

MADRAS CROCODILE BANK TRUST

CENTRE FOR HERPETOLOGY

ANNUAL REPORT

2022-2023



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REPORT OF THE OFFICER IN-CHARGE

This has been a good year for Croc Bank. Visitor footfall has increased considerably and we welcomed the change after the prolonged pandemic lull. The various departments geared up to meet the challenge and activities were planned and executed. The curatorial, veterinary and education teams worked together to conduct programs and workshops throughout the year. Volunteers and interns helped out with many tasks and conducted specific projects assigned to them. The adoption program expanded, thanks to our well-wishers. Downsizing the zoo in terms of mugger numbers has opened up new avenues. We are all set to bring in more species to increase our repertoire to create unique experiences for the visitors. The Conservation Officer has continued to fight the noise mitigation issue. The Snake Conservation and Snakebite Mitigation Project Coordinator has represented Croc Bank in several forums and conferences both in India and abroad. The Zoo Director attended the National Conference for Zoo Directors, organised by CZA, at Bhubaneswar and Mysore and shared a presentation on Croc Bank and its activities. It was great to network with the other zoo directors, and discuss our collective challenges, triumphs and hopes for the future.

HISTORY OF THE ZOO

By the mid-20th century hunting crocodiles was a lucrative enterprise throughout the tropics, and by the 1970s, India's croc populations had been exploited to the brink of extinction. Realizing this fact, the Indian government protected all three species of Indian crocodilian under the Wild Life Protection Act of 1972.

Responding to the need of that time, Rom and Zai Whitaker established the Madras Crocodile Bank Trust in 1976 with the specific goal of securing breeding populations of the three species of Indian crocodile: the mugger (*Crocodylus palustris*), the saltwater crocodile (*Crocodylus porosus*) and the rarest of all, the gharial (*Gavialis gangeticus*). The Croc Bank was originally designed to be a living genetic repository of crocodiles for safekeeping, to protect and multiply until such time when they could be returned to restock their original wild habitats. This action was initially met with tremendous success, but today, release into the wild has stopped due to shrinking wilderness areas and the lack of suitable habitat.

Today Croc Bank is home to 15 species of crocodilians, three of which are listed by the IUCN as critically endangered with a further three listed as threatened. As the need for the conservation of reptiles grew, the Croc Bank increased its repertoire to include turtles, lizards and snakes and it came to be known as the Madras Crocodile Bank Trust and Centre for Herpetology in 2003. The Croc Bank now successfully breeds several species of threatened chelonians, including two listed as critically endangered. The Croc Bank is far more than a typical zoo and in fact our core operation is as much a field-based conservation outfit as it is a collection of captive animals for safekeeping with two permanent field stations and several projects running concurrently.

VISION

The Madras Crocodile Bank Trust and Centre for Herpetology (or Croc Bank) is the brainchild of the legendary Romulus Whitaker and a handful of like-minded visionaries who began work on the facility in 1976 in a desperate effort to save India's dwindling crocodile populations. Today, after more than 40 impressive years of cutting-edge science and grassroots education, Croc Bank remains a world leader in species conservation and natural landscape preservation.

MISSION

To promote the conservation of reptiles and amphibians and their habitats through education, scientific research and captive breeding. Efforts focus on, but are not limited to, Indian species and ecosystems and include both in situ and ex situ components.

OBJECTIVE

Conservation breeding of endangered species in captivity and maintenance of a gene bank for endangered reptiles.

Facilitate research and scientific studies on reptile behaviour, enrichment of enclosures.

Feeding, nutrition and reproductive biology.

Promote visitor education and awareness of the role of reptiles in the natural world and the importance of reptile conservation.

Ensure comfortable housing for all reptiles with special attention to health care, animal welfare and excellent husbandry.

ABOUT US

Basic Information about the Zoo

| S.No | Particulars | Information |
|------|-------------------------------|--|
| 1 | Name of the Zoo | Madras Crocodile Bank Trust/Centre for Herpetology |
| 2 | Year of Establishment | 1976 |
| 3 | Address of the Zoo | Post bag No.4, Vadanemmelli Village, East Coast Road, Mamallapuram-603 104 , Tamil Nadu, India |
| 4 | State | Tamil Nadu |
| 5 | Telephone Number | +91 9677013445 |
| 6 | Fax Number | - |
| 7 | E-mail address | info@madrascrocodilebank.org |
| 8 | Website | www.madrascrocodilebank.org |
| 9 | Distance from nearest | Airport: 39.7km |
| | | Railway Station: :41.6km |
| | | Bus Stand: :0km |
| 10 | Recognition Valid upto (Date) | |

| | | |
|----|--|---|
| 11 | Category of zoo | Medium |
| 12 | Area (in Hectares) | 3.4 |
| 13 | Number of Visitors (Financial Year) | Adult : 2,52,636 |
| | | Children : 74, 008 |
| | | Total Indian : 3,26,644 |
| | | Total Foreigners : 8,308 |
| | | Total Visitors:3,34,952 |
| 14 | Visitors' Facilities Available in Zoo | Snack Kiosk Portable Water Education Centre (All terrain) Wheelchair |
| 15 | Weekly Closure Day of the Zoo | Monday |

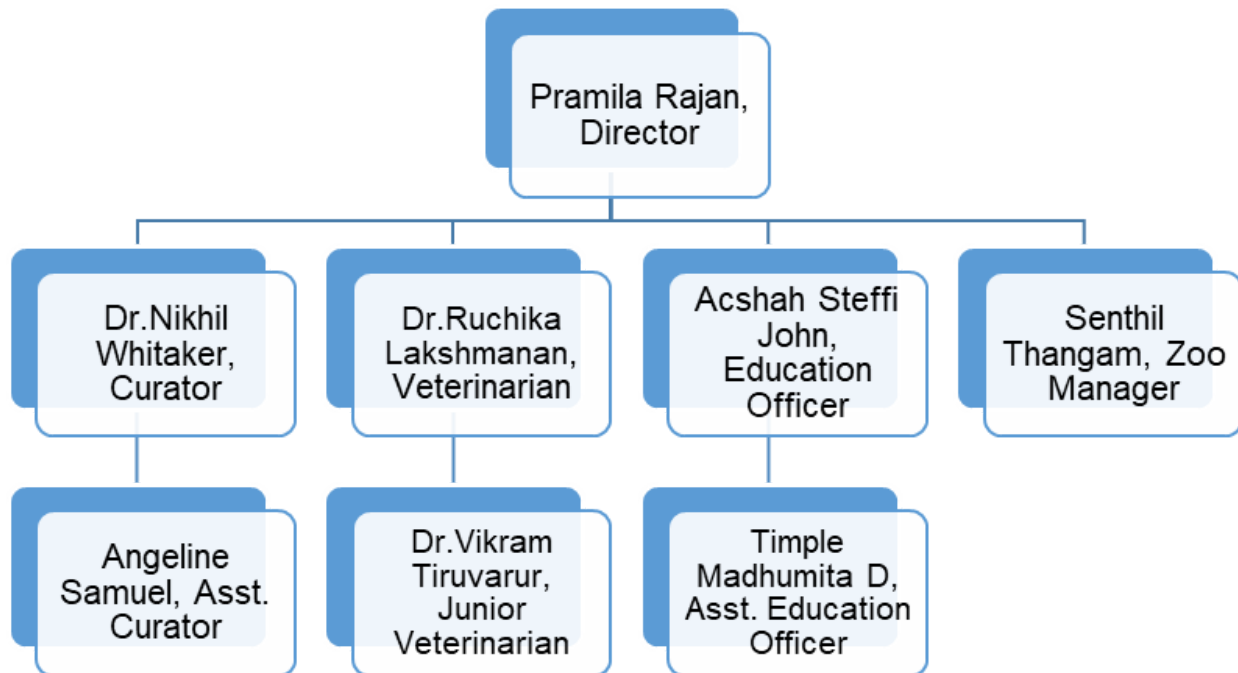
Management Personnel of the zoo

| | |
|---|------------------------|
| Name with designation of the Officer in-charge | Pramila Rajan |
| Name of the Veterinary Officer | Dr. Ruchika Lakshmanan |
| Name of the Curator | Dr. Nikhil Whitaker |
| Name of the Assistant Curator | Angeline Samuel |
| Name of the Biologist | V. Mohanasundram |
| Name of the Education Officer | Achsah Steffi John |
| Name of the Assistant Education Officer | Timple Madhumita D |
| Name of the Compounder/ Lab Assistant/Junior Vet | Dr. Vikram Tiruvarur |

