Science Education Trust • Veterinary Internships: 22 programs | 286 students trained (1-week duration each)
5	**Academics & Research**	• Articles Published: 6 • Articles Submitted to Journals: 1 • Dissertation Theses Guided: 8
6	**Campus Bird Count**	• Dates: 14–17 February 2025 • Participants: 8 students • Species Recorded: 73 bird species • Platform: Submitted to eBird

Sr.	Activity	Number
7	Social Media Management	• Instagram Reels: 17 • Instagram Posts: 29 • TripAdvisor Rating: 4.0 • Google Rating: 4.4
8	**Signage Placements**	Over 10 animal, informational, and directional signages installed regularly
10	**Staff Training** 1.Animal Management Staff Capacity Building Program 2.Field Staff Training Program	Animal Management Capacity Building: • 05–06 July 2024 – Led by Mr. Lubosh Tomiska & Mr. Frantisek Juna • 26–27 July 2024 – Led by Mr. Andrew Beer (Focus: Nutrition & plantation in exhibits) Other Trainings Conducted: • Fire Safety for all staff • Wildlife Conflict Management for keepers and guards • Public Interaction for keepers and drivers
11	**Visitor Experience**	• Average Dwell Time (General): 12.5 minutes • Average Dwell Time (Keeper Talks): 21.3 minutes • Visitor Satisfaction Score (Overall): 4.1/5 • Visitor Satisfaction Score (During Events): 4.6/5 • Repeat Visit Intention (General): 62% • Repeat Visit Intention (Post Keeper Talks): 78%
12	**Partnerships & Collaborations**	Ongoing collaborations with: • Department of Zoology, MSU Baroda • Department of Zoology, Gujarat University, Ahmedabad Hosted the "Treasure Hunt" event of National Botany Fest 2025, organized by MSU Botany Department
13	**Recognition & Compliance**	• May 2024: Felicitated by the Department of Zoology, MSU Baroda on World Biodiversity Day • March 2025: Appointed Distinguished Judge for Open House 2025 – "Samnvay: The Symphony of Life • Special reports on Lion Day. Tiger day and Environment Day celebrations were sent to CZA
14	**Sustainability & Impact Indicators**	• Plantation Drives with Visitor Participation: 4 • Conservation Pledge Activities: 3 • Research Activities Related to Sustainability or Conservation: 3
16	**Evaluation & Monitoring**	Feedback on learning from educational initiatives conducted on: Visitors (Jan–Mar 2025): • Pre-score: 62% | post-score: 84% | Learning gain: +22% Behaviour-Change Follow-ups: • 68% avoided single-use plastics post-visit • 42% used reusable bottles • 70% pledged to discourage illegal pet trade after Wildlife Week sessions

Zoo Venture Programme

Text & Photos: P. Shankari, Zoo Educator, Arignar Anna Zoological Park, Vandalur

Zoo Venture: Expanding Learning Horizons for Government School Students

Arignar Anna Zoological Park, Vandalur, continues to strengthen its role in zoo education through impactful Zoo School programmes. As part of its commitment to promoting conservation education among government school students, the zoo has recently revised entry fees to ₹ 20 for all government school students and teachers, a significant reduction from the earlier rates (₹ 90 for adults and ₹ 50 for children).

To further support inclusive education, the zoo launched the **Zoo Venture Programme** in July 2025, exclusively for Government and Government-aided Home Care Schools. Held every Monday from 10:00 a.m. to 3:30 p.m., this free initiative accommodates up to 50 students per batch and includes:

- **Interactive learning** on animal behavior and ecological roles
- **Expert-led sessions** by zoo Biologists, and Educator
- **Guided tours** to enhance real-time field experience
- **Documentary screenings** on wildlife and conservation

Along with refreshments and educational material to the participants.

Schools can register online at https://aazp.in/zoo-venture/ with an approval letter from the principal.

Since launch, **253 students across five batches** have participated, with overwhelmingly positive feedback on the learning experience and exposure to wildlife conservation.

In addition, the **Zoo Explorer Programme**, for private schools, planned to happen on every Thursday of the week and has welcomed over 400 students and this paid structured sessions includes guided tours and expert talks.

The Zoo School, Arignar Anna Zoological Park continue to be a valuable platform that nurturing a generation that is more aware and sensitive toward nature and its conservation.

