

ANNUAL ACTIVITY REPORT

2022-23



NANDANKANAN BIOLOGICAL PARK
BHUBANESWAR, ODISHA



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1. Report of the Officer-in-charge

Nandankanan Biological Park is one of the 17 large zoos in the country and the only large zoo in Odisha, established on 29th December 1960. With every passing year, Nandankanan has witnessed significant improvements in providing its denizens with the highest standards in housing, husbandry and health care and a fascinating learning experience for its visitors.

Nandankanan, true to its name, is verily a heavenly garden of Gods, and its salubrious surroundings are a treat to the eye. Apart from the verdant environs of the zoo, there are two important wetlands here: Kanjia Lake and Kiakani Lake spreading over 66 ha and 25 ha, respectively. The former was listed as a Wetland of National importance in 2006 based on its rich biodiversity and important role in wetland education. Nestled alongside the lakes is the State Botanical Garden sprawling over 75 ha of beautifully landscaped grounds, one of the most important plant conservation facilities in the State. It was handed over to Nandankanan Management in August 2006. The Zoological Park, along with the State Botanical Garden, Kanjia Lake and Kiakani Lake, was declared as the Nandankanan Wildlife Sanctuary with an area of 4.37 sq. km. on 3rd August 1979. The natural forest areas of the sanctuary provide a safe home to a rich assemblage of flora and free-living wild fauna. Moreover, it plays the crucial role of being the green lungs of the capital city of Bhubaneswar. With its unique amalgamation of ex-situ and in-situ conservation initiatives, Nandankanan has emerged as a pre-eminent centre for biodiversity conservation and environmental education in the country.

We have completed another outstanding year of biodiversity conservation, zoo management, research & education. As always, Nandankanan has been very popular among the tourist & local habitants and attracted about 38, 67,994 visitors from 2022-23. Significant improvements were achieved in infrastructure development, animal collection, care of rescued and infant animals, health care, fodder production and conservation research.

Adapting to the changing times, we have evolved with the pandemic situation leveraging technology and can carry out several activities in a virtual mode. Notable among them are state-level online quiz competitions on behalf of State Wildlife Headquarters, entry of visitors with online tickets only, online animal adoption programme and various outreach activities. The pandemic has made us revive and pursue the Adopt-an-Animal program to mobilize resources for animal welfare. More than two hundred individuals and two organizations have contributed to the program. High-speed free Wi-Fi service and UPI-based transactions in the online mode were introduced during the year to facilitate contactless entry.

During the year, many enclosures and visitor amenities were renovated and supplemented with enrichments, standoff barriers, signage and landscaping where ever necessary. Among them, facilities like Multi-Level Car Parking, Zoo Laboratory, Modular PM House & Incinerator Complex, Carnivore Quarantine Ward, Indian Fox enclosure, Children's Park, Nursery for Hand Rearing of Animal Babies and Operation Theatre are worth mentioning.

During the year, 259 animals, including 141 mammals, 78 birds and 40 reptiles, were born at the zoo. Among them, the birth of Hippopotamus, Yellow anaconda, Stump tailed macaque, Mouse deer, Indian peafowl, Swamp deer, Alexandrine parakeet, Blackbuck, Jackal, Common palm civet, Assamese macaque, Manipuri deer, Four-horned antelope, Black kite, Painted stork, Ring-necked parakeet, Mandarin duck, Grey pelican, Swamp deer, Hog deer, Star tortoise, Banded krait, Rat snake, Blossom headed parakeet, Monocellate cobra, Binocellate cobra, Violet turaco, Budgerigar, Java sparrow, Indian gaur, Open bill stork, Asiatic lion, Indian pangolin, Indian grey wolf, Sambar, Little egret, Night heron, Bonnet macaque, Barn owl, Water monitor lizard etc. is noteworthy. Similarly, one Tiger cub, two Lioness cubs, two Indian grey wolf cubs, one Sloth bear cub, and one Ratel cub were successfully hand reared by a dedicated team following maternal rejection by her mother. Under the animal exchange programme, we have welcomed 09 new animals of 2 species to infuse a new bloodline to the existing stock and have added two new species to the animal collection. However, we said final adieu to some precious animals of our Zoo, notably the

Elephant-“Prema”, White Tigress- “Bijaya”, Leopard-“Mangal”, and the African lioness- “Ganga” who was very popular among visitors. These animals are now a part of Nandankanan history.

Further, as a commitment to in-situ conservation, during 2022-23, 2 male and four female gharials of 2.3m-3.8m tagged with satellite transmitters were released to the river Mahanadi. The natural breeding of Gharial occurred for the 2nd consecutive year at Satkosia Gorge, the project implementation site. On 11th May 2022, 32 Gharial hatchlings hatched at the same nest from the same mother as the previous year. Community awareness activities were prioritized to protect gharials and their hatchlings by the field researchers in addition to daily monitoring of gharials.

Recognizing the crucial roles that Nandankanan must play in fostering the people-nature connection, unprecedented importance has been given to awareness and outreach activities. Several new and innovative Citizen Science activities, such as the Sunday bird walk, butterfly and moth walk, and Herping trail, were initiated during 2022-23 and have been enthusiastically received by the citizens. QR-code-enabled signages and self-guided QR-code-enabled Tree Walks have been introduced. Further, the celebration of different eco-days like World Wetlands Day, World Pangolin Day, World Wildlife Day, World Environment Day, World Crocodile Day, Moth Awareness Week, International Tiger Day, World Lion Day, International Vulture Awareness Day, Cheetah Awareness Week, Wildlife Week and World Elephant Day etc. were organised during the year. Animal keepers were motivated to share their experience with visitors during Keeper’s talk sessions.

The highest standards of health care and animal husbandry practices have resulted in a reduced annual death rate from 2022-23. This was possible due to sincere efforts by our zoo veterinarians, cooperation from the College of Veterinary Sciences and Animal Husbandry, OUAT, Bhubaneswar, and valuable advice and guidance from the Health Committee and Technical Committee on important health care issues.

Research is in the DNA of Nandankanan. Following the long-term commitment to scientific contribution, two research papers in various national and international journals and two books were published on numerous aspects of ex-situ conservation and managing captive wild animals. Therefore, it is heartening that despite disruptive and unexpected changes, the year delivered several significant milestones.

All this could not have been achieved but for the sincere efforts of all members of Team Nandankanan, and I would take this opportunity to thank them all –supervisory officers, our dedicated staff, including healthcare professionals, members of various technical and advisory committees, senior officers and the previous Directors of the zoo. I am optimistic that with their hard work and sound advice, aided by the constant guidance of the Chief Wildlife Warden, we will continue to build upon our impactful legacy and forge ahead with our vision to place Nandankanan in the list of world-class zoos.

Dr. Manoj V. Nair, IFS
Director, Nandankanan Biological Park

2. History of the Zoo

Nandankanan had a very interesting beginning. Some forest officials conceived the idea of including some rare wild animals and rare orchids typical to our State in the Odisha pavilion in World Agricultural Fair 1960 at Delhi. It was contemplated that rare animals from Odisha would certainly make the Odisha pavilion a crowd puller. Since procurement of wild animal and their transport to Delhi would be an expensive affair, therefore it was decided to include small animals like Mouse deer , Leopard cat, Wild cat, Pangolin, Racket tailed drongo , Flying Squirrel, Hill Mynah, Peacock etc. The idea was much appreciated at the higher level and a decision was taken to have a mini zoo in the World Agricultural Fair. Since there was hardly any time for the capture of wild animals from wild, it was decided to approach persons who are in possession of the wild animals and procure the same by way of hire or purchase for the exhibition. Accordingly the Divisional Forest Officers were instructed to procure the wild animals for dispatch to Delhi. Fortunately within a month several wild animals i.e. two Spotted deer, two Barking deer, two Black buck, one Mouse deer, one Leopard cat, one Flying squirrel, one Racket-tailed drongo, one Hornbill, two Parrots, two Hill Mynah, one Peacock, one Mongoose were collected. The then Divisional Forest Officer, Deogarh (Late G.M. Das) captured one Pangolin (Scaly ant-eater), two porcupines from the forests. Similarly Late P. Mohapatra, the then Divisional Forest Officer, Puri captured a pair of wild boars and a Python from the forest. All these animals were sent to the Delhi and exhibited inside Odisha Pavilion in the World Agricultural Fair.

Unfortunately the State Finance Department raised serious objections to the idea of starting a zoo in Odisha as it would involve a lot of expenditure for its establishment and maintenance. Such a venture at that point of time needed deliberation in the legislative assembly and special budget provision. In the meantime the wild animals arrived at Bhubaneswar by May, 1960 and their upkeep and feeding posed a serious problem for forest department. Fortunately the late P. Mohapatra, Divisional Forest Officer, Puri and the Late G.K. Das, Divisional Forest Officer, Deogarh came to the department's rescue. With their co-operation and efforts, temporary structures with brush wood and thatched roof were constructed at Khandagiri near Bhubaneswar to shelter these wild animals. The Jain community also came forward with the help of feeding these wild animals at Khandagiri. These animals at Khandagiri attracted large number of visitors both from Bhubaneswar town and neighboring villages. On the 6th day Dr. H.K. Mahatab, the then Chief Minister of Odisha was pleased to see these

wild animals. He immediately discussed with the Forest Minister, Forest Secretary, Finance Secretary, Chief Secretary and Chief Conservator of Forests regarding establishment of a Zoo in Odisha.