Owner / Operator of the Zoo

| | |
|---|---|
| *Name of the Operator | Trust Operator Zai Whitaker, Managing Trustee |
| Address of the Operator | Madras Crocodile Bank Trust Post bag No.4, Vadanemmelli Village, East Coast Road, Mamallapuram-603 104, Tamil Nadu, India |
| Contact details/Phone number of Operator | +91 9487409737 |
| E-mail address of Operator | zai@madrascrocodilebank.org |

ORGANIZATIONAL CHART



HUMAN RESOURCES

| | |
|-------------------------|--|
| M. Mohan | Accountant |
| M. Pavithra | Assistant Accountant |
| V. Gangadurai | Chief Reptile Keeper (Retired in April 2022) |
| S. Nagarathinam | Chief Reptile Keeper |
| L. Gunasekaran | Maintenance Supervisor |
| T. Mohan | Supervisor, Entrance Area |
| C. Purushothuman | Senior Office Assistant |
| N. Selvamani | Ticket checker |
| R. Gnanamurthy | Ticket checker |
| E. Amutha | Enclosure Maintenance |
| J. Shanthi | Chelonian Keeper |
| M. Ramu | Driver |
| S. Janakiraman | Maintenance Assistant |
| N. Pushparani | Croc Shop Operator |
| G. Ashok Somai Magar | Chief Cook |
| S. Mohan | Cleaning and Maintenance Asst |
| G. Gowri Shankar | Animal Keeper |
| P. Boobalan | Animal Keeper |
| Tek Bahadur Somai Magar | Security Guard |
| Budibal Somai Magar | Security Guard |
| Krishna Somai Magar | Security Guard |
| V. Yuvarani | Enclosure Maintenance |
| A. Kumari | Maintenance and Cook |
| K. Elumalai | Maintenance Assistant |

CAPACITY BUILDING OF ZOO PERSONNEL

| Sl.No. | Name and designation of the zoo personnel | Subject matter of Training | Period of Training | Name of the Institution where the Training attended |
|--------|---|---|--|--|
| 1 | Angeline Samuel | Capacity Building Workshop for Zoo Biologists | 23 rd – 25 th November, 2022 | Central Zoo Authority and Nehru Zoological Park, Hyderabad |
| 2 | Nikhil Whitaker | Annual Research Conference | 16 th February – 2023 | Advanced Institute for Wildlife Conservation, Vandalur, |
| 3. | Ruchika Lakshmanan | Capacity Building Workshop for Zoo Biologists | 21st and 24th March, 2023 | Central Zoo Authority and hosted by GZRRC, Jamnagar |
| 4 | Timple D. Madhumita | National Capacity Building Workshop | 15 th – 17 th February 2023 | Central Zoo Authority and Mumbai Zoo. |
| 5 | Acshah Steffi John | Job Experience Program | February 2023 | International Zoo Educators Association and Zoo Brno, Czech Republic |
| 6 | Gnaneswar CH | Venom Conference | 22 nd - 26 th August, 2023 | Oxford, United Kingdom. |
| 7 | Gnaneswar CH | NAPSE Consultation | 26 th July 2022 | Ministry of Health and Family Welfare |
| 8 | Gnaneswar CH | World Congress of Toxinology | 15 th -21 st October, 2022 | Dubai, UAE |

ZOO ADVISORY COMMITTEE

a. Date of constitution: 1976

b. Members

- Samit Sawhny
- Ashish Gupta
- Kamini Sundaram
- M.M. Venkatachalam
- Venu Srinivasan
- Meera Anna Oommen
- Preston Ahimaz
- Nikhil Whitaker

c. Dates on which Meetings held during the year:

16/04/2022, 09/07/2022, 25/10/2022 & 14/01/2023

HEALTH ADVISORY COMMITTEE

a. Date of constitution: 2022

b. Members :

- Dr. Ruchika Lakshmanan, Veterinary Officer, MCBT
- Dr. Nikhil Whitaker, Curator, MCBT
- Angeline Samuel, Assistant Curator, MCBT
- Pramila Rajan, Director, MCBT
- Senthil Thangam, Zoo Manager, MCBT.

c. Dates on which Meetings held during the year:

01/07/2022, 24/10/2022, 01/01/2023, 17/03/2023

INCOME AND EXPENDITURE STATEMENT 2022-2023

| INCOME | |
|------------------------------|--------------------|
| Ticket Sales | 2,99,20,050 |
| Research Grants | 1,75,67,656 |
| Donations & Rent | 14,52,597 |
| Environment Education | 16,18,501 |
| Adopt an Animal | 16,64,988 |
| Bank Interest | 40,74,866 |
| Croc Shop sales | 14,42,743 |
| Other income | 2,63,79,725 |
| ARRS | 5,82,978 |
| Total | 8,47,04,104 |

| EXPENSES | |
|---|--------------------|
| Salary and Wages | 1,69,54,079 |
| Reptile Feed Costs | 25,20,150 |
| Maintenance and Upkeep | 81,52,374 |
| Research | 1,19,86,194 |
| Environmental Education Expenses | 13,88,280 |
| ARRS | 26,65,090 |
| Croc Shop Expenses | 12,41,724 |
| Administrative Expenses | 17,64,805 |
| Capital Assets | 63,58,018 |
| Total | 5,30,30,714 |

FEED SCHEDULE OF ANIMALS

| SI.No. | Species | Feed item | Quantity (in kg) |
|--------|------------------------------------|----------------------------|---------------------|
| | | | per week |
| 1 | Marsh Crocodile | Fish Chicken Buffalo | 100 160 80 |
| 2 | Saltwater Crocodile | Chicken Buffalo | 40 20 |
| 3 | African Slender Snout Crocodile | Chicken Buffalo | 5 3 |
| 4 | Cuban Crocodile | Chicken Buffalo | 10 6 |
| 5 | West African Dwarf Crocodile | Fish Chicken | 1 1 |
| 6 | Siamese Crocodile | Chicken Buffalo | 4 4 |
| 7 | Morelet's Crocodile | Fish Chicken Buffalo | 2 6 3 |
| 8 | Nile Crocodile | Chicken Buffalo | 5 4 |
| 9 | Gharial | Fish | 80 |
| 10 | Tomistoma | Fish Chicken Buffalo | 1 5 2 |