Reimagining the Zoo Experience: A Study on Visitor Feedback and Immersive Engagement at Sardar Patel Zoological Park

Text & Photos: Dr. Shashikant Sharma, Darshit Shah and Soham Mukherjee
Sardar Patel Zoological Park

Contemporary zoological parks serve a purpose far beyond recreation; they function as vital centres for education, conservation, scientific research and public engagement. Sardar Patel Zoological Park (SPZP), situated in Ekta Nagar, Gujarat, exemplifies this progressive model. With more than one million guests in FY 2024-25—1,023,981 Indian visitors alone—SPZP has become a national hub for experiential learning and biodiversity conservation.

Between January and May 2025, the education team collected 1,096 survey responses to evaluate how effectively the park engages and informs its audience. The aggregated scores (Table 1) reveal consistently strong performance across all key metrics, mirroring independent sampling in the Annual Report that averaged 4.1/5—rising to 4.6/5 on special event days.

Table 1: Average visitor ratings across key experience categories at Sardar Patel Zoological Park, Ekta Nagar

Feedback Category	Average Rating (Out of 5)
Entrance Experience	**4.44**
Design & Cleanliness	**4.47**
Animal Viewing	**4.33**
Learning Experience	**4.40**
Other Attractions e.g. interpretation centre	**4.37**
Utilities and Amenities	**4.37**
Overall Experience	**4.32**

Seamless First Impressions

Visitors praised the entrance for intuitive signage, efficient ticketing and eco-themed décor—an impression reinforced by recent upgrades such as new way-finding boards and five clearly marked assembly points (Fig. 1). Accessibility has also improved through fifteen light-weight wheelchairs and ramp enhancements.

Design, Cleanliness & Circulation

A logical path network shaded rest areas and rigorous cleaning protocols earned the highest category score (4.47). SPZP's "living classroom" philosophy ensures that infrastructure keeps pace with interpretation needs: ten bilingual panels installed this year brought 100 % of the primary loop into compliance with the new signage standard.

Figure 1: Main entrance of Sardar Patel Zoological Park, rated highly by visitors for accessibility, thematic design, and visitor-friendly ticketing infrastructure.

Figure 2: Aerial view of Sardar Patel Zoological Park showcasing its thematic zoning, structured pathways, and landscape design—contributing to a high visitor rating

Wildlife Encounters That Respect Welfare

Figure 3: Visitor-animal interaction through a glass viewing panel at Sardar Patel Zoological Park.

Glass-fronted Experiential Viewing Spaces (EVS) allow close yet respectful observation of flagship species such as Tigers, white lions, jaguars and orangutans (Fig. 3). Behavioural studies show that mean exhibit dwell time is 12 min 30 s, jumping to 21 min 18 s when a Keeper's Talk is in progress —evidence that welfare-centred presentation paired with live narration deepens engagement.

Learning Opportunities

Rated 4.40, educational offerings range from keeper talks and docent-led walks to multimedia sessions on conservation issues. During FY 2024-25, 37 international conservation days, 74 keeper talks and 25 dawn bird walks created layered learning moments for diverse audiences.

Interpretation Centres & Digital Content

Interactive kiosks, touchscreen quizzes and thematic exhibits extend the narrative beyond live displays. Online, 17 Instagram reels and 29 posts generated 1.2 million impressions, while Google Reviews stabilized at 4.4/5, a useful triangulation of visitor sentiment.

Comfort & Inclusivity

Amenities scored 4.37, reflecting investment in battery-operated vehicles, grey-water-recycling washrooms and shaded sit-outs. Wheelchair-accessible toilets and ramps further ensure that experiences remain barrier-free.

Figure 4: Keeper-led interpretive talk at Sardar Patel Zoological Park, enhancing visitor engagement and conservation awareness.

Wildlife Awareness Centre at Guindy Children's Nature Park, Chennai

Tamil Nadu Forest Department

Text & Photos: Dr. N. Baskar, Biologist, Guindy Children's Nature Park, Chennai, Tamil Nadu

Conservation and Awareness Facilities:

Guindy Children's Nature Park is situated in the heart of Chennai Metropolitan City, within Guindy National Park. It serves as a unique habitat and plays a vital role in imparting environmental education to the public, especially to children. Apart from being one of the busiest tourist centres of attraction, the park harbours around 50 species representing both the Western and Eastern Ghats, including small mammals, aquatic birds, exotic bird species, and common reptiles. The ex-situ conservation centre provides valuable information on forest types and biodiversity. Over the years, it has earned a reputation and trust for its dedicated objectives in promoting conservation education among the younger generation.