Initially it was proposed to have the zoo at Ghatikia close to Khandagiri and Udayagiri caves. It would also provide recreation to the urban population of Bhubaneswar. Later it was felt that Ghatikia would pose water problems in future. A zoo needs lot of water to meet the need of animals, cleaning of animals sheds and for various other purposes. The then Range Officer, Chandaka suggested Jujhagarh forest block on Kanjia lake near Barang Railway station as the most ideal location. The then Chief Conservator of Forests, Divisional Forest Officer, Puri, Range Officer, Chandaka and D.P. Ghosh, Forest Ranger visited the place and were impressed with its scenic beauty. Kanjia lake with its vast expanse over 125 acres low and undulating hills of Jujhagarh and Krushnanagar D.P.F.S. with lush green vegetation on both sides of the lake presented a picturesque site. Jujhagarh Forest Block had all the advantages for locating the zoo except communication from Bhubaneswar and the only approach was via Chandaka covering a distance of 38 Km.

A committee consisting of Dr. Radhanath Rath, Sri G.C. Dash and Sri D.N. Choudhury, the then Minister of Forests, Secretary, Forest and the Chief Conservator of Forests respectively visited the place. They were very much impressed with its aesthetic beauty and recommended location of the zoo there with construction of a straight road (a distance of 14 to 15 Kms.) from Bhubaneswar. Accordingly it was decided to locate the Zoological Park in Jujhagarh Forest Block, Botanical garden in Krushnanagar Forest Block and develop Kanjia lake for Boating and Angling. The Director, Fisheries agreed to develop a portion of the lake for rearing various kinds of fish for visitors to see. Initially it was decided to keep spotted deer, barking deer, black bucks, wild boars, sambars, nilgai and bears in spacious enclosures. Other animals like leopard cat, mongoose, flying squirrel, porcupine, python, monkeys, hyena, jackal, civet cat, pangolin, jungle cat, parrots, mynah and other birds in suitable cages. It was decided to put efforts to capture tigers and leopards which could be exhibited in suitable cages for the time being and the suitable spacious enclosures would be built for them later on. It was also decided to raise a good flower garden and to plant important species and medicinal plants of Odisha inside proposed Botanical garden in Krushnanagar D.P.F.

It was contemplated to create nature simulating artificial streams and waterfalls by pumping water from the lake to a reservoir on the hill top and allowing the water to flow through these winding streams and locate animal enclosures along these streams so that the stream would act as barrier. Visitors would view the wild animals from the other side of the stream. Accordingly a plan was drawn but was to be abandoned because of high cost. Instead it was decided to construct enclosures, with chain link mesh fencing on three sides and wide water moat on the fourth side so that visitors can see wild animals from the moat side. A network of roads would be constructed and animal enclosures as well as animals cages would be located along these roads. The construction activities were started over a small area to begin with to house some herbivores like Cheetals, Sambar, Barking deers and a few birds.

On 29th December, 1960, Sri S.K. Patil, the then Minister of Food and Agriculture, Govt. of India inaugurated the new Biological Park christened as “Nandankanan” the heavenly garden of God. Subsequently, a Botanical Garden came up in the year 1963. The Nandankanan Biological Park was renamed as Nandankanan Zoological Park on recommendation of the Odisha Legislative Assembly Committee on Estimates, 1981-82. The zoo started growing slowly with addition of new enclosures and new animals.

3. Vision:

To strengthen the efforts in conservation of biodiversity of the region through the ex-situ conservation linked with in-situ practices.

4. Mission

To achieve the distinction of an outstanding zoo through World Class Conservation, Education, Research and Exciting visitor experiences by connecting people to biodiversity conservation.

5. Objective

Housing of wild animals and birds with special emphasis on research and education on their ecology, behavioural biology, physiology and enrichment in a semi-natural environment.

- Conservation breeding of the endangered species in captivity with least human imprints and to release them in nature to recoup their status in the wild.
- To facilitate research and scientific study on animal behavior, enclosure enrichment, feed, nutrition and reproductive biology.
- To promote education & awareness amongst visitors towards conservation of wildlife.
- To ensure housing of captive animals and birds with special emphasis on health care, animal welfare and excellent animal husbandry.

6. About us:

S.No.	Particulars	Information
Basic Information about the Zoo		
1	Name of the Zoo	Nandankanan Zoological Park
2	Year of Establishment	1960
3	Address of the Zoo	Nandankanan Zoological Park, Barang, Bhubaneswar - 754005
4	State	Odisha
5	Telephone Number	+91-674 2547850
6	Fax Number	+91-674 2547840
7	E-mail address	nandankanazoo@yahoo.com
8	Website	www.nandankanan.org
9	Distance from nearest	Airport: 18Km Railway Station: 2Km Bus Stand: 1Km
10	Recognition Valid upto (Date)	22.03.2020
11	Category of zoo	Large
12	Area (in Hectares)	362.1 ha.
13	Number of Visitors (Financial Year) 3867994	
14	Visitors' Facilities Available in Zoo	<ul style="list-style-type: none">• Multi-Level Car Parking• Drinking water kiosks with RO facility• Free toilets at convenient locations• Special toilets, wheel chairs & ramps for differently abled persons• Rest areas / sit-outs / visitors' shed at

S.No.	Particulars	Information
		<p>various locations.</p> <ul style="list-style-type: none"> • Tourist cottages • Restaurant Snacks bar & Cafeteria (run by OTDC) • Free cloak room near the entrance gate • Perambulator for children • First-aid (at zoo hospital, observatory & administrative office) • Library • Emission free battery operated vehicles • Guide maps • Publications • Nature shop (Souvenir shop) • Children Park • Baby care centre
15	Weekly Closure Day of the Zoo	Monday
	Management Personnel of the zoo	
16	Name with designation of the Officer in-charge	Dr Manoj V. Nair, Director
	Name of the Veterinary Officer	Dr Sarat Kumar Mishra
	Name of the Curator	Mr Rashmi Ranjan Swain
	Name of the Biologist	Dr Rajesh Kumar Mohapatra
	Name of the Education Officer	Mr Milan Kumar Panda
	Name of the Compounder	Mr Pradeep Kumar Nandi
		Mr Beda Prakash Sahoo
	Owner / Operator of the Zoo	
17	*Name of the Operator	Government of Odisha, Forests Environment and Climate Change Department

S.No.	Particulars	Information
	Address of the Operator	Additional chief secretary to Govt, Forests Environment and Climate Change Dept, Odisha
19	Contact details/Phone number of Operator	0647-2536822
20	E-mail address of Operator	efsec.od@nic.in

* Rule 2(m) of the Recognition of Zoo Rules, 2009.