| | | | |
|-----------|------------------------------|--------------------------------|-------------|
| 11 | American Alligator | Chicken Buffalo | 5 2 |
| 12 | Dwarf Caiman | Fish Chicken | 4 2 |
| 13 | Yacare Caiman | Fish Chicken | 1 2 |
| 14 | Black Caiman | Fish Chicken | 1 2 |
| 15 | Spectacled Caiman | Fish Chicken | 9 2 |
| 16 | Northern River Terrapin | Fish Greens | 3 2 |
| 17 | Red Crowned Roof Turtle | Fish Greens | 1 2 |
| 18 | Aldabra Giant Tortoise | Greens Fruits Vegetables | 3 2 2 |
| 19 | Indian Star Tortoise | Greens Fruits Vegetables | 1 1 1 |
| 20 | Leith's Softshell Turtle | Fish Chicken | 1 1 |
| 21 | Indian Flapshell Turtle | Fish | 1 |
| 22 | Gangetic Softshell Turtle | Fish | 1 |
| 23 | Indian Roofed Turtle | Fish Greens | 1 2 |
| 24 | Travancore Tortoise | Greens Fruits Vegetables | 2 2 2 |

| | | | |
|-----------|-----------------------------|---|---------------------|
| 25 | Indian Tent Turtle | Greens | 1 |
| 26 | Three-Striped Roofed Turtle | Fish Greens | 1 2 |
| 27 | Asian Water Monitors | Fish Chicken | 1 1 |
| 28 | Green Iguana | Greens Vegetable/ Fruit | 2 1 |
| 29 | Blue tongue skinks | Vegetables & greens Insects Meat | 1 Misc. Misc. |
| 30 | Basilisk lizard | Vegetables & greens Insects | 1 Misc. |
| 31 | Komodo Dragon | Meat | Misc. |
| 32 | Indian Rock Python | Rats | Misc. |
| 33 | Reticulated Python | Rats | Misc. |
| 34 | Green Anaconda | Rats | Misc. |
| 35 | Yellow Anaconda | Rats | Misc. |
| 36 | Rat Snake | Rats | Misc. |
| 37 | Trinket Snake | Rats | Misc. |
| 38 | Corn Snake | Rats | Misc. |

| | | | |
|-----------|---------------------|------|-------|
| 39 | Whitaker's Sand Boa | Rats | Misc. |
| 40 | Russell's Viper | Rats | Misc. |
| 41 | Saw Scaled Viper | Rats | Misc. |
| 42 | Common Krait | Rats | Misc. |
| 43 | Banded krait | Rats | Misc. |
| 44 | Spectacled Cobra | Rats | Misc. |
| 45 | Monocled Cobra | Rats | Misc. |

DE-WORMING SCHEDULE OF ANIMALS

| Sl.No | Species | Drug used | Month |
|--------------|----------------|------------------------------|--|
| 1 | Snakes | Metronidazole & Fenbendazole | April- March, as and when required after performing fecal examination. |
| 2 | Lizards | Metronidazole & Fenbendazole | |
| 3 | Crocodiles | Metronidazole & Fenbendazole | |
| 4 | Chelonians | Metronidazole & Fenbendazole | |

DISINFECTION SCHEDULE

| Sl.No | Species | Type of enclosure | Disinfectant used and method | Frequency of disinfection |
|--------------|---------------------------------|--------------------------|-------------------------------------|----------------------------------|
| 1A | Saltwater crocodile juveniles. | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 1B | African Slender Snout Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 1C | Cuban Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 3A | West African Dwarf Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 3B | Yacare Caiman | Open air | Manual Scrubbing and Cleaning | Once a month |
| 4 | Yacare Caiman | Open air | Manual Scrubbing and Cleaning | Once a month |
| 5 | Gharial | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 6 | Siamese Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 7 | Nile Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 8 | Marsh Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 9A | Green Iguana | Open air | Manual Scrubbing and Cleaning | Once a month |
| 9B | Asian Water Monitors | Open air | Manual Scrubbing and Cleaning | Once a month |

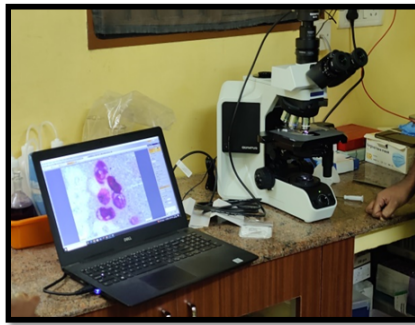
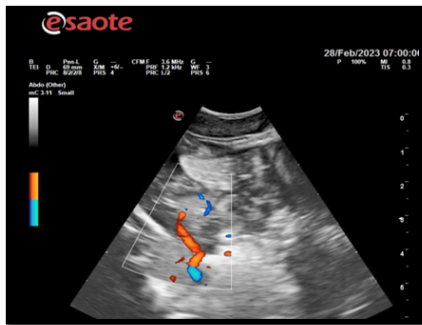
| | | | | |
|------------|---------------------|----------|-------------------------------|--------------------|
| 9C | Dwarf Caiman | Open air | Manual Scrubbing and Cleaning | Once a month |
| 10 | Marsh Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 11 | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 11A | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 12A | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 12B | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 12C | Nile Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 13 | Gharial | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 13A | Black Caiman | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 14 | Spectacled Caiman | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 15 | Morelet's Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 15A | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 15B | Morelet's Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 16 | Marsh Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |

| | | | | |
|------------|--------------------------------------|----------|-------------------------------|--------------------|
| 16A | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 17 | Saltwater Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 18 | Tomistoma | Open air | Manual Scrubbing and Cleaning | Once a month |
| 19 | American Alligator | Open air | Manual Scrubbing and Cleaning | Once a month |
| 20A | Northern River terrapin. | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 20B | Northern River Terrapin | Open air | Manual Scrubbing and Cleaning | Once a month |
| 21 | Siamese crocodile | Open air | Manual Scrubbing and Cleaning | Twice a month |
| 23A | Morelet's Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 23B | Northern River Terrapins | Open air | Manual Scrubbing and Cleaning | Once a month |
| 24 | Gharial and Red Crowned Roof Turtles | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 25A | Spectacled Caiman | Open air | Manual Scrubbing and Cleaning | Once a month |
| 25B | Leith's Soft Shell Turtle | Open air | Manual Scrubbing and Cleaning | Once a month |
| 25C | Morelet's Crocodile | Open air | Manual Scrubbing and Cleaning | Once a month |
| 26 | Northern River Terrapins | Open air | Manual Scrubbing and Cleaning | Once a month |

| | | | | |
|------------|---------------------|-----------------------|---|--------------------|
| 27 | Cuban Crocodile | Open air | Manual Scrubbing and Cleaning | Once in 3-4 months |
| 28 | Nursery | Open air | Savlon Disinfection/ Manual Cleaning | Once in 10 days |
| 29 | Out Office | Open air | Savlon Disinfection/ Manual Cleaning | Once in 10 days |
| 30 | Venomous Snakes | Closed Room | Savlon Disinfection/ Manual Cleaning | Once a week |
| 31 | Non-Venomous Snakes | Closed Room | Savlon Disinfection/ Manual Cleaning | Once a week |
| 32 | Indian Rock Python | Open Air in Mesh Cage | Savlon Disinfection/ Manual Cleaning | Once a week |
| 33. | Reticulated Python | Closed Room | Savlon Disinfection/ Manual Cleaning | Once a week |

DEVELOPMENT WORKS CARRIED OUT IN THE ZOO DURING THE YEAR

- The vet lab extension was completed in August and the new room is now used for X-rays, sonography and endoscopy.
- An Olympus BX 43 microscope with SC 180 camera was purchased and installed for in-depth studies and diagnosis.
- An Esaote Ultrasonography unit with echocardiography and colour doppler was installed for cardiology, pregnancy and abnormality diagnosis.
- A weather station (Vantage Pro 2 Plus with UV and Solar Radiation Sensors) was installed which records a variety of environmental variables,
- Osram ultra vitalux 300W 230V E27 UV bulbs were introduced for UV A and UV B radiation. This has improved metabolism and the general health of animals.
- The HOBO Tidbits MX-1101 temperature loggers (wireless communication) are used for recording and monitoring temperature in reptile enclosures.
- A new research initiative "Analysing the Impact of Sound on Crocodile Behaviour" for addressing human-croc conflict is on-going in association with Dr Sanjoy Deb from Bannari Amman Institute of Technology, Sathyamangalam, Erode.