Guindy National Park, located in the metropolitan city of Chennai, is one of the smallest national parks in the world and represents one of the last remaining habitats of relict vegetation, namely the Carnatic Coastal or Tropical Dry Evergreen Forest type of the Coromandel Coast. The biodiversity centre of the Park houses over 350 species of plants, including trees, shrubs, climbers, herbs, and grasses. The Park also supports a rich faunal diversity comprising a wide variety of insects, more than 185 species of birds, 113 species of butterflies, several species of reptiles and amphibians, and a few wild mammals that occur naturally within the park. Some of these wild animals are also displayed in the Guindy Children's Park as captive live exhibits. In addition, many endemic and endangered species of mammals, birds, reptiles, and amphibians are represented in the Eco-Centre through life-like models. These exhibits play a vital role in creating awareness among visitors regarding the significant species of Tamil Nadu that may not be present within the Park, either in the wild or in captivity.

Even among the animal species maintained alive within the Park, not all of them are active during the daytime. Notable examples include nocturnal animals such as civets, lorises, and owls. In addition, secretive animals like porcupines, jackals, and foxes seldom exhibit their natural behaviour when observed by visitors in the enclosures.In order to meet the expectations of curious visitors, particularly children, the Eco-Centre has been established. This facility provides life-like models of such animals, along with representations of their vocalizations, calls, and salient behavioural traits, which are otherwise difficult to observe in live conditions.

The management has recently established new and innovative modern models to meet the expectations of the increasing number of visitors. Incorporating advanced interpretation methods and state-of-the-art facilities, the Eco-Wildlife Awareness Centre has become a valuable and admirable addition to the Park.The Park receives nearly 9 lakh visitors annually. The visitor profile comprises children, peer groups, scholars, corporate representatives, and the general public from different parts of the country as well as from abroad, at regular intervals.

Tree Plantation Drives: Active community participation in habitat restoration and green space development – 100+ participants planted 1000 native trees on World environment day 2025.

Wildlife Sensitization Campaigns on Wildlife Week Celebration 2025

Conservation Researchers and Educators

The centre's dual role as both as a Mini Zoo facility and an active educational institution positions it uniquely to bridge the gap between wildlife appreciation and conservation action.

An advanced and attractive air-conditioned Wildlife Awareness Centre has been established in the Park, the first of its kind in the State. The camouflaged cave-model centre is located at the heart of the Park, at a distance of less than 300 metres from the ticket counter. The facility has an area of approximately 11 x 11 metres.The Awareness Centre is designed with rock models forming the exterior façade and a splendid lawn at the entrance. Naturalistic features such as tree cover, termite mounds, and cave-style entry and exit points have provided a complete facelift to the facility. A small pond has been created amidst the lawn to highlight the pond ecosystem and the role of microorganisms in maintaining aquatic health.

The entry point is shaded by Pongamia pinnata, while the exit is flanked by Sapindus emarginatus. Other species such as Azadirachta indica, Ficus racemosa, Mimusops elengi, along with creepers, shrubs, and grasses, have been planted at suitable locations to enhance the ambience for visitors. The green canopy provides natural camouflage to the centre, adding to its attraction.The interior of the Centre showcases life-like models of the diverse flora and fauna of the Western Ghats and Eastern Ghats, offering visitors an exciting and educational experience.

Ecosystem Interpretation and Facilities:

The Wildlife Awareness Centre is a rich and innovative facility that symbolizes the various typical ecosystems found in Southern India. Compared to similar initiatives elsewhere, this Centre is richer both in quality and quantity, being the first of its kind in the country, functioning with the objective of enlightening visitors about mammals, birds, reptiles, and their conservation significance.The Centre encompasses different habitat types with background vegetation such as trees, shrubs, and creepers. Suitable habitats have been created to house animal models, effectively exhibiting the different layers of forest ecosystems. Artificial waterfalls have been installed to create a gentle rain effect, beginning as a stream that runs in front of the visitors' seating area. The combination of waterfalls, illumination effects, realistic animal models, and accompanying calls stimulates wildlife interest among the audience and encourages repeated visits to the Centre.