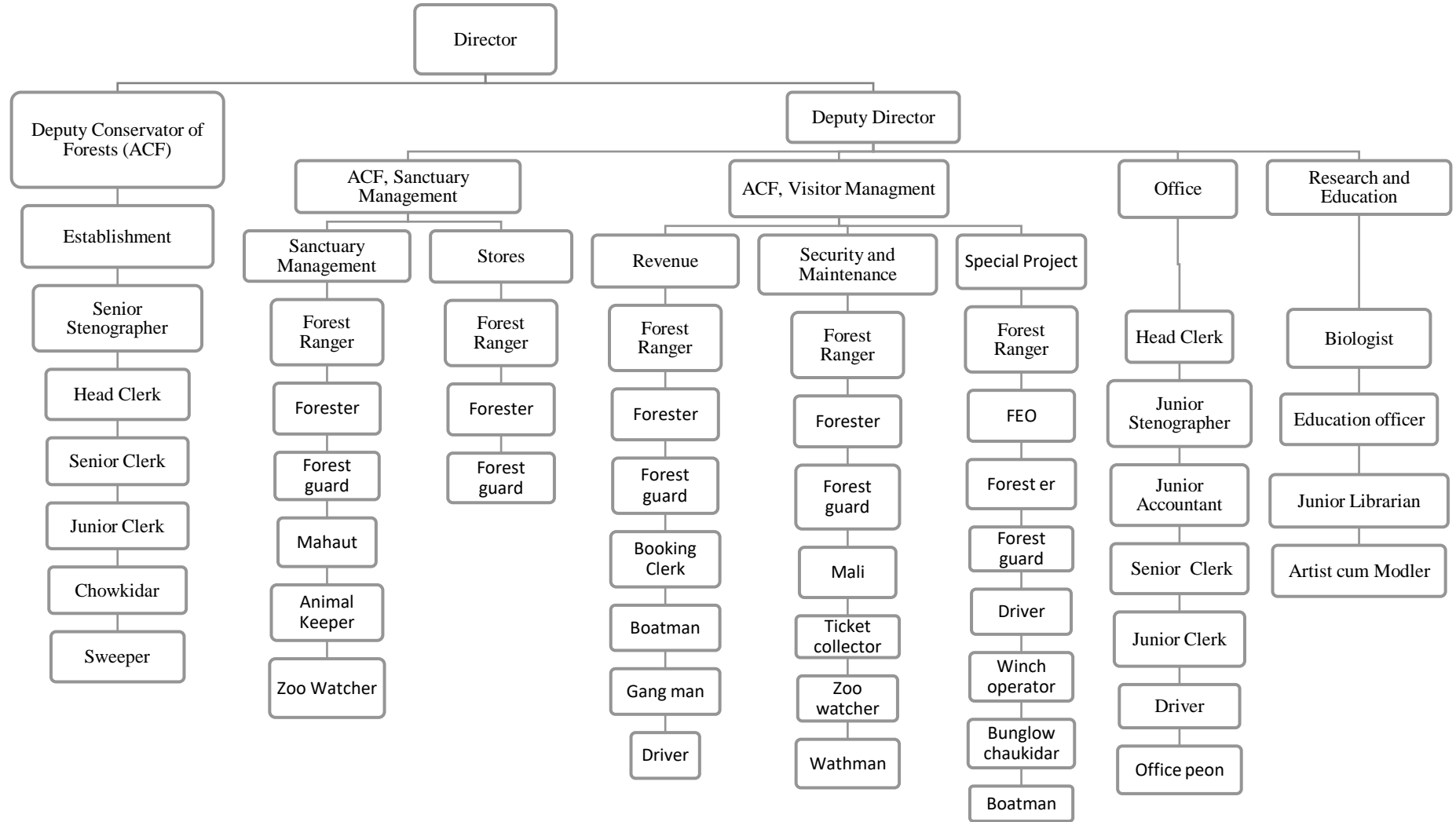
“Zoo Operator” means the person who has ultimate control over the affairs of the zoos provided that_____

I. in the case of a firm or other association of individuals, any one of the individual partners or members thereof; or

II. in the case of a company, any director, manager, secretary or other officer, who is in-charge of and responsible to the company for the affairs of the zoo; or

III. In case of zoo owned or controlled by the Central Government or any State Government or Union Territory Administration or any Trust or Society funded by the Central Government or a State Government or a Union Territory Administration, the Secretary of the concerned Department of that Government, or as the case may be the Union Territory Administration, shall be deemed to be the Zoo Operator.

7. Organizational Chart



8. Human Resources:

Manpower of the Zoo

(A) Director's office in Mayur Bhawan, Bhubaneswar

Sl.No.	Designation	Number of Sanctioned Posts	Number of the incumbent
1	Director	1	1
2	D.C.F.	1	0
3	Senior Stenographer	1	0
4	Senior Assistant	4	4
5	Junior Assistant	4	1
6	Driver	1	0
7	Office Peon	1	1
8	Office Sweeper	1	0
9	Office Chowkidar	1	0
10.	Watchman	1	1
	TOTAL	16	8

(B) Deputy director Office, Nandankanan Zoological Park

Sl.No.	Name of each category of post.	Sanctioned strength.	No. of staff in position.
1	Deputy Director, N.K.Z.P.	1	1
2	Sr. Veterinary Officer	1	1
3	ACF	3	3
4	Vety. Assistant Surgeon.	1	1
5	Forest Ranger	8	3
6	Head Clerk	1	0
7	Zoo Biologist	1	1
8	Education Officer	1	1
9.	Dy. Ranger	0	2
10	Fitter-cum-Mechanic	1	0
11	Junior Accountant	5	5
12	Junior Stenographer.	1	1
13	Forester	9	9
14	Driver(H.V)	3	0
15	Driver (L.V.)	4	1
16	Livestock-Inspector.	3	2

17	Projector Operator	1	0
18	Junior Librarian	1	0
19	Artist- cum- Modeler.	1	0
20	Guide...	1	0
21	Junior Clerk.	4	2
22	Booking Clerk	3	0
23	Welder-cum-Blacksmith	1	0
24	Forest Guard	25	21
25	Mahunta	8	0
26	Mali	5	1
27	Khansama	1	0
28	Mahunta	3	0
29	Asst. Mahunta	8	0
30	Animal Keeper	101	57
31	Office Peon/Attendant	6	4
32	Sweeper	11	5
33	Bungalow Chowkidar	3	2
34	Winch Operator	1	0
35	Ticket Collector	10	7
36	Gangman	1	0
37	Mate	2	1
38	Boat Man	2	0
39	Zoo Watcher	22	9
40	Watchman	26	22
41	Cook-Cum-Animal feed Distributor	2	0
	GRAND TOTAL:	292	162

9. Capacity Building of zoo personnel:

1. Three teams were sent to three different zoos on exposure visit to gather the knowledge on best practices adopted to enhance their capacity in management of zoo.

- **Team for Exposure visit to Arignar Anna Zoological Park, Chennai from 31.08.2022 to 05.09.2022**

1. Sri Sarat Kumar Sahoo, ACF
2. Dr Sudipta Kumar Panda, RO
3. Dr Santosh Gupta, Zoo Vet
4. Mrs Sudeepa Behera, Forester
5. Mrs Abhilipsa Mandal, Forest Guard
6. Sri Trailokya Maharana, Attendant
7. Sri Ranjit Behera, Outsourced
8. Sri Prasant Gouda, Outsourced

- **Team for Exposure visit to Sri Chamarajendra Zoological Gardens, Mysuru from 24.08.2022 to 29.08.2022**

1. Dr Sarat Kumar Mishra, SVO
2. Sri Ranjit Mohanty, RO
3. Sri Gagan Bihari Mallick, RO
4. Sri Purna Chandra Behera, Forester
5. Sri Bimbadhar Rout, Forest Guard
6. Sri Anil Maharana, Animal Keeper
7. Sri Suresh Pingua, Outsourced
8. Sri Basant Pattanayak, Outsourced

- **Teams for Exposure visit to Nehru Zoological Park, Hyderabad from 20.07.2022 to 25.07.2022**

1. Mrs Swagatika Sahoo, Range Officer
2. Miss Prangya Sahu, Forester
3. Sri Arupa Kumar Rout, Forester
4. Sri Pathani Jena, Animal Keeper
5. Sri Prafulla Bag, Animal Keeper
6. Sri Braja kishore Sahoo, Animal Keeper
7. Sri Ram Chandra Naik, Animal Keeper
8. Sri Saroj Kumar Bhoi, Zoo Watcher

2. Nandankanan Zoological Park organized two days training programme for 44 Animal keepers of Kanan Pendari Zoological Garden, Bilaspur in two batches, each batch consisting 22 participants from 16th -17th July, 2022 and 21st -22nd July, 2022 to share hands on experience of best management practices of Nandankanan Zoological Park.

3. Dr Rajesh Kumar Mohapatra, Biologist, Nandankanan Zoological Park attended International Conference on Reproductive Biology, Comparative Endocrinology and Development followed by workshop on Bio banking for conservation of endangered species in Indian zoo from 14th to 17th September, 2022 organized by LA CONES, CSIR-CCMB, Hyderabad and CZA, New Delhi.

4. Sri Milan Kumar Panda, Education Officer, Nandankanan Zoological Park has participated in the National Capacity Enhancement Workshop for Education officers from 15th to 17th February, 2023 held at Byculla Zoo, Mumbai organized by CZA, New Delhi.

5. Dr Sarat Kumar Sahu, BVO, Nandankanan Zoological Park has participated in the “Elephant Health & Welfare INDIA- Workshop for elephant veterinarians” held at Wildlife SOS Elephant Conservation and Carte Centre in Mathura, Uttar Pradesh from 26th to 03rd March, 2023.

6. Sri Subash Chandra Pradhan, Animal Keeper has attended three days Regional Workshop for Capacity Enhancement of Zookeepers for eastern and north-eastern region held at Alipore Zoological Garden, Kolkata from 20th to 23rd February, 2023 organized by CZA, New Delhi.

7. Sri Jyoti Shankar Mishra, Field Biologist, Pangolin Conservation Breeding Centre, Nandankanan Zoological Park has attended Capacity Enhancement Workshop for Zoo Biologist from 21st to 23rd March, 2023 held at Green Zoological Rescue and Rehabilitation Centre, Jamnagar organized by CZA, New Delhi.

10. Zoo Advisory Committee:

Committees constituted by Government of Odisha:

1. Expert Committee:

Government of Odisha, Forest & Environment Department vide Office order No FE-WL-WLF-0027-2019/21236/F&E dated 05.11.2019 constituted an 'Expert Committee' with the following members for strengthening of healthcare and upkeep of animals of Nandankanan Zoo.