From left to right: Esaote Ultrasound machine in use with Doppler; Olympus microscope for slide study; Hobo tidbits for monitoring temperature; Davis Pro Weather station set-up

EDUCATION AND AWARENESS PROGRAMMES DURING THE YEAR

Educational programs were a mix of offline and online as the online trend is still going on. Special programs were conducted on long holidays with different themes and ideas. Total number of programs and participants have increased drastically in 2022 to 2023.

Guided tours: 19

Reptile Encounters: 54

Be a Zookeeper: 5

Total number of programs: 85 (6 virtual programs and 79 in-person programs)

Total number of participants: 2704



Adoption

Adoption drive in 2022-2023 has raised the highest amount in comparison with the previous years. All the enclosures on display has been adopted by various individuals and organizations. Wooden boards were put up for enclosure adoptions. Every adopter was given a thank you kit, birth certificate of the animal they adopted and a certificate of adoption. Many people adopted for special days like birthdays and anniversaries. This year saw numerous adopters renew the term eagerly and maintain a good relationship with the organization by showing their support in programs as well.

Individual adoptions: 51

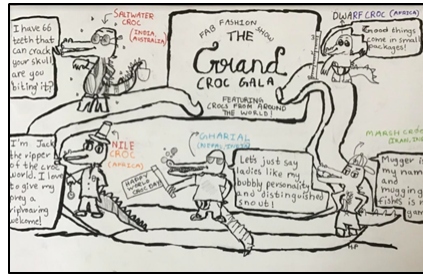
Enclosure adoptions: 16

World Days

World Crocodile Day, June 17th 2022

Croc-A-Doodle-Do! a doodle contest was conducted for all ages. Three winners and one special mention were posted on our Social media pages and given a kit each.

Winners: Agalya S, Harsha Prashanth and Neil John Shobith; Special mention: Indira Naidu



World Snake Day, July 16th 2022

Artwork related to the awareness and conservation of snakes were collected from schools and interested people to be displayed at the Snake haven and at Reptales for the visitors. Snake talks were given to raise awareness about snake encounters and snakebite mitigation.



Wildlife week October 2nd to 8th 2022

MCBT celebrated wildlife week with posts and programs from 2nd to 5th October and then in partnership with Mumbai Children's Museum from Oct 6th to 9th 2022. A face painting contest was conducted online. Three winners and a special mention were posted on our Social media pages and given a kit each.

Winners: Lisha Susan S, Rajashree Thangadurai and Karthiyayini V; Special mention: Mansi Nangare.

Project 2022-2023: Ford

The objective of this year's project funded by Ford is to raise awareness about various reptilian species through innovative technology and educate the masses about topics such as "snakebite prevention" and "conservation". The program is articulated around 3 main axes:

1. Image: VR films showing select reptiles from around the world in their natural habitats
2. Message: Live presentation by the Croc Bank education team according to the age group to develop empathy & make the audience fall in love with reptiles
3. Material: Handing out fun educational materials for children to collect and learn from

We are the 1st zoo in India to execute this facility. The VR kits will act like a "Mobile Zoo" All three instalments totalling to 8 lakhs were requested and received. The target group was Government school students of grades 6 to 10 in the districts of Chennai, Kanchipuram and Chengalpattu. 1019 students and 61 teachers completed even though the project target was only 800. Ford mini audits were successfully completed. The project was presented at their Partner Connect meeting. One-day Volunteering program was conducted for 50+ Ford employees and their family members.



VR Centre

VR centre was opened at the Croc Bank on 23rd July, 2022 with 15 VR headsets from Wild Immersions, France. The first day was free for all and was ticketed at 40 rupees per person from the second day. 12 spinning chairs were purchased for the centre. The VR centre has received a lot of positive feedbacks for being fun, informative and affordable at the same time

IMPORTANT EVENTS AND HAPPENINGS

SNAKEBITE MITIGATION & SNAKE CONSERVATION PROJECT

The Centre for Herpetology/Madras Crocodile Bank's (CFH/MCBT) Snakebite Mitigation and Snake Conservation project had tremendous success over the past three years. The generous support from the Infosys Foundation has enabled us in mitigating this multilayered issue, and some of our key milestones are as follow:

| | |
|----------------------------|-------|
| Educational programs | 160 |
| Capacity building programs | 13 |
| Posters | 5000+ |
| Wall paintings | 7 |



Left: Awareness program; Right: Meeting with the National Centre for Disease Control

ECR CONSERVATION PROGRAM

ECR Conservation Program is a community – based program aimed to impart knowledge and counteract human induced threats to the conducive environment of the coast of Kovalam to Nameli Village of Mamallapuram, Tamil Nadu including sea turtle conservation, noise mitigation, waste management and snakebite mitigation & snake conservation. A group of 50 Fishermen from seven coastal villages of Mamallapuram were the beneficiaries of this program.



SEA TURTLE CONSERVATION PROJECT

MCBT in association with the Sea Turtle Protection Force members of Tree Foundation, Chennai and trained fishing community youth patrolled the beaches throughout the nesting season following all state health guidelines between the months of January and April. Checking poaching, mapping nest locations, recording distance from high tide line, time of nesting, relocating inundated nests, recording environmental parameters, maintaining nest temperature releasing hatchlings are the routines.

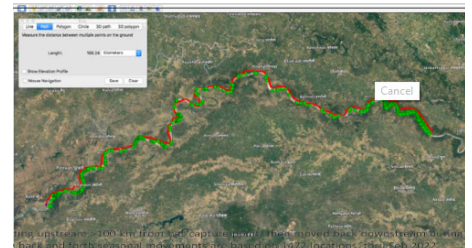
NOISE MITIGATION PROJECT

We are on the second phase of the noise mitigation project. Prof. Chandramouli, released the Updated (Second) report on 'Anthropogenic Noise Levels in Madras Crocodile Bank due to Events at Sheraton Grand Chennai Resort & Spa'; subsequently Digital Sound Meter Calibration report was released. A meeting was organised with the management team of Sheraton to discuss on the design and installation of acoustic barrier. The Sheraton Team was advised to initiate the study and design of acoustic barrier to mitigate a noise.

GHARIAL ECOLOGY PROJECT (GEP)

The highlight of GEP activities in 2022-2023 include:

- Tracking gharials tagged with radios- 31 gharials outfitted with radio tags; an additional 8 with Iridium satellite GPS tracking units
- Studies done include: seasonal movement patterns, nest surveys-post hatching, creche counts and gharial communication.
- Collaborations: Gharial genetics with LaCONES, Prague Zoo-Krokodylii Zoo visits in October 2022 and Kuno Sanctuary gharial studies in December 2022.
- Outreach Activities- Dr. Ashutosh Tripathi, the GEP Outreach Coordinator, conducted a total of 17 community programs in neighboring riverside villages.
- Drones deployed- use of DJI quadcopter drones to create 2D and 3D maps of riverine habitats, using geo-referenced JPEGs for species identification, quantification and nest placements.



From left to right: Insertion of satellite transmitter; radio tracking; mapping of patterns

AGUMBE RAINFOREST RESEARCH STATION

Human-Snake Conflict Mitigation Project (HSCMP) included:

- 212 distress calls from the Forest Department and the local people
- Rescue of 107 king cobras
- Observation of 23 king cobras and 7 king cobra pairs during their breeding season.
- Rescue of 55 spectacled cobras, 10 pythons, 7 rat snakes 1 Russell's viper and 1 Montane trinket snake.
- Assisted the Forest Department officials in a leopard rescue operation.
- Every rescue call was an opportunity to create onsite awareness among local communities and we also distributed educational materials.