Different kinds of creepers and leaves have been strategically placed within the arena to conceal artificial structures, ensuring a naturalistic environment. Species-specific and ideal habitat structures have also been created inside the facility, including rock-model caves, mounds of different sizes, dense shrubs, tree holes, perching points, and tree branches. These serve as effective enrichment devices, making the displays both realistic and educational.

Eco-Centre – Visitor Facilities:

The Eco-Centre can accommodate about 20–30 visitors at a time. For adults, seating arrangements are available for approximately 20 persons, whereas for school children, more than 30 can be comfortably accommodated to view the programme.Gender-specific seating arrangements have been provided for the convenience of the public. An emergency electricity back-up facility is available to ensure uninterrupted functioning of the programme during power failures.

Forest personnel and other designated staff will remain present throughout each session to ensure the smooth conduct of the recorded programme without causing any inconvenience to the visitors.

Eco-Centre – Visitor Profile and Reception:

Among the visitors from across the country and abroad, ranging from children to senior citizens, certain age groups find the programme particularly engaging. School children, the younger generation, and foreign visitors who are keen to learn more about India's wildlife find the Eco-Centre programme especially attractive and useful. Many city-based schools make advance bookings for the Eco-Centre programme and schedule their visits on convenient days to participate in the sessions at the Park. In several cases, schools visit the Park exclusively for the Eco-Centre programme, after which they often conclude their visit.

Eco-Centre – Educational Artifacts and Exhibits:

The artifacts displayed in the Eco-Centre are life-sized animal models, created and positioned within different habitat settings to enhance the understanding of forest ecosystems. The diversity represented includes animal and plant species largely found in the Western Ghats, along with a proportion of local species. While captive centres and zoological gardens across the country primarily focus on mega fauna, only a handful of zoos exhibit the lesser-known species. At the Eco-Centre, models of several hard-to-see species, such as algae, lichens (epiphytic and lithophytic), and terrestrial orchids, are displayed to highlight their crucial roles in the ecosystem. Teachers accompanying school students have shown great interest in these exhibits. They use the models of taxa belonging to Thallophyta, Bryophyta, and Xerophyte to explain ecological functions, thereby imparting conservation awareness and ecological education to the younger generation.

Eco-Wildlife Awareness Centre – Audio-Visual Interpretation:

The animal models in the Eco-Wildlife Awareness Centre are exhibited with proper lighting arrangements, focusing attention on the species, accompanied by background audio narration providing key information about each species. The audio-visual programme, with a duration of about twenty minutes, is synchronized to effectively explain important concepts of nature and wildlife conservation. This newly established Centre has become a significant crowd-puller, attracting a large number of visitors, particularly school children. The exhibits include realistic replicas of mega-vertebrates such as elephants, predators, and raptors, in addition to reptiles and birds, all presented with systematic and fascinating illumination.

Role of the Tamil Nadu Forest Department in Zoo Management:

The Tamil Nadu Forest Department plays a pivotal role in the management of zoos across the State by placing them under the administrative control of the Zoo Authority of Tamil Nadu (ZAT), which is headed by the Director of the Arignar Anna Zoological Park, Vandalur. The Arignar Anna Zoological Park, being one of the largest zoos in the country, serves as a modern and model zoo in the State. It has several innovative and inspiring establishments to its credit, including the Lion Safari, Deer Safari, and Bison Safari. The Nocturnal Animal House is another notable facility that has brought considerable recognition and reputation to the park. The Wildlife Awareness Programme of the Zoo has been effectively implemented through various initiatives such as the Zoo School, Zoo Club, Zoo Outreach Programme, Volunteers Programme, and the Zoo Club Newsletter, thereby strengthening conservation education and public participation.

Guindy Children's Park – Visitor Profile and Eco-Cent:

Guindy Children's Park has been receiving visitors from various parts of the State and the country, including a significant number of foreign tourists. The recent addition of the Wildlife Awareness Centre has been widely appreciated by animal lovers, the general public, and academicians alike.This Centre serves as a comprehensive index of the different forest ecosystems, ecological successions, ecological niches, and the calls of various groups of animals, viz., mammals, birds, reptiles, amphibians, and insects.Upon entering the Centre, visitors experience an immersive jungle-like ambience, which gradually transitions into a structured learning environment. The facility functions as an important eco-education centre, enabling visitors to understand and appreciate the diversity of ecosystems. Through special effects such as simulated rain, realistic animal model displays, and synchronized audio-visual interpretation, the Centre offers an engaging twenty-minute programme designed to enhance conservation awareness.