- Shri S. K. Patnaik, IFS (Retd. PCCF Wildlife Odisha and Member CEC)-
Chairman
- Director, WII, Dehradun or his representative- Member
- Director, IVRI, Izatnagar, Bareilly or his representative- Member
- Director, Wildlife Trust of India, Noida or his representative- Member
- Director, Salim Ali Centre for Ornithology & Natural History, Coimbatore or his representative- Member
- Director, Central Avian Research Institute, Bhubaneswar- Member
- Director, MCBT and Centre for Herpetology or his representative- Member
- Project Coordinator, Animal Disease Research Institute, Phulnakhara- Member
- Director, Nandankanan Biological Park, Bhubaneswar- Member Convener

Date on which meeting was held during the year- NIL

2. Expanded Technical Committee:

Government of Odisha, Forest & Environment Department vide Office order No FE-WL-WLF-0027-2019/21238/F&E dated 05.11.2019 expanded Technical Committee The following members and officials were included in the committee.

- Dr. J. N. Mohanty, Retd Prof. Surgery, Odisha Veterinary College- Chairman
- Sri S. Mohapatra, IFS (Retd.), former CWLW Odisha- Member
- Dr. L. N. Acharjyo, Retd Zoo Veterinarian- Member
- Dean, College of Veterinary Sciences, Odisha- Member

- Dr K. K. Sharma, Assam Veterinary College, Guwahati- Member
- Dr Naveen Kumar, Veterinarian (Retd.), Hyderabad- Member
- Dr Utkarsh Shukla, Deputy Director, Lucknow Zoo- Member
- Dr Arun A. Sha, Veterinary Director, Wildlife SOS, NewDelhi- Member
- Director HSDL, Bhopal or his representative- Member
- Director, Nandankanan Biological Park, Bhubaneswar- Member Convener

Date on which meeting was held during the year- NIL

3. Health Committee:

Government of Odisha, Forest & Environment Department vide Office order No FE-WL-WLF-0027-2019/21234/F&E dated 05.11.2019 constituted a Health Committee for strengthening of healthcare and upkeep of animals of Nandankanan Zoo, with the following members

- Professor and Head, Department of Preventive Medicine, CVSc & AH –cum-Project Coordinator, Centre for Wildlife Health, OUAT, Bhubaneswar- Chairman
- Professor and Head, Department of Surgery, CVSc & AH or his Nominee- Member
- Professor and Head, Department of Pathology, CVSc & AH or his Nominee- Member
- Head, Department of Parasitology, CVSc & AH or his Nominee- Member
- HOD, Department of Nutrition, CVSc & AH or his Nominee- Member
- Senior Veterinary Officer/ VAS Nandankanan- Member Convener
- All Veterinary Officers of Nandankanan- Member
- Deputy Director, Nandankanan Zoological Park- Member
- Curator, Nandankanan Zoological Park- Member
- Range Officer, Sanctuary Management Range- Member

Date on which Health Committee visited/ meeting held during the year- 20/04/2022, 26/04/2022, 02/05/2022, 18/05/2022, 27/05/2022, 29/05/2022, 22/06/2022, 30/06/2022, 10/08/2022, 11/09/2022, 13/09/2022, 04/10/2022, 18/10/2022, 22/10/2022, 29/10/2022, 10/11/2022, 16/11/2022, 17/01/2023, 25/01/2023, 09/03/2023, 13/03/2023

12.Statement of income and expenditure of the Zoo

Head	Allotment in Rs.	Expenditure in Rs.
22-2406-02-111-0949 AEOM	65412000	65412000
22-2406-02-110-3128- 20002 Programme Expenditure	6255000	6255000
22-2406-02-111-2216- 20002 Programme Expenditure	66666000	66666000
CAMPA-APO-2022-23	23045094	23045094
22-2406-02-110-2313- 20002- CSS	2875500	2875500
CZA	10240000	9657140
Society Fund	133525000	97667869

13. Daily feed Schedule of animals

SL.NO	SPECIES	FOOD ITEM	QTY IN KG/Nos
BIRDS			
1	BUDGERIGAR	MILLET MIX (COMMON,RED,WHITE) PADDY GREEN SAG EGG (BOILED) (FOR GROUP OF 50 BIRDS) CUTTLE FISH BONE (MONDAYS)	0.020 0.005 0.005 1 No. 0.002
2	COCKATIEL, WHITE/ CINNAMON PEARS PIED	BENGAL GRAM MILLET MIX (COMMON,RED,WHITE) GREEN SAG ONION SEED MIX (SUNFLOWER/SAFFLOWER) EGG BOILED (FOR THE GROUP OF 10) CUTTLE FISH BONE (MONDAYS)	0.010 0.020 0.025 0.010 0.010 1 No. 0.002

3	COCKATOO, LESSER/ SULPHUR CRESTED/ UMBRELLA	APPLE EGG (BOILED) GROUND NUT GRAPE RIPE BANANA BENGAL GRAM SEED MIX (SUNFLOWER/SAFFLOWER) RIPE PAPAYA GREEN MAIZE WITH SPIKE (AUG-SEP) RIPE GUAVA (SEP-OCT)	0.030 ½ No. 0.030 0.030 0.030 0.015 0.020 0.025 0.050 0.050
4	CONURE,BROWN THROATED/ JANDAYA / SUN/PINEAPPLE/ YELLOW SIDED	APPLE BENGAL GRAM GROUND NUT GRAPE GREEN SAG RIPE PAPAYA SEED MIX (SUNFLOWER/SAFFLOWER) GREEN MAIZE WITH SPIKE (AUG-SEP) RIPE GUAVA (SEP-OCT) PINEAPPLE (MAY-JULY)	0.030 0.005 0.025 0.015 0.025 0.020 0.010 0.050 0.030 0.025
5	CRANE, SARUS	KERANDI FISH PULSES & GRAIN FEED BENGAL GRAM	0.250 0.150 0.050
6	DOVE, BARBARY/ LAUGHING/RING NECKED	POULTRY FEED PULSES & GRAIN FEED GREEN SAG BOILED EGG	0.010 0.050 0.010 ¼ No.
7	DOVE, SPOTTED/EMERALD	POULTRY FEED PULSES & GRAIN FEED GREEN SAG BOILED EGG MUSTARD	0.010 0.030 0.010 ½ No. 0.005
8	DOVE, DIAMOND	MILLET MIX (COMMON,RED,WHITE) PADDY PULSES & GRAIN FEED GREEN SAG CUTTLE FISH BONE (MONDAYS)	0.005 0.005 0.020 0.005 0.002

9	DUCK, MANDARIN	GREEN SAG PADDY POULTRY FEED PULSES & GRAIN FEED WHEAT, SOAKED BENGAL GRAM	0.030 0.010 0.050 0.060 0.025 0.025
10	EGRET, LITTLE/MEDIAN/ CATTLE/ LARGE	GADISHA FISH KERANDI FISH	0.200 0.100
11	EMU	BENGAL GRAM CHHATU BENGAL GRAM EGG (BOILED) GARLIC GREEN SAG ONION RIPE BANANA GRAPES	0.200 0.300 1NO 0.010 0.250 0.050 0.200 0.050
12	FINCH (BENGALESE / LONG TAILED /STAR/ZEBRA)	MILLET MIX (COMMON,RED,WHITE) PADDY GREEN SAG EGG (BOILED) (FOR GROUP OF 50 INDIVIDUALS) CUTTLE FISH BONE (MONDAYS)	0.010 0.005 0.005 1NO 0.002
13	HORNBILL, GREY/ ORIENTAL PIED	RIPE BANANA GRAPE BENGAL GRAM CHHATU	0.100 0.050 0.050
14	HERON, GREY/NIGHT	KERANDI FISH	0.100
15	HILL MYNAH	BENGAL GRAM CHHATU RIPE BANANA APPLE GRAPE	0.025 0.050 0.025 0.025
16	IBIS (BLACK/ WHITE)	KERANDI FISH	0.300
17	JUNGLE FOWL, RED	BENGAL GRAM POULTRY FEED PULSES AND GRAIN FEED PADDY GARLIC ONION MEAL WORM BOILED EGG (FOR THE GROUP)	0.050 0.050 0.030 0.020 0.005 0.010 5NO 1NO
18	KITE, BRAHMINY	KERANDI FISH	0.250

		DAY OLD CHICKS/WHITE MICE	1NO
19	KITE, BLACK	KERANDI FISH BUFFALO MEAT (EXCEPT MONDAY) DAY OLD CHICK/WHITE MICE	0.050 0.200 1No.
20	KOEL	BENGAL GRAM CHHATU RIPE BANANA GRAPE RIPE PAPAYA	0.025 0.050 0.025 0.025
21	LOVE BIRD (FISCHERS/ PEACH-FACED/MASKED)	BENGAL GRAM MILLET MIX (COMMON,RED,WHITE) PADDY GROUND NUT GREEN SAG SEED MIX (SUNFLOWER/SAFFLOWER CUTTLE FISH BONE (MONDAYS)	0.010 0.020 0.010 0.005 0.030 0.010 0.002
22	LORIKEET, BLUE FACED/ SWAINSON' S	APPLE BENGAL GRAM RIPE PAPAYA GRAPE GREEN SAG RIPE BANANA CARROT CUCUMBER RIPE GUAVA (SEPT-OCT) GREEN MAIZE WITH SPIKE (AUG- SEP)	0.050 0.010 0.050 0.025 0.030 0.025 0.025 0.025 0.050 0.050
23	LORRY, YELLOW BACKED / RED CHATTERING	APPLE BENGAL GRAM GRAPE GREEN SAG RIPE BANANA RIPE PAPAYA RIPE GUAVA (SEPT-OCT) GREEN MAIZE WITH SPIKE	0.050 0.010 0.025 0.030 0.050 0.030 0.050 0.050