Education Outreach work included:

- On the occasion of "World Environment Day-2022" Karnataka Forest Department, Agumbe and ARRS staff planted seed balls inside ARRS premises.
- On the occasion of "International Snakebite Awareness day" Kasturba Medical College/Centre for Wilderness Medicine, KMC, Manipal had conducted an awareness program for MBBS students, PhD scholars, interns and faculty. ARRS Field Director Ajay Giri was invited to talk about king cobra research and conservation work done by ARRS.

- A one day workshop for Village Forest Community (VFC) was organised by the Koppa Forest Department. ARRS Field Director was invited to speak on snake awareness and snakebite mitigation.
- ARRS interacted with students of “Samse High School, Samse” and explained the key concepts of snakebite mitigation and research work conducted at ARRS.
- ARRS had a short program for BSc final year students from Venkatramana SVS college, Bantawal. A presentation on snake biodiversity, king cobra research and ecology and snake bite mitigation was shared with them.
- An awareness campaign for public regarding forest fire was conducted by the Koppa Forest Department. ARRS was invited to conduct an awareness program on snakes, snakebite mitigation and king cobra research.
- RFO trainees from Telangana visited ARRS. A presentation on the research and conservation work done at ARRS and a talk about snakes, snakebite mitigation and basic first aid methods was shared with them
- ARRS was invited to conduct a two day workshop for two different batches of Forest Department officials from "Cauvery Wildlife Division" and local snake rescuers. There were great interactive sessions about ARRS research and conservation work, human-snake conflict and snakebite mitigation.
- BSc final year students from Kalburgi visited ARRS for an interactive session on biodiversity conservation, king cobra research and ecology and snake bite mitigation
- Forest Department recruits from Chakra visited ARRS for a talk on research and conservation work done by ARRS, snakes and snake bite mitigation.



COLLABORATIONS WITH OTHER ORGANISATIONS:

- TANUVAS- Processing of biological samples
- G.J.Multiclave Biomedical Waste Agency- Responsible waste management
- NCRR- To monitor changes in the coastline due to development in the surrounding areas.
- LaCONES- Genetic analysis of critically endangered chelonians

SEASONAL SPECIAL ARRANGEMENTS FOR UPKEEP OF ANIMALS

- a. Air conditioners, UV bulbs, misters, and mulch for reptiles to burrow in.
- b. Shade cloth, hides, sprinklers provided.
- c. Dredging of natural ponds to increase water depth.
- d. Gardening and landscaping of enclosures
- e. Monitoring of water temperature in enclosures.

RESEARCH WORK CARRIED OUT AND PUBLICATIONS (2022-2023)

- Gour, R., N. Whitaker & A. Kartik 2022. Status and distribution of Mugger Crocodile *Crocodylus palustris* in the southern stretch of river Cauvery in Melagiris, India. *Journal of Threatened Taxa* 14(3): 20733–20739. <https://doi.org/10.11609/jot.7575.14.3.20733-20739>.
- Whitaker, N., & C. Sivaraman. 2022. Behaviour in a captive family group of Siamese Crocodiles (*Crocodylus siamensis*) at the Madras Crocodile Bank Trust near Chennai, India. *Reptiles & Amphibian* 29(1), 71–75. <https://doi.org/10.17161/randa.v29i1.16247>.
- Grzimek's Animal Life Encyclopeida_gharial.pdf Volume 7; Reptiles Romulus E. Whitaker and Nikhil Whitaker Second edition 2003
- Multifaceted community health education programs as powerful tools to mitigate snake-bite - <https://pubmed.ncbi.nlm.nih.gov/36632238/>
- RSTMH Article - <https://www.rstmh.org/news-blog/blogs/shared-landscapesdivided-lands>
- Greenpeace article - <https://www.greenpeace.org/india/en/story/14641/reptile-awareness-day-the-beauty-in-the-beasts/>
- Human-Wildlife Conflict Conference talk - <https://www.hwctf.org/conference-vid-eos?pgid=lgvzh416-70701f82-35eb-447e-a51a-9eba671b9e45>

CONSERVATION BREEDING PROGRAMME OF THE ZOO

1. Red crowned roofed turtle (*Batagur kachuga*)
2. Gharial (*Gavialis gangeticus*)
3. River Terrapin (*Batagur baska*)
4. Three striped roofed turtle (*Batagur dhongoka*)

ANIMAL ACQUISITION / TRANSFER / EXCHANGE DURING THE YEAR

| A. | Animals arriving in the Zoo | | | | |
|----|-----------------------------|---------|--------------|----------------|----------------------------|
| | H.NO. | Species | Number (M:F) | From which Zoo | Date of arrival in the zoo |
| | NIL | | | | |

| B. | Animals going from the zoo | | | | |
|----|----------------------------|---------------------|--------------|--------------------|---------------------------------|
| | H.NO. | Species | Number (M:F) | Going to which Zoo | Date of deposition from the zoo |
| | N1 & N4 | Siamese crocodile | 0:13 | GZRRC | 25/05/2023 |
| | P20A | Saltwater crocodile | 4:4 | | |
| | N19 | Dwarf caiman | 5:5 | | |
| | P23A | Morelet's crocodile | 0:2 | | |
| | NuA | Gharial | 0:0:2 | | |
| | P29 | Travancore tortoise | 1:9 | | |
| | P28 | Star tortoise | 1:4 | | |
| | NuC | Flapshell | 5:5 | | |
| | B3 | Whitaker's sand boa | 4:6 | | |
| | P7 | Nile crocodile | 0:1 | | |
| | N32 | Morelet's crocodile | 0:2 | | |
| | N15 | Nile crocodile | 0:5 | | |
| | N16 | Siamese crocodile | 0:2 | | |
| | Mesh | Indian Rock Python | 0:5 | | |
| | NuA | Gharial | 0:0:8 | | |
| | P21 | Marsh crocodile | 87:0 | GZRRC | 21/09/2023 |
| | P1/P21 | Marsh crocodile | 120:0 | GZRRC | 29/10/2023 |
| | P22 | Marsh crocodile | 0:120 | GZRRC | 26/12/2023 |
| | P22 | Marsh crocodile | 0:110 | GZRRC | 20/01/2023 |
| | P16 | Marsh crocodile | 0:113 | GZRRC | 11/02/2023 |

PROFORMA FOR ANNUAL INVENTORY REPORT
INVENTORY REPORT FOR THE YEAR : 2022-2023

Endangered Species

| S.No. | Animal Name | Scientific name | Opening Stock (01/04/2022) | | | | Births | | | Acquisition | | | Disposals | | | Deaths | | | | Closing Stock (31/03/2023) | | |
|-------|-------------------------|---------------------------------|-------------------------------|-----|----|------------|--------|---|---|-------------|---|---|-----------|-----|----|--------|---|---|----|-------------------------------|----|-----|
| | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| 1. | Northern River Terrapin | <i>Batagur baska</i> | 1 | 2 | 64 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 64 | 67 |
| 2. | Red Crowned Roof Turtle | <i>Batagur kachuga</i> | 14 | 3 | 58 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 12 | 3 | 58 | 73 |
| 3. | Indian Chameleon | <i>Chameleo zeylanicus</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 4. | Marsh Crocodile | <i>Crocodylus palustris</i> | 154 | 527 | 23 | 704 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 442 | 0 | 3 | 0 | 0 | 27 | 120 | 4 | 151 |
| 5. | Saltwater Crocodile | <i>Crocodylus porosus</i> | 14 | 27 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 10 | 23 | 0 | 33 |
| 6. | Russell's Viper | <i>Daboia russelii</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 7. | Gharial | <i>Gavialis gangeticus</i> | 5 | 32 | 11 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 5 | 32 | 1 | 38 |
| 8. | Travancore Tortoise | <i>Indotestudo travancorica</i> | 6 | 39 | 2 | 47 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 | 0 | 5 | 30 | 2 | 37 |