Eco-Centre – Influence and Comparative Facilities:

The innovative Eco-Centre at Guindy Children's Park has kindled curiosity among forest managers, inspiring them to initiate similar facilities in their respective regions. For instance, the Nanmangalam Forest Division has recently established a Wildlife Awareness Centre to cater to visitors returning from nature trail walks and treks in the area. However, the Nanmangalam Wildlife Awareness Centre is limited in terms of diversity, with fewer animal models and flora arrangements that are locally distributed. The number of visitors and the frequency of shows in this Centre largely depend on crowd conditions. In contrast, the Eco-Centre at Guindy Children's Park portrays a much greater biodiversity, both in fauna and flora, thereby offering a more comprehensive and educational experience than the Eco-Centre of the Nanmangalam Reserved Forest.

Eco-Centre – Role in Training and Educational Impact:

The Forest Training Colleges situated in various parts of the country have included visits to this Centre as part of their field trips, particularly within the Chennai Wildlife Division. Participants often show keen interest in recording the animal vocalizations played in the Eco-Centre for use in their field assignments. Training officers in charge of Forest Field Officers' courses also encourage staff to prepare similar eco-notes to disseminate the message of wildlife conservation within their respective jurisdictions. It is noteworthy that, since the establishment of the Eco-Centre (post-2014), the number of visiting schools has increased significantly compared to earlier years. More importantly, beyond the numerical increase in school visits, interactions with children reveal a marked and visible curiosity and enthusiasm to experience the Eco-Centre, reflecting its effectiveness as a conservation education tool.

Lister important animal models exhibited in the Wildlife Awareness Centre Guindy

Common name	Scientific name	Where found naturally
Asiatic Elephant	Elephas maximus	South East Asia
Indian Panther	Panthera pardus	Indian Subcontinent
Indian Bison	Bos gaurus	North ease India
Lion tailed Macaque	Macaca silenus	Western Ghats
Nilgiri Langur	Trachypithecus johnii	Western Ghats
Indian Giant Squirrel	Ratufa indica	South Asia
Sloth Bear	Melursus ursinus	South East Asia
Nilgiri Tahr	Nilgiritragus hylocrius	South India
Marten	Martes flavicula	South India
Indian Oriole	Oriolus oriolus	Indian Subcontinent
Paradise Fly Catcher	Tersiphone paradisi	Asia
Horn bill	Buceros bicornis	Western Ghats, N.E. India
Tree pie	Dendrocitta vagabunda	India
Black bulbul	Hypsipetes leucocephalus	India, in wet forests
Black baza	Aviceda leuphotes	Eastern Himalayas
White bellied wood pecker	Drycopus javensis	Tropical Asia
Bay owl	Phodilus badius	South east
Pitviper	Trimeresurus sp.	Wet hill-forests of India
Scorpion	Scorpion spp	South Africa and South Asia
Lime Butterfly	Papilio demoleus	South India

The unique and enchanting wildlife information center was inaugurated and thrown open to the public by the Honorable Tamil Nadu Forest Minister Thiru. M. S. M. Anandan on 08.07.2014 Some encouraging feedbacks from the visitors. The show was amazing and very useful for children specially. Here in the zoo no of animals and birds are kept in their natural habitat and this leads to watch these at nature's best.

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Enrichment of the Environment and Assessment of its Impact on Six Captive Species of Primates at North Bengal Wild Animals Park (Bengal Safari), Siliguri, West Bengal, India

Text & Photos: Sudeb Sarkar, Nick Doley, Abhishek Chowdhury, Vijayakumar E.
North Bengal Wild Animals Park (Bengal Safari), Siliguri, West Bengal

The concept of environment enrichment is relatively new. For primate species, captivity presents significant challenges. Captive animals might display behavior patterns that correspond to their wild behaviours when housed in naturalistic settings with enrichment designed to meet the distinctive requirements for each species. The purpose of the research study was to investigate whether each of these primate species behaviour and utilization of space were altered with enrichment implementation.