		(AUG-SEP)	
24	MACAW, GREEN WINGED/ BLUE & YELLOW	APPLE BENGAL GRAM PISTACHIO WITH SHELL GRAPE SEED MIX (SUNFLOWER/SAFFLOWER) RIPE BANANA CARROT CUCUMBER POMEGRANATE GREEN COCONUT AMLA (NOV- DEC) GREEN PEA POD (DEC-FEB) CUSTARD APPLE (SEPT-OCT) GREEN MAIZE WITH SPIKE (AUG-SEP) WATER MELON (APR-MAY) RIPE GUAVA (SEP-OCT)	0.050 0.015 0.010 0.030 0.015 0.025 0.025 0.025 0.025 0.025 1 NO (ON MONDAY) 0.010 0.100 0.050 0.050 0.050 0.050
25	MUNIA (RED/BLACKHEAD/SPOTTED / SCALY BREASTED)	MILLET MIX (COMMON,RED, WHITE) CUTTLE FISH BONE (MONDAYS) PADDY GREEN SAG	0.010 0.002 0.010 0.010
26	OWL (BARN/ ORIENTAL SCOPS)	DAY OLD CHICK	2NO
27	OWL, BROWN FISH	DAY OLD CHICK WHITE MICE KERANDI FISH	2NO 2NO 0.100
28	PARAKEET, (MOUSTACHED/ ROSE RINGED/ BLOSSOM HEADED/ ALEXANDRINE/RING NECKED	BENGAL GRAM SEED MIX (SUNFLOWER/SAFFLOWER) GROUNDNUT APPLE GREEN SAG RIPE BANANA RIPE PAPAYA RED CHILI GREEN MAIZE WITH SPIKE (AUG-SEP) RIPE GUAVA (SEPT-OCT) WATER MELON (APR-MAY) GREEN PEA POD (DEC-FEB)	0.010 0.010 0.010 0.020 0.020 0.015 0.025 0.005 0.025 0.025 0.025 0.025 0.010

29	PEAFOWL, INDIAN/ WHITE	BENGAL GRAM GROUND NUT GARLIC GREEN SAG ONION POULTRY FEED PULSES & GRAIN FEED PADDY	0.050 0.050 0.005 0.100 0.050 0.040 0.040 0.050
30	PELICAN, GREY/ROSY	GADISHA FISH	1.000
31	PHEASANT, GOLDEN/ SILVER/ YELLOW GOLDEN/ LADY AMHERST'S /REEV'S / RING NECKED	GARLIC GREEN SAG ONION POULTRY FEED PULSES AND GRAIN FEED BOILED EGG CRICKET WORM/MEAL WORM	0.010 0.050 0.020 0.050 0.050 ½ NO 5NO
32	ROSELLA, EASTERN	APPLE BENGAL GRAM GREEN SAG GROUND NUT RIPE BANANA SEED MIX (SUNFLOWER/SAFFLOWER) RIPE PAPAYA GREEN MAIZE WITH SPIKE (AUG-SEP) RIPE GUAVA (SEPT-OCT) PINE-APPLE (MAY-JULY) WATER MELON (APR-MAY)	0.050 0.010 0.025 0.030 0.050 0.010 0.025 0.050 0.050 0.025 0.050
33	SPARROW, JAVA	MILLET MIX (COMMON,RED, WHITE) PADDY GREEN SAG BOILED EGG (FOR 20 GROUP) CUTTLE FISH BONE (MONDAYS)	0.010 0.010 0.010 1NO 0.005
34	STORK, OPEN BILLED	SNAIL WITH SHELL	0.400
35	STORK, PAINTED	GADISHA FISH	0.300
36	STORK, LESSER ADJUTANT	GADISHA FISH	0.200

		DAY OLD CHICK	2NO
37	SIKRA	DAY OLD CHICKS	2NO
38	SWAN, BLACK	BLACK SWAN FEED GREEN SAG BENGAL GRAM CABBAGE DHANIA SAG WHEAT (SOAKED)	0.250 0.250 0.100 0.100 0.100 0.100
39	VULTURE, CINEREOUS	CHICKEN MEAT (EXCEPT MONDAY)	1.000
40	VULTURE, WHITE BACKED/ LONG BILLED	CHICKEN MEAT (EXCEPT MONDAY)	0.500
41	VULTURES, LONG BILLED AT VCBC	BUFFALO MEAT (ON TUESDAY AND SATURDAY)- THE BUFFALO TO BE RETAINED MIN. 7 DAYS BEFORE SLAUGHTER	2.000
42	VULTURE, HIMALAYAN GRIFFON	CHICKEN MEAT (EXCEPT MONDAY)	0.750
43	OSTRICH	LUCERN GRASS/ DHANIA SAG OSTRICH FEED BOILED EGG (WITH SHELL)	1.500 1.750 2NO
44	PARROT, AFRICAN GREY	APPLE BENGAL GRAM GRAPE GROUND NUT SUNFLOWER SEED RIPE PUMPKIN RIPE PAPAYA RIPE SAPETA (APR-MAY) WATER MELON(APR-MAY)	0.030 0.015 0.030 0.030 0.010 0.050 0.050 0.050 0.050
45	PARROT, MEYER'S/ RED BELLIED	APPLE BENGAL GRAM BEANS GRAPES POMEGRANATE SUNFLOWER SEED RIPE PAPAYA	0.030 0.015 0.030 0.020 0.020 0.010 0.050

46	TURACO, VIOLET/ LIVINGSTONE	APPLE GRAPE TOMATO POMEGRANATE RIPE BANANA RIPE PAPAYA WATERMELON (APR-MAY) RIPE MANGO (APR-MAY)	0.025 0.025 0.050 0.025 0.050 0.050 0.050 0.025
MAMMALS			
47	ANTELOPE, FOUR HORNED	COMMON GRASS DEER MASH DEER FODDER BENGAL GRAM BIRIDAL RIPE BANANA RIPE PUMPKIN JHUDANGA	1.000 0.500 1.000 0.100 0.100 0.100 0.100 0.100
48	BEAR, HIMALAYAN BLACK	BIRIDAL HONEY MILK RICE (PAR BOILED) RIPE PUMPKIN RIPE BANANA WATER MELON (APR-MAY) CARROT SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (AUG-SEP) BOILED EGG (NOV-FEB)	0.100 0.025 0.100 0.800 0.350 0.350 0.500 0.100 0.150 0.200 2NO
49	BEAR, SLOTH	BIRIDAL HONEY MILK RICE (PAR BOILED) RIPE PUMPKIN RIPE BANANA WATER MELON (APR-MAY) SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (AUG-SEP) CARROT	0.100 0.025 0.100 0.700 0.300 0.300 0.500 0.100 0.200 0.100 2NO

		BOILED EGG (NOV- FEB)	
50	BLACK BUCK	COMMON GRASS DEER MASH DEER FODDER RIPE PUMPKIN JHUDANGA	1.000 0.500 1.000 0.100 0.100
51	BABOON, HAMADRYAS	GROUND NUT APPLE BRINJAL LADIES FINGER EGG (BOILED) BEAN MILK RICE (PAR BOILED) RIPE BANANA GRAPE POMEGRANATE CARROT DESI KANKADA (JULY-SEPT) AMLA (NOV-DEC) SWEET POTATO (OCT-MAR) GREEN MANGO (APR-MAY) PINE-APPLE (MAY-JUL) WATER MELON (APR-MAY)	0.050 0.200 0.100 0/050 1NO 0.050 0.010 0.050 0.250 0.100 0.150 0.100 0.100 0.025 0.050 0.050 0.100 0.150 0.050 0.050 0.050 0.100 0.150
52	CAPUCHIN, BLACK TUFTED	MILK RICE BOILED EGG APPLE RIPE BANANA CUCUMBER CARROT POMEGRANATE GRAPES RIPE PAPAYA RIPE GUAVA (SEPT-OCT) MEAL WORMS SWEET CORN (BOILED) BENGAL GRAM SUNFLOWER SEEDS CHICKEN MEAT(BOILED) (ON WEDNESDAY)	0.010 0.025 1 ½ No 0.050 0.100 0.100 0.100 0.050 0.050 0.050 0.025 5 Nos 0.025 0.025 0.025 0.100
53	CAT, JUNGLE	CHICKEN DRESSED	0.400