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|--|---------------------------------|------------|------------|------------|-------------|----------|----------|----------|----------|----------|----------|------------|------------|-----------|----------|----------|----------|-----------|------------|------------|------------|
| 9. | Indian flapshell turtle | <i>Lissemys punctate</i> | 15 | 33 | 6 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 10 | 28 | 6 | 44 |
| 10. | Reticulated Python | <i>Malayopython reticulatus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 11. | Monocellate Cobra | <i>Naja kaouthia</i> | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 3 |
| 12. | Spectacled Cobra | <i>Naja naja</i> | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 2 |
| 13. | Indian Softshell Turtle, Ganges Softshell Turtle | <i>Nilssononia gangetica</i> | 0 | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 |
| 14. | Indian Tent Turtle | <i>Pangshura tecta</i> | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 15. | Common Rat Snake | <i>Ptyas mucosa</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 16. | Indian Rock Python | <i>Python molurus</i> | 1 | 17 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 1 | 11 | 0 | 12 |
| 17. | Asian Water Monitor | <i>Varanus salvator</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| Total Reptilia | 17 | | 218 | 685 | 177 | 1080 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 465 | 10 | 6 | 2 | 0 | 78 | 253 | 148 | 479 |
| Total | | | 218 | 685 | 177 | 1080 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 465 | 10 | 6 | 2 | 0 | 78 | 253 | 148 | 479 |

Other than Endangered Species

| S.No. | Animal Name | Scientific name | Opening Stock | | | | Births | | | Acquisiti | | | Disposals | | | Deaths | | | Closing Stock | | | |
|-------|--|-----------------------------------|---------------|---|---|----|--------|---|---|-----------|---|---|-----------|---|---|--------|---|---|---------------|---|---|----|
| | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| 1. | Aldabra Giant Tortoise | <i>Aldabrachelys gigantean</i> | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| 2. | American Alligator | <i>Alligator mississippiensis</i> | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 |
| 3. | Basilisk Lizard | <i>Basiliscus basiliscus</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 4. | Dhongoka Roofed Turtle, Three-striped Roofed Turtle, Three-striped roof turtle | <i>Batagur dhongoka</i> | 1 | 4 | 6 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 7 | 12 |
| 5. | Common Krait | <i>Bungarus caeruleus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 6. | Banded Krait | <i>Bungarus fasciatus</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |

| | | | | | | | | | | | | | | | | | | | | | | | |
|-----|--|-------------------------------|---|----|----|-----------|---|---|----|---|---|---|---|----|---|---|---|---|---|----|----|----|---|
| 7. | Spectacled Caiman | <i>Caiman crocodilus</i> | 0 | 0 | 36 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 36 | |
| 8. | Yacare Caiman | <i>Caiman yacare</i> | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 9. | Common Trinket Snake | <i>Coelognathus Helena</i> | 1 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 4 | |
| 10. | Morelet's Crocodile | <i>Crocodylus moreletii</i> | 1 | 11 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 8 | |
| 11. | Nile Crocodile | <i>Crocodylus niloticus</i> | 1 | 16 | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 11 | |
| 12. | Cuban Crocodile | <i>Crocodylus rhombifer</i> | 1 | 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 4 | |
| 13. | Siamese Crocodile | <i>Crocodylus siamensis</i> | 3 | 25 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 3 | 10 | 0 | 13 | |
| 14. | Saw Scaled Viper | <i>Echis carinatus</i> | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 3 | |
| 15. | Whitaker's Boa | <i>Eryx whitakeri</i> | 5 | 7 | 9 | 21 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 13 | 15 | |
| 16. | Green Anaconda | <i>Eunectes murinus</i> | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | |
| 17. | Yellow Anaconda | <i>Eunectes notaeus</i> | 0 | 2 | 2 | 4 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 20 | 22 | |
| 18. | Indian Star Tortoise | <i>Geochelone elegans</i> | 2 | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 6 | |
| 19. | Termite Hill Gecko | <i>Hemidactylus triedrus</i> | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | |
| 20. | Green Iguana | <i>Iguana iguana</i> | 1 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 3 | |
| 21. | Common Wolfsnake | <i>Lycodon aulicus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| 22. | West-African Slender Snouted Crocodile | <i>Mecistops cataphractus</i> | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | |

| | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|---|---------------------------------------|------------|------------|------------|-------------|----------|----------|-----------|----------|----------|----------|------------|------------|-----------|----------|----------|----------|------------|------------|------------|------------|
| 23. | Black Caiman | <i>Melanosuchus niger</i> | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 24. | Leith's Softshell Turtle | <i>Nilssonina leithii</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 25. | West African Dwarf Crocodile | <i>Osteolaemus tetrapis tetraspis</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 26. | Cuvier's Dwarf Caiman | <i>Paleosuchus palpebrosus</i> | 9 | 18 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 1 | 0 | 4 | 12 | 0 | 16 |
| 27. | Indian Tent Turtle, Pink ringed tent turtle(ssp.circumdata) | <i>Pangshura tentoria circumdata</i> | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 14 |
| 28. | Corn Snake | <i>Pantherophis guttatus</i> | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| 29. | Blue tongue skink | <i>Tiliqua scincoides</i> | 1 | 1 | 7 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 7 | 9 |
| 30. | False Gharial | <i>Tomistoma schlegelii</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 31. | Komodo Dragon | <i>Varanus komodoensis</i> | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| Total Reptilia | 31 | | 40 | 115 | 89 | 244 | 0 | 0 | 25 | 0 | 0 | 0 | 10 | 40 | 0 | 1 | 2 | 3 | 29 | 73 | 111 | 213 |
| Total | | | 40 | 115 | 89 | 244 | 0 | 0 | 25 | 0 | 0 | 0 | 10 | 40 | 0 | 1 | 2 | 3 | 29 | 73 | 111 | 213 |
| Grand Total | 48 | | 258 | 800 | 266 | 1324 | 0 | 0 | 25 | 0 | 0 | 0 | 128 | 505 | 10 | 7 | 4 | 3 | 107 | 326 | 259 | 692 |

MORTALITY OF ANIMALS

| S. No | Animal Name (with individual identification mark, if any) | Scientific Name | Sex | Date of Death | Reason of Death as per the Post-mortem report |
|-------|---|-----------------------------|--------|---------------|---|
| 1. | Monocled Cobra (K3) | <i>Naja kaouthia</i> | Female | 06/05/2022 | Fecal Impaction - Enteritis and Septicaemia |
| 2. | Red Crowned Roofed Turtle (#6L – 12R) | <i>Batagur kachuga</i> | Male | 30/05/2022 | Metabolic disorder |
| 3. | Yellow Anaconda | <i>Eunectes notaeus</i> | UK | 07/09/2022 | Birth deformity |
| 4. | Green Iguana | <i>Iguana iguana</i> | Female | 08/09/2022 | Infighting – Anorexia / Emaciation |
| 5. | Red Crowned Roofed Turtle | <i>Batagur kachuga</i> | Male | 23/09/2022 | Autolysed |
| 6. | Marsh Crocodile | <i>Crocodylus palustris</i> | Male | 23/10/2022 | Cannibalized |
| 7. | Spectacled Cobra (N1) | <i>Naja naja</i> | Male | 27/10/2022 | Multi-organ failure- senility |
| 8. | Indian Star tortoise | <i>Geochelone elegans</i> | Male | 26/11/2022 | Septicaemia - Autolysed |
| 9. | Marsh Crocodile (71-13R) | <i>Crocodylus palustris</i> | Male | 05/12/2022 | Cannibalized / Autolysed |