Fig.1. Hoolock Gibbon (Hoolock hoolock) and Spectacled Langur (Trachypithecus obscures) enclosures at NBWAP.

This study includes individuals of six non-human primate species at North Bengal Wild Animals Park (Bengal Safari) which are Hoolock Gibbon (*Hoolock hoolock*), N=2; Spectacled Langur (*Trachypithecus obscures*), N=2; Mandrill (*Mandrillus sphinx*), N=3; Mona Monkey (*Cercopithecus mona*), N = 2; Javan Lutung (*Trachypithecus auratus*, N =01 and Red shanked Douc (*Pygathrix nemaeus*), N = 01. Various equipment, including puzzle boxes, concealed food items, conspecific vocalizations, predator vocalizations, wooden swing, log with bark, temporary shed, log perches, hanging fruits, natural vegetation, social interaction and uncommon objects etc. were used as enrichment in the present study. Enrichment management practices were planned regularly in the park based enrichment impact assessment.

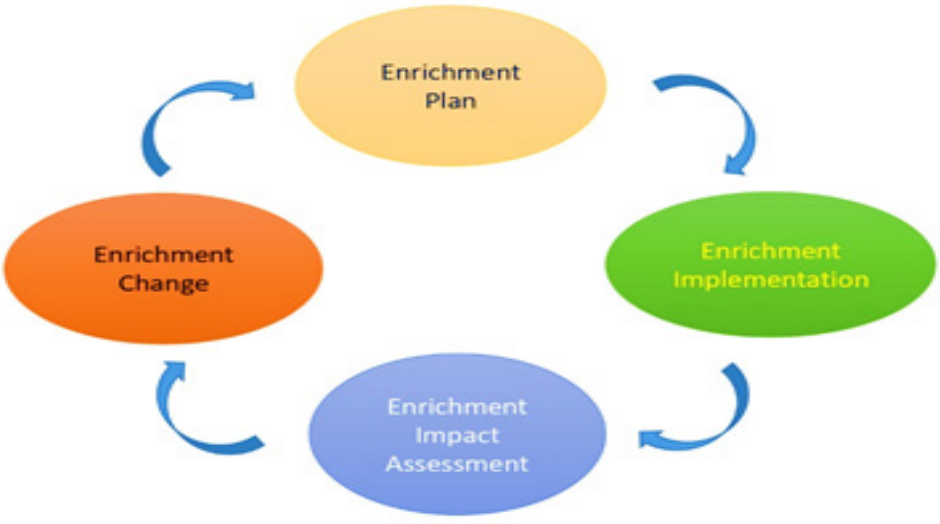


Fig.2. Schematic diagram of Enrichment Management Plan introduced in the park

Table.1. Enrichment implementation practices among the six primate species and their impact assessment analysis at NBWAP

Enrichment implemented	Enrichment Type	Pre-enrichment implementation feature	Modified or combined enrichment	Enrichment impact assessment	Enrichment Change
Log perches, swing and rope bridges	Physical habitat enrichment	Primate species were spending more time on the ground and specific locations within the enclosure.	Feeding and sensory enrichments were combined	Increased foraging behaviours and enclosure space utilization within the primate species	Enrichments were reused and size of physical structures modified according to the respective species space utilization and foraging patterns
Puzzle boxes	Cognitive, feeding, and sensory enrichment	Boredom seen in all the primate species with less activity budget	Puzzle boxes combined with feed enrichment	Increased foraging behaviours.	Puzzle boxes are reused and modified.
Bamboo feeder	Feeding and sensory enrichment	Boredom and less foraging activity within the primate species	Bamboo feeder combined with physical structures like swing and perches	Increased exploratory behaviour and play behaviour.	Bamboo feeder modified and reused
Hanging Coconuts and fruits	Feeding enrichments	Boredom and less foraging activity within the primate species	Feeding enrichments combined with physical structures	Increased exploratory behaviour and play behaviour. Foraging time also greatly increased.	Fruit diversity was expanded.
Natural vegetation	Physical habitat Enrichment	Unexploratory in nature. Stress related issues in primate species	Feeding and sensory enrichment combined with natural vegetation	Enclosure space utilization increased.	Different plant varieties are grown based on the requirements of each type of monkey.
Wooden ball	Cognitive and feeding enrichment	Unexploratory behaviour, less social interaction	Hollow wooden ball with feeding enrichment	Increased play Behaviour.	Enrichment was reused and size of the wooden ball changed
Temporary shed	Physical habitat Enrichment	Less social bonding and aggressive behaviour	Feeding enrichment within the temporary shed	Promoted social behaviours.	Replaced and resized
Concealed feeding	Food based cognitive and sensory enrichment	Boredom, less foraging time and inactivity within theprimate species	Feeding items concealed within the vegetation and wooden structures.	Exploratory and foraging behaviour were greatly increased among primate animals	Concealing position changed repeatedly