		MILK TOMATO RICE (PAR BOILED) GREEN SAG RIPE BANANA BEDANA HONEY CARROT KHAJARA PINE-APPLE (MAY-JUL) WATER MELON (APR-MAY) DESI KANKADA (JULY-SEPT) RIPE GUAVA (SEPT-OCT) GREEN COCONUT (APR-JUN) CUSTARD APPLE (SEPT-OCT) RIPE PAPAYA PALANGA SAG (DEC-FEB) ORANGE (NOV-MAR) AMLA (NOV-DEC) GARLIC ONION GREEN MAIZE WITH SPIKE (AUG-SEP) GREEN PEA POD (DEC-FEB)	0.050 0.050 0.050 0.150 0.150 0.025 0.050 0.025 0.050 0.200 0.050 0.020 1NO 0.050 0.100 0.050 0.050 0.025 0.005 0.020 0.050 0.050
58	CHINKARA	DEER MASH BENGAL GRAM (SOAKED) CARROT RIPE PUMPKIN JHUDANGA DEER FODDER	0.500 0.050 0.200 0.200 0.100 1.000
59	CIVET, COMMON PALM	RICE (PAR BOILED) CHICKEN MEAT KIMA MILK APPLE RIPE BANANA RIPE PAPAYA DAY OLD CHICK	0.010 0.100 0.005 0.050 0.250 0.050 1 NO
60	CIVET, SMALL INDIAN	RICE (PAR BOILED) CHICKEN MEAT KIMA MILK KERANDI FISH	0.050 0.050 0.005 0.050 0.200

		RIPE BANANA	
61	BAT, FRUIT	RIPE BANANA APPLE RIPE PAPAYA GRAPE	0.150 0.050 0.100 0.025
62	DEER, BARKING	COMMON GRASS DEER MASH DEER FODDER	1.000 0.500 0.500
63	DEER, MOUSE	RIPE BANANA APPLE GREEN SAG RIPE PUMPKIN LADIES FINGER BEAN DESI KANKADA (JULY-SEPT) CARROT SWEET POTATO (OCT-MAR)	0.250 0.050 0.050 0.050 0.100 0.125 0.025 0.125 0.100
64	DEER, SAMBAR ADULT, 1YR ABOVE	COMMON GRASS DEER MASH RIPE BANANA (FOR THE GROUP) DEER FODDER	12.000 2.500 3.000 2.000
	DEER, SAMBAR SUB-ADULT, 2MONTHS-1 YEAR	COMMON GRASS DEER MASH DEER FODDER	8.000 1.750 1.000
65	DEER, SPOTTED ADULT, 1YR ABOVE	COMMON GRASS DEER MASH DEER FODDER	2.000 1.100 1.000
	DEER, SPOTTED SUB-ADULT 2MONTHS- 1YEAR	DEER MASH COMMON GRASS DEER FODDER	0.750 1.000 1.000
66	DEER,SWAMP ADULT, 1YR ABOVE	BENGAL GRAM, WHOLE COMMON GRASS DEER MASH PARA GRASS CARROT JHUDANGA RIPE PUMPKIN RIPE BANANA (FOR THE GROUP)	0.100 10.000 1.500 3.000 0.100 0.100 0.100 1.000
	DEER, SWAMP SUB-ADULT 2MONTHS-1YR	BENGAL GRAM, WHOLE COMMON GRASS DEER MASH PARA GRASS CARROT	0.050 5.000 1.000 1.500 0.100

		JHUDANGA RIPE PUMPKIN	0.100 0.100
67	DEER, BROW ANTLERED, MANIPURI	BENGAL GRAM WHOLE DEER FODDER WHEAT BRAN (CHOKAD) NB21 CARROT RIPE BANANA BLACK SALT JHUDANGA	0.600 5.000 1.000 10.000 0.200 0.200 0.020 0.200
68	DEER, HOG	WHEAT BRAN BENGAL GRAM COMMON GRASS DEER FODDER	0.250 0.250 1.000 1.000
69	ELEPHANT (ADULT)	WHEAT COMMON GRASS ELEPHANT FODDER NB21 PARA GRASS TURMERIC WHOLE MOLASES COMMON SALT COCONUT STRAW CASTOR OIL BAMBOO LEAVES (JULY-OCT) SUGARCANE (MARCH-APRIL) WATER MELON (APR-MAY) RIPE BANANA (FOR GROUP)	6.000 50.000 50.000 75.000 75.000 0.050 0.300 0.050 1NO 2.000 0.100 10.000 15.000 4.000 2.000
70	ELEPHANT (MAMA)	WHEAT COMMON GRASS ELEPHANT FODDER NB21 PARA GRASS TURMERIC WHOLE MOLASES COMMON SALT COCONUT STRAW CASTOR OIL	4.000 20.000 20.000 20.000 20.000 0.025 0.150 0.050 1NO 1.000 0.050 5.000 10.000 2.000

		BAMBOO LEAVES (JULY-OCT) SUGARCANE (MARCH-APRIL) WATER MELON (APR-MAY)	
71	FOX, INDIAN	BUFFALO MEAT (EXCEPT MONDAY) CHICKEN MEAT BOILED EGG DAY OLD CHICK	0.250 0.250 1 No 1 No
72	GIRAFFE	WHEAT, SOAKED BENGAL GRAM, SOAKED MUNG, SOAKED DEER MASH FRESH RIPE BANANA CUCUMBER TOMATO ONION SALT(powdered free flow) TREE FODDER (OSTA/BARA) NB21 GREEN SAG JHUDANGA RIPE PUMPKIN GARLIC SWEET POTATO (OCT-MAR) CARROT APPLE WATER MELON (APR-MAY) GREEN PEA POD (DEC- FEB)	1.000 1.000 1.000 1.250 5.000 3.000 0.500 0.250 0.100 30.000 5.000 2.000 1.500 2.000 0.025 1.000 3.000 2.000 2.000 1.000
73	GAUR	BALCK GRAM, SOAKED WHEAT BRAN DEER MASH MOLASSES PARA GRASS NB21 TREE FODDER (OSTA) RIPE BANANA	0.250 2.000 5.000 0.050 15.000 15.000 5.000 0.500
74	GIANT SUIRREL	BENGAL GRAM APPLE GRAPE RIPE BANANA	0.050 0.050 0.025 0.100 0.050 0.100

		GREEN PEA POD (DEC-FEB) RIPE GUAVA(SEP-OCT)	
75	HARE, INDIAN	DUBA GRASS GREEN SAG PUMPKIN BEAN CARROT APPLE ORANGE (NOV-MAR) GRAPE BENGAL GRAM (SOAKED) SWEET POTATO (OCT-MAR) PALANGA (DEC-FEB)	0.100 0.100 0.050 0.050 0.050 0.050 0.050 0.025 0.025 0.100 0.100
76	HIPPOPOTAMUS ADULT, 2 ½ YRS ABOVE	BENGAL GRAM WHOLE PUMPKIN CARROT GREEN SAG MINERAL MIXTURE CHOKAD (WHEATBRAN) COMMON SALT RIPE BANANA PARA GRASS	1.500 1.500 0.500 1.500 0.100 4.000 0.100 1.000 50.000
	HIPPOPOTAMUS SUB-ADULT 6MONTHS-2 ½ YRS	BENGAL GRAM WHOLE PUMPKIN CARROT GREEN SAG MINERAL MIXTURE CHOKAD (WHEATBRAN) COMMON SALT RIPE BANANA PARA GRASS	0.750 0.750 0.500 1.000 0.050 2.500 0.100 0.500 20.000
77	HYENA, STRIPED	BUFFALO MEAT (MONDAY FASTING)	2.000
78	JACKAL	BUFFALO MEAT (MONDAY	1.000

		FASTING)	
79	LEOPARD, ADULT (ABOVE 1 ½ YEAR)	BUFFALO MEAT (FASTING ON MONDAYS)	4.000
	LEOPARD, SUB-ADULT (1-1½ YEARS)	BUFFALO MEAT (FASTING ON MONDAYS)	3.000
	LEOPARD, JUVENILE (6MONTHS-1 YEAR)	BUFFALO MEAT (FASTING ON MONDAYS)	1.000
80	LION, ASIATIC/HYBRID/AFRI CAN ADULT, ABOVE 2 ½ YR	BUFFALO MEAT (FASTING ON MONDAYS)	9.000
	LION, SUB ADULT (1 YEAR – 2 ½ YEARS)	BUFFALO MEAT (FASTING ON MONDAYS)	6.000
	LION, JUVENILE (6 MONTHS – 1 YEAR)	BUFFALO MEAT (FASTING ON MONDAYS)	3.000
	CUB (3 MONTHS TO 6 MONTHS)	CHICKEN (DRESSED, BONE LESS)	1 NO
81	LANGUR, COMMON	BENGAL GRAM WHOLE LADIES FINGER GROUND NUT BEAN MILK RICE (PAR BOILED) RIPE BANANA GREEN PEA POD (DEC-FEB) SWEET POTATO (OCT-MAR) GREEN MANGO (APR-MAY) GREEN MAIZE WITH SPIKE (AUG-SEP) WATER MELON (APR-MAY)	0.020 0.030 0.050 0.050 0.010 0.050 0.250 0.050 0.050 0.050 0.050 0.100
82	MACAQUE,RHESUS/ BONNET ADULT (1½ YR ABOVE)	BENGAL GRAM WHOLE BRINJAL LADIES FINGER GROUND NUT BEAN	0.050 0.100 0.050 0.050 0.050 0.010 0.050 0.250