| | | | | | |
|-----|------------------------------|-----------------------------------|--------|------------|-------------------------------------|
| 10. | American alligator | <i>Alligator mississippiensis</i> | Female | 26/12/2022 | Hemorrhagic shock |
| 11. | Indian Rock Python | <i>Python molurus</i> | Female | 09/02/2023 | Anorexia / Emaciation |
| 12. | Yellow Anaconda (#YA22 – 13) | <i>Eunectes notaeus</i> | UK | 23/02/2023 | Septicaemia – Anorexia / Emaciation |
| 13. | Cuvier's Dwarf Caiman | <i>Paleosuchus palpebrosus</i> | UK | 25/02/2023 | Infection -Anorexia / Emaciation |
| 14. | Marsh Crocodile (47-10L) | <i>Crocodylus palustris</i> | Male | 31/3/2023 | Autolysed |

COMPLIANCE WITH CONDITIONS STIPULATED BY THE CENTRAL ZOO AUTHORITY

| Sr No | Norm No. under RZR, 2009 | Condition Stipulated | Time Period to Comply | Since when pending | Status with regard to compliance of the conditions |
|-------|--------------------------|--|-----------------------|--------------------|--|
| 1 | 10.1 (4) | Residence of staff within premises of zoo to be separated by boundary wall 2 Mts high. | 6 months | | Chain link fence to be used. |
| 2 | 10.6 (6) | Mou with TANUVAS, reg. | Six months | | We have a MoU with TANUVAS |

| | | | | | |
|---|-------------|---|------------|--|--|
| 3 | 10.7 (2) | Findings of post mortem to be reported in format provided. | Six months | | A format which encompasses both CZA's post mortem report in addition to MCBT's is now in use. |
| 4 | 10.9 (9) | Excess population of marsh crocodiles to be shifted to off display area. | One year | | Excess population has been transferred to GZRRC. |
| 5 | 10.9 (9) | Population control measures for Siamese crocodiles, Spectacled caiman, Dwarf caiman, and yellow anaconda. | One year | | Measures have been taken. |
| 6 | | The hotel established adjacent to the park playing earth shaking music is to be stopped. | | | We have been in contact IIT, Chennai, and mitigation in the form of sound barrier blocks is in progress. |

LIST OF FREE LIVING FLORA AND FAUNA WITHIN THE ZOO PREMISES

FLORA

TREES

1. *Calophyllum inophyllum*
2. *Terminalia bellirica*
3. *Wrightia tinctoria*
4. *Pterocarpus marsupium*
5. *Acacia auriculiformis*
6. *Tamarindus indica*
7. *Albizia lebbek*
8. *Crateva adansonii*
9. *Leucaena leucocephala*
10. *Bassia latifolia*
11. *Crescentia cujete*
12. *Polyalthia longifolia*
13. *Ficus religiosa*
14. *Morinda pubescens*
15. *Annona squamosa*
16. *Cordia oblique*
17. *Syzygium cumini*
18. *Terminalia catappa*
19. *Grevillea robusta*
20. *Terminalia arjuna*
21. *Delonix regia*
22. *Azadirachta indica*
23. *Mangifera indica*
24. *Borassus flabellifer*
25. *Caesalpinia bonduc*
26. *Millingtonia hortensis*
27. *Ziziphus jujube*
28. *Drypetes roxburghii*
29. *Mimusops elengi*
30. *Erythrina variegata*
31. *Citrus aurantifolia*
32. *Ficus benghalensis*
33. *Carica papaya*
34. *Peltophorum pterocarpum*
35. *Cycas circinalis*
36. *Caryota urens*
37. *Anacardium occidentale*
38. *Holoptelea integrifolia*
39. *Thespesia populnea*
40. *Pongamia pinnata*

- | | |
|------------------------------------|------------------------------------|
| 41. <i>Dalbergia lanceolaria</i> | 54. <i>Strychnos nux-vomica</i> |
| 42. <i>Sterculia foetida</i> | 55. <i>Chloroxylon swietenia</i> |
| 43. <i>Phoenix sylvestris</i> | 56. <i>Gyrocarpus americanus</i> |
| 44. <i>Albizia amara</i> | 57. <i>Samanea saman</i> |
| 45. <i>Tecoma stans</i> | 58. <i>Moringa pterygosperma</i> |
| 46. <i>Eucalyptus globules</i> | 59. <i>Casuarina equisetifolia</i> |
| 47. <i>Murraya exotica</i> | 60. <i>Lanea coromandelica</i> |
| 48. <i>Lepisanthus tetraphylla</i> | 61. <i>Pithecellobium dulce</i> |
| 49. <i>Butea monosperma</i> | 62. <i>Guazuma tomentosa</i> |
| 50. <i>Pisonia alba</i> | 63. <i>Ceiba pentandra</i> |
| 51. <i>Cassine glauca</i> | 64. <i>Barringtonia speciose</i> |
| 52. <i>Ailanthus excelsa</i> | 65. <i>Duranta repens</i> |
| 53. <i>Garcinia spicata</i> | 66. <i>Hibiscus tiliaceous</i> |

SHRUBS

- | | |
|---------------------------------|-------------------------------------|
| 1. <i>Justicia adhatoda</i> | 7. <i>Glycosmis mauritiana</i> |
| 2. <i>Calotropis gigantea</i> | 8. <i>Hibiscus rosa-sinensis</i> |
| 3. <i>Jatropha gossypifolia</i> | 9. <i>Pedilanthus tithymeloides</i> |
| 4. <i>Cassia alata</i> | 10. <i>Lawsonia inermis</i> |
| 5. <i>Rauvolfia tetraphylla</i> | 11. <i>Securinega leucopyrus</i> |
| 6. <i>Memecylon umbellatum</i> | 12. <i>Manihot esculenta</i> |

CLIMBERS AND CREEPERS

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|--------------------------------|--------------------------------|
| 1. <i>Combretum albidum</i> | 4. <i>Bougainvillea glabra</i> |
| 2. <i>Canavalia ensiformis</i> | 5. <i>Pergularia daemia</i> |
| 3. <i>Abrus precatorius</i> | 6. <i>Clitoria ternatea</i> |

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| 7. <i>Cardiospermum halicacabum</i> | 11. <i>Ipomoea quamoclit</i> |
| 8. <i>Solanum trilobatum</i> | 12. <i>Coccinia grandis</i> |
| 9. <i>Tiliacora acuminata</i> | 13. <i>Mukia maderaspatana</i> |
| 10. <i>Tylophora indica</i> | |

HERBS

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| 1. <i>Waltheria indica</i> | 17. <i>Sansevieria trifasciata</i> |
| 2. <i>Tridax procumbens</i> | 18. <i>Talinum triangulare</i> |
| 3. <i>Commelina bengalensis</i> | 19. <i>Commelina erecta</i> |
| 4. <i>Corchorus aestuans</i> | 20. <i>Acalypha indica</i> |
| 5. <i>Achyranthes aspera</i> | 21. <i>Andrographis paniculata</i> |
| 6. <i>Hybanthus enneaspermus</i> | 22. <i>Catharanthus roseus</i> |
| 7. <i>Vernonia cineria</i> | 23. <i>Phyllanthus amarus</i> |
| 8. <i>Euphorbia heterophylla</i> | 24. <i>Boerhavia diffusa</i> |
| 9. <i>Sida acuta</i> | 25. <i>Sida cordifolia</i> |
| 10. <i>Indoneesiella echioides</i> | 26. <i>Solanum nigrum</i> |
| 11. <i>Merremia tridentata</i> | 27. <i>Oldenlandia herbacea</i> |
| 12. <i>Barleria prionitis</i> | 28. <i>Glinus oppositifolius</i> |
| 13. <i>Evolvulus alsinoides</i> | 29. <i>Abutilon indicum</i> |
| 14. <i>Capsicum annum</i> | 30. <i>Micrococca mercurialis</i> |
| 15. <i>Cymbopogon citratus</i> | 31. <i>Dipteracanthus prostratus</i> |
| 16. <i>Sansevieria roxburghiana</i> | |