Enrichment implemented	Enrichment Type	Pre-enrichment implementation feature	Modified or combined enrichment	Enrichment impact assessment	Enrichment Change
Conspecific and Heterospecific sounds	Sensory enrichments	Less social interaction and aggression within the primate species	Combined with conspecific and heterospecific sounds together	These enrichments increases stress and behavioural diversity increased. Alertness in the primate species greatly increased.	Duration of the enrichment was increased.
Species-specific social grouping, interaction with keepers and visitors	Social enrichment	Aggression within individuals of the same species. Also Less social bonding and aggressive behaviour.	-	Promoted social behaviours like grooming and playing within the primate species.	Social grouping changed based on the displayed behaviour.

The amount of time that different primate species spent actively in the zoo enclosure was substantially increased by environmental enrichment. The equipment we utilized here functions as both an enrichment and a cognitive stimulus. Several fruit tree species have been provided in the paddock area of the primate enclosures to surge the foraging behaviour, such as, Mango (*Mangifera indica*), Jamun (*Syzygium cumini*), Guava (*Psidium guajava*), Banana (*Musa paradisiaca*), Jackfruit (*Artocarpus heterophyllus*), Papaya (*Carica papaya*) and Pomegranate (*Punica granatum*) etc. Along with that, different medicinal plants e.g. Neem (*Azadirachta indica*), Moringa (*Moringa oleifera*), Hibiscus (*Hibiscus rosa-sinensis*) and Tulsi (*Ocimum tenuiflorum*) etc. have also been planted to boost immunity naturally. As a result there has been a rise in the foraging behaviours of all six species of primates. Enrichments tools were designed in such a way so that every primate species can utilize and enjoy it. Over the course of the enrichment period, there has been a considerable increase in social interactions like grooming and bonding among individuals of all the primate species.

Education and Awareness Activities at Mysuru Zoo

Summer Camp 2025




World Environment Day - June 5th



World Giraffe Day - June 21st

Global Tiger Day – 29th July

World Lion Day

World Rhino Day – 22nd September

Youth Club Inauguration 2025–26



Workshop on Wildlife Health and Zoo Science - 28th to 31st August 2025



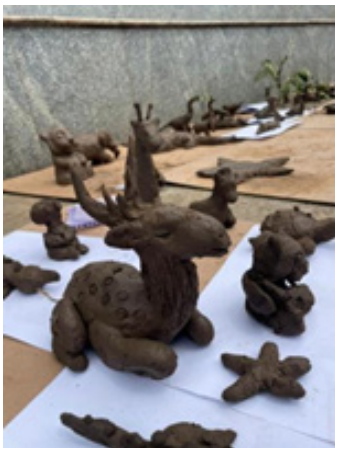
International Snakebite Awareness Day



World Gorilla Day – 24th September


Clay Art – Wild Animals





Face/Hand Painting



Educational Awareness activities at Kamla Nehru Prani Sanghralaya, Indore.

Wetland Day walk at backwaters near Indore Zoo conducted by Zoo for participants

Sparrow Day Celebration at Indore Zoo focussing on importance of birds conservation

Elephant Day Mascot walk with Indore and Mumbai zoo Director's at Indore Zoo elephant enclosure

Lion Day Walk at Indore Zoo

International Tiger Day quiz competiton conducted by Indore Zoo

Nature Walk on occassion of Wetland day for schools

Educational Awareness at Sundarvan Nature Discovery Centre, Ahmedabad

Reptile and Snake awareness Programme at Indian Institute of Technology, Gandhinagar (IIT Gandhinagar) – 13th August 2025. Total 500+ participants

Environmental Awareness Initiatives

Tree Plantation Drives: Active community participation in habitat restoration and green space development – 100+ participants planted 1000 native trees on World environment day 2025.

CENTRAL ZOO AUTHORITY

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