		MILK RICE (PAR BOILED)	0.100 0.100
		RIPE BANANA	0.150 0.050
		SWEET POTATO (OCT-MAR)	0.100 0.050
		GREEN MAIZE WITH SPIKE (AUG-SEP) WATER MELON (APR-MAY)	
		GREEN PEA POD (DEC-FEB) PINE-APPLE (MAY-JUL) GREEN MANGO (APR-MAY)	
	SUB-ADULT	BENGAL GRAM WHOLE	0.025 0.050
		BRINJAL LADIES FINGER	0.025 0.025
		GROUND NUT	0.025 0.005
		BEAN MILK RICE (PAR BOILED)	0.025 0.125 0.025
		RIPE BANANA	0.050 0.050
		GREEN PEA POD (DEC-FEB)	0.075
		SWEET POTATO (OCT-MAR)	
		GREEN MANGO (APR-MAY)	
		GREEN MAIZE WITH SPIKE (AUG-SEP) PINE-APPLE (MAY-JUL)	
		WATER MELON (APR-MAY)	
83	MACAQUE,ASSAMESE ADULT (1 ½ YR ABOVE)	BENGAL GRAM WHOLE LADIES FINGER GROUND NUT BEAN MILK RICE (PAR BOILED)	0.050 0.050 0.050 0.010 0.050 0.250 0.150 0.150 0.100
		RIPE BANANA APPLE POMEGRANATE	1 NO 0.100 0.100

		CARROT EGG, BOILED SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (AUG-SEP) WATER MELON (APR-MAY) GREEN PEA POD (DEC-FEB) PINE-APPLE (MAY-JUL) GREEN MANGO (APR-MAY) AMLA (NOV-DEC)	0.150 0.050 0.100 0.050 0.025
84	MACAQUE, STUMP TAILED	BENGAL GRAM WHOLE LADIES FINGER GROUND NUT BEAN MILK RICE (PAR BOILED) RIPE BANANA APPLE POMEGRANATE CARROT EGG, BOILED SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (AUG-SEP) WATER MELON (APR-MAY) GREEN PEA POD (DEC-FEB) PINE-APPLE (MAY-JUL) GREEN MANGO (APR-MAY) AMLA (NOV-DEC)	0.050 0.050 0.050 0.010 0.050 0.250 0.150 0.150 0.100 1 NO 0.100 0.100 0.150 0.050 0.100 0.050 0.025
85	MEERKAT, SLENDER TAILED	CHICKEN MEAT MEAL WORM CARROT APPLE EGG, BOILED	0.150 0.010 0.070 0.080 1 No (on Wednesday and Sunday)
86	MONGOOSE COMMON	KERANDI FISH	0.150
87	SQUIRREL, MONKEY	MILK RICE BOILED EGG APPLE BANANA CUCUMBER CARROT	0.005 0.010 ½ No 0.025 0.050 0.050 0.025

		POMEGRANATE GRAPES RIPE PAPAYA RIPE GUAVA (SEPT-OCT) MEAL WORMS SWEET CORN (BOILED) BENGAL GRAM SUNFLOWER SEEDS CHICKEN MEAT BOILED (ON WEDNESDAY)	0.025 0.025 0.025 0.025 5 Nos 0.010 0.010 0.010 0.050
88	RED HAND TAMARIN/ BLACK TUFTED MARMOSET	CERELAC-II BOILED EGG CARROT BEAN RIPE BANANA POMEGRANATE APPLE GRAPE MEAL WORM WATER MELON (APR-MAY) SUGAR CANE (JAN-MAR)	0.020 1/4NO 0.010 0.010 0.020 0.010 0.020 0.020 5NO 0.020 0.020
89	NILGAI ADULT, 1YR ABOVE	COMMON GRASS DEER MASH DEER FODDER RIPE BANANA (FOR THE GROUP)	15.000 2.500 3.000 4.000
	SUB ADULT (6 MONTHS – 1 YEAR)	COMMON GRASS DEER MASH DEER FODDER	10.000 2.500 2.000
90	PANGOLIN, INDIAN	RED WEAVER ANT EGGS BOILED EGG	0.600 1 No.
91	PORCUPINE	BENGAL GRAM WHOLE BRINJAL GROUND NUT BEAN GREEN MAIZE WITH SPIKE (AUG-SEP MILK RICE (PAR BOILED) RIPE BANANA RIPE PUMPKIN SWEET PATATO (OCT-MAR)	0.050 0.050 0.100 0.010 0.050 0.010 0.100 0.150 0.050 0.100
92	RATEL	HONEY GOAT MEAT RIPE BANANA	0.020 0.250 0.200 0.300

		BUFFALO MEAT (EXCEPT MONDAY)	
93	TIGER ADULT, 2 ½ YR ABOVE	BUFFALO MEAT (FASTING ON MONDAYS)	10.000
	TIGER, SUB ADULT 1YR-2 ½ YR	BUFFALO MEAT (FASTING ON MONDAYS)	6.000
	TIGER, JUVENILE 6MN- 1YR	BUFFALO MEAT (FASTING ON MONDAYS)	3.000
	TIGER, CUB 3MN-6MN	CHICKEN (DRESSED, BONELESS)	1NO
94	WILD BOAR	WILD BOAR MASH RIPE PUMPKIN SWEET POTATO (OCT-MAR)	1.000 0.500 0.250
95	WILD DOG	BUFFALO MEAT (FASTING ON MONDAYS) CHICKEN MEAT	0.500 0.750
96	WOLF, INDIAN	BUFFALO MEAT (FASTING ON MONDAYS) CHICKEN MEAT	0.500 1.000
REPTILES			
97	ANACONDA, YELLOW ADULT	WHITE MICE (ON SUNDAY & WEDNESDAY)	4 NO
	SNAKELETS	PINKY MICE (ON SUNDAY & WEDNESDAY)	3 NO
98	BOA RED SAND / BOA COMMON SAND	WHITE MICE /RAT (ON MONDAYS)	2NO
99	CROCODILE, MORLETE	ROHI FISH BUFFALO MEAT (FASTING ON MONDAYS)	0.500 1.000
100	CROCODILE, NILE	CHICKEN MEAT (ON MONDAYS)	0.500
101	CROCODILE, SIAMESE	ROHI FISH BUFFALO MEAT (FASTING ON MONDAYS)	0.500 1.000
102	CROCODILE, LONG SNOUTED/GHARIAL ADULT(5 YEARS ABOVE)	ROHI FISH (FASTING ON MONDAYS)	1.000
	SUB-ADULT (2- 5 YEARS)	FISH FINGERLING-LIVE ABOUT 6" (FASTING ON MONDAYS)	0.800
103	CROCODILE, MUGGER	ROHI FISH (FASTING ON MONDAYS)	1.000

	SUB-ADULT (2- 5 YEARS)	KERANDI FISH GADISHA	0.250 0.250
104	CROCODILE, DWARF CAIMON	FISH FINGERLINGS (LIVE) (ON TUESDAY, THURSDAY, SATURDAY OF EVERY WEEK)	0.250
105	CROCODILE, SALT WATER	BUFFALO MEAT (FASTING ON MONDAYS)	1.000
106	COBRA, KING	RAT SNAKE (MONDAY)	1NO
107	COBRA, MONOCELLATE/ BINOCELLATE	RAT (MONDAY) DAY OLD CHICK (MONDAY) GADISHA FISH	1NO 1NO 0.050
108	IGUANA	LEUTIA SAG PALANG SAG(DEC-FEB) FENUGREEK LEAVES (DEC-FEB) DRUMDTICK LEAVES CORIANDER LEAVES APPLE BANANA RIPE PAPAYA POMEGRANATE RIDGE GOURD CAPSICUM CUCUMBER LADIES FINGER BOILED EGG	0.020 0.020 0.020 0.020 0.010 0.010 0.010 0.010 0.020 0.020 0.010 0.010 1 NO (FOR THE GROUP)
109	KRAIT, BANDED	RAT SNAKE OR RAT/MICE	1 NO. 2NO
110	KRAIT, COMMON INDIAN	RAT/MICE	1NO
111	MONITOR LIZARD, COMMON	KERANDI FISH/ROHI FISH	0.250
112	MONITOR LIZARD, WATER	GADISHA FISH ROHI FISH	0.200 0.200
113	PYTHON, INDIAN ROCK/ BURMESE ROCK , ADULT	CHICKEN (MONDAY)	1 NO
	SUB ADULT	GUINEA PIG/RAT (MONDAY)	2 NO
114	PYTHON, RETICULATED ADULT	CHICKEN (MONDAY)	1 NO
	SUB-ADULT	GUINEA PIG (ON MONDAY)	2 NO
115	SNAKE, RAT	RAT (MONDAY)	1 NO
116	VIPER RUSSEL'S	RAT/DAY OLD CHICK (MONDAY)	2 NO