FAUNA

1. *Argiope versicolor*
2. *Argiope aemula*
3. *Argiope anasuja*
4. *Argiope pulchella*
5. *Gasteracantha geminata*
6. *Gasteracantha mammosa*
7. *Cyclosa insulana*
8. *Parawixia*
9. *Tetragnatha* sp.
10. *Leucauge decorata*
11. *Tetragnatha mandibulata*
12. *Theridion* sp.
13. *Hippasa* sp.

ARACHNIDS

14. *Citrophora citricola*
15. *Citrophora cicatrosa*
16. *Crossopriza lyoni*
17. *Oxyopes rufisternum*
18. *Peucetia viridans*
19. *Oxyopes* sp.
20. *Pardosa pseudoannulata*
21. *Plexippus petersi*
22. *Plexippus paykulli*
23. *Telamonia dimidiata*
24. *Thomisus pugilus*
25. *Olios milleti*
26. *Neosparassus* sp.

BIRDS

1. *Turdoides affinis* White headed babbler
2. *Merops orientalis* Small bee-eater
3. *Pycnonotus cafer* Red vented bulbul
4. *Pycnontus luteolus* White browed bulbul
5. *Pycnonotus jocosus* Red-whiskered bulbul
6. *Corvus splendens* House crow
7. *Corvus macrorhynchos* Jungle crow
8. *Hierococcyx varius* Common hawk cuckoo
9. *Cacomantis passerines* Indian plaintive cuckoo

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| 10. | <i>Streptopelia chinensis</i> | Spotted dove |
| 11. | <i>Dicrurus macrocercus</i> | Black drongo |
| 12. | <i>Nycticorax nycticorax</i> | Black crowned night heron |
| 13. | <i>Ardeola grayii</i> | Indian pond heron |
| 14. | <i>Aegithina tiphia</i> | Common iora |
| 15. | <i>Ceryle rudis</i> | Pied kingfisher |
| 16. | <i>Alcedo atthis</i> | Small blue kingfisher |
| 17. | <i>Halcyon smyrnensis</i> | White throated kingfisher |
| 18. | <i>Haliastur indus</i> | Brahminy kite |
| 19. | <i>Milvus migrans</i> | Black kite |
| 20. | <i>Haliaeetus leucogaster</i> | White bellied sea eagle |
| 21. | <i>Eudynamys scolopacea</i> | Asian koel |
| 22. | <i>Vanellus indicus</i> | Red-wattled lapwing |
| 23. | <i>Acridotheres tristis</i> | Common myna |
| 24. | <i>Oriolus oriolus</i> | Eurasian golden oriole |
| 25. | <i>Otus bakkamoena</i> | Collared scops owl |
| 26. | <i>Athene brahma</i> | Spotted owlet |
| 27. | <i>Psittacula cyanocephala</i> | Blossom headed parakeet |
| 28. | <i>Psittacula krameri</i> | Rose ringed parakeet |
| 29. | <i>Copsychus saularis</i> | Oriental magpie robin |
| 30. | <i>Accipiter badius</i> | Shikra |
| 31. | <i>Nectarinia lotenia</i> | Loten's sunbird |
| 32. | <i>Nectarinia zeylonica</i> | Purple rumped sunbird |
| 33. | <i>Artamus fuscus</i> | Ashy swallow shrike |
| 34. | <i>Apus affinis</i> | House swift |
| 35. | <i>Cypsiurus balasiensis</i> | Asian palm swift |

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| 36. | <i>Dendrocitta vagabunda</i> | Indian treepie |
| 37. | <i>Amaurornis phoenicurus</i> | White breasted waterhen |
| 38. | <i>Dinopium benghalense</i> | Lesser flameback woodpecker |
| 39. | <i>Clamator coromandus</i> | Chestnut winged cuckoo |
| 40. | <i>Zoothera citrina</i> | Orange headed thrush |
| 41. | <i>Ardea alba</i> | Great egret |
| 42. | <i>Egretta garzetta</i> | Little egret |
| 43. | <i>Bubulcus ibis</i> | Cattle egret |
| 44. | <i>Mesophoyx intermedia</i> | Intermediate egret |
| 45. | <i>Phalacrocorax niger</i> | Little cormorant |
| 46. | <i>Muscicapa dauurica</i> | Asian brown flycatcher |
| 47. | <i>Terpsiphone paradisi</i> | Asian paradise flycatcher |
| 48. | <i>Dendronanthus indicus</i> | Forest wagtail |
| 49. | <i>Motacilla flava</i> | Yellow wagtail |
| 50. | <i>Pericrocotus cinnamomeus</i> | Small minivet |
| 51. | <i>Tyto alba</i> | Barn owl |
| 52. | <i>Pitta brachyura</i> | Indian pitta |
| 53. | <i>Ptyonoprogne concolor</i> | Dusky crag martin |
| 54. | <i>Centropus sinensis</i> | Greater coucal |
| 55. | <i>Otus bakkamoena</i> | Collared scops-owl |
| 56. | <i>Upupa epops</i> | Common hoopoe |
| 57. | <i>Orthotomus sutorius</i> | Common tailorbird |
| 58. | <i>Prinia socialis</i> | Ashy prinia |

LIZARDS

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|--------------------------------------|------------------------------|
| 1. <i>Calotes versicolor</i> | Common garden lizard |
| 2. <i>Mabuya carinata</i> | Brahminy skink |
| 3. <i>Sitana ponticeriana</i> | Fan-throated lizard |
| 4. <i>Chamaeleo zeylanicus</i> | Indian chameleon *rare |
| 5. <i>Hemidactylus frenatus</i> | Southern house gecko |
| 6. <i>Hemidactylus leschenaultii</i> | Bark gecko |
| 7. <i>Hemidactylus flaviviridis</i> | Common house gecko |
| 8. <i>Hemidactylus brookii</i> | Brook's gecko |
| 9. <i>Varanus bengalensis</i> | Common Indian monitor lizard |
| 10. <i>Lygosoma punctata</i> | Striped skink |

SNAKES

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|--------------------------------|------------------------------|
| 1. <i>Ptyas mucosa</i> | Indian rat snake |
| 2. <i>Amphiesma stolata</i> | Stripped keelback |
| 3. <i>Fowlea piscator</i> | Checkered keelback |
| 4. <i>Ahaetulla nasuta</i> | Common vine snake |
| 5. <i>Dendrelaphis tristis</i> | Common Bronzeback tree snake |
| 6. <i>Lycodon aulicus</i> | Common wolf snake |
| 7. <i>Lycodon striatus</i> | Barred wolf snake |
| 8. <i>Eryx johnii</i> | Common sand boa |
| 9. <i>Bungarus caeruleus</i> | Common krait |
| 10. <i>Naja naja</i> | Spectacled cobra |

MISCELLANEOUS

1. Vaccination schedule for animals: Not applicable
2. Health check-up for employees: Covid booster doses were administered
3. Rescue and rehabilitation of wild animals: Nil