117	TORTOISE, STAR INDIAN	GREEN SAG RIPE BANANA LADIES FINGER JHUDANG/BEAN CUCUMBER PUMPKIN TAMATO PALANG SAG (DEC-FEB)	0.015 0.025 0.030 0.020 0.050 0.050 0.050 0.025
118	TORTOISE, ASIAN BROWN	GREEN SAG RIPE BANANA LADIES FINGER JHUDANG/BEAN CUCUMBER PUMPKIN TAMATO PALANG SAG (DEC-FEB)	0.030 0.050 0.060 0.040 0.100 0.100 0.050 0.050
119	TURTLE, FRESH WATER/ INDIAN FLAP- SHELLED/ GANGES SOFT- SHELLED/ INDIAN TENT TURTLE	GREEN SAG KERANDI FISH CABBAGE	0.010 0.050 0.010
120	TURTLE, CHITRA	GREEN SAG PUMPKIN KERANDI FISH CABBAGE	0.025 0.050 0.100 0.025

14. Vaccination Schedule of animals:**VACCINATION SCHEDULE**

Sl.No.	Species	Vaccine against	Schedule
1	Carnivores (tiger, lion, leopard, leopard cat, Fishing cat, jungle cat)	Feline pan leucopenia Calici Disease Rhino tracheitis	Feligen-CRP Annually – (July)
2	Hyenas, jackals, wolf, wild dog	Distemper, Parvo, hepatitis, Leptospira Parainfluenza	Nobivac- DHPPi (Multivalent vaccine) Annually (December)
		Rabies	Annually (October)
3	Sloth bear and Himalayan Black bear	Distemper, Parvo, hepatitis, Leptospira Parainfluenza	Nobivac- DHPPi (Multivalent vaccine) Annually (May)
4	Elephant	Haemorrhagic septicemia	Half yearly (March & September)
		Foot & Mouth Disease	Annually (January & July)
		Tetanus	Half Yearly (Jan & July)
		Rabies	Annually (October)
		Anthrax	Annually (March)
5	Gaurs	Trivalent (HS, BQ, FMD)	Raksha- Triovac Annually
6	Birds	LaSota vaccine	Every December (in drinking water)

CHEMOPROPHYLAXIS SCHEDULE

Sl. No.	Species	Chemoprophylaxis against	Schedule
1	Carnivores (Felids-tiger, lion, leopard) (Canids- Wolf, Jackal, wild dog) (Hyenids)	Trypanosomiasis	Triquin- (quarterly) December April August
2	Birds	Coccidiosis	Sulfquinoxaline / Cocciostats (during monsoon)

Intervention by the veterinary wing of the zoo

Sl. No.	Activities	Number of cases dealt
1.	Cases treated	11137
2.	Surgery performed	29
3.	De-worming	9849
4.	Chemical immobilization	161
5.	Screening of blood samples	161
6.	Bacteriological examination	116
7.	Faecal Sample examination	4126
8.	Molecular screening of samples	17

Vaccination/ Chemoprophylaxis:

Sl. No.	Vaccination/ Chemoprophylaxis	Number of cases dealt
1	BioFel PCHR (against Feline Panleucopenia)	87
2	Raksha-Triovac	06
3	H.S.V.	07
4	Triquin Administartion	185
5	Anti-Rabies Vaccine	25
6	Tetanus Toxoid	08
7	Multivalent Vaccine for canids	24
9	Anthrax	03
10	FMD vaccine	07

15. De-worming Schedule of animals

Sl. No.	Type of animal	Enclosure number	Period (month)
1	CARNIVORES (at 4 months interval) Or whenever required	30,31,32,33 and tiger safari, lion safari (tiger section)	FEBRUARY
			JUNE
			OCTOBER
		18,19,20,21,22,23,24,25,26,27 28,29,90,91.(tigers, lions, Jackal, leopards) bear safari sloth and himalayan bears	FEBRUARY
			JUNE
			OCTOBER
		small cats, small mammal house, mouse deer, indian hare, giant squirrel, nocturnal house,	FEBRUARY
			JUNE
			OCTOBER
2	HERBIVORES (at 4 months interval) Or whenever required	Herbivore safari, spotted deer, Elephants	MARCH
			JULY
			NOVEMBER
		Rhinoceros, hippopotamus, giraffe, zebra Manipuri deer, barking deer	MARCH
			JULY
			NOVEMBER
		Sambar, swamp deer, spotted deer, nilgai, hog deer, black buck, white buck, four horned antelope, primates including chimp.	MARCH
			JULY
			NOVEMBER
3	BIRDS (at 4 months interval) Or whenever required	Enclosures 1 to 13, enclosures inside the children park	FEBRUARY
			JUNE
			OCTOBER
		emu, cassowary, aquatic bird peacock, lesser adjutant stork, open bill stork, Sarus crane, black swan, mandarin duck, Rose ringed parakeet, Brahminy kite	FEBRUARY
			JUNE
			OCTOBER
4	REPTILES (at 4 months interval) Or whenever required	All snakes Star tortoise, monitor lizard	MARCH
			JULY
			NOVEMBER
5	Indian Pangolins (at 4 months)	At Pangolin conservation breeding centre	FEBRUARY
			JUNE
			OCTOBER

	interval) Or whenever required		
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16. Disinfection Schedule:

Disinfection schedule

Ideal upkeep of captive animals in the zoo principally depends on general hygiene and sanitation of the enclosures, captive animals along with their handlers. The following regimen of cleaning and disinfection is carried out in Nandankanan Zoological Park.

- a. Daily-**
- (1) Removal of fecal matter, leftover bone from carnivore enclosures, cleaning of floor of feeding cubicles, kraal, corridor, passage and exhibit area.
 - (2) Removal of left over fodder, fecal matter from herbivore enclosures and cleaning.
 - (3) The feed trough and water trough etc. to be cleaned with scrubber.
 - (4) Drains to be cleaned with diluted phenyl.
 - (5) Removal of plastic, polythene and unwanted materials from exhibit area and moats.
- b. Weekly-**
- (1) Pest control measures to be taken in and around feeding cubicle.
 - (2) Deweeding to be carried out in and around enclosures.
 - (3) Keeping the exhibit area and moat free from debris.
 - (4) The feeding place and water trough etc. to be cleaned with bleaching powder.
 - (5) Drains to be treated with lime and bleaching powder.
 - (6) Feeding cubicles to be cleaned with potassium permanganate.
- c. Monthly-**
- (1) Leftover bones in bone pits to be lifted and the bone pits to be treated with acaricide.
 - (2) Body spray on big cats with Acaricide (cypermethrin etc.) and also simultaneously in the enclosures.
 - (3) Monthly burning of all debris to be done in exhibit/display area whenever required. Liming to be carried out in and around enclosures.
 - (4) Water purifier i.e. Sokrena WS to be treated to all water storing areas.
- d. Bi-monthly-**
- (1) Kohrsolin as ground spray is to be carried out in and around enclosure after deweeding.
 - (2) Acaricide spray (Cypermethrin etc.), simultaneously on the enclosure ground and on the body of the big cats

(3) All wet moat water to be pumped out, desilted, lime washed and then filled with fresh water.

e. Half yearly-(1) All feeding and drinking troughs are to be white washed.

(2) All floors, walls, roof of feeding cells, transporting cages, netting, rods to be flame sterilized (March & November every year).

f. Annually- (1) Removal of top soil up to 6” in all kraals and intensively used, pacing areas and refilling with fresh sand and soil.

(2) All walls, roof top both inside and outside to be lime washed.

(3) All chain-link mesh, angles of enclosures and animal cages, sliding doors, squeeze cages etc. to be painted.

17. Health Check-up of employees for zoonotic diseases:

No health check-up of employees for zoonotic diseases was carried out during the year 2022-23. The last Health Check-up of 173 employees was carried out on 26th and 27th March 2018.

18. Development Works carried out in the zoo during the year:

During the year, many enclosures and visitor amenities were renovated and supplemented with enclosure enrichments, standoff barrier, signage and landscaping where ever necessary. The major developmental works carried out were Multi Level Car Parking, Zoo Laboratory, Modular PM & Incinerator complex, Carnivore quarantine ward, Indian fox enclosure, Children’s park, Nursery for Hand Rearing of animal babies and Operation theater are worth mentioning.

Inauguration of Multi-Level Car Parking facility

The Multi-Level Car Parking building has a three storied parking facility over total 5.0-acre area with a built-up area of 16800 sq. mt (G+ 2F) and a capacity to accommodate parking for 583 (151+151+151+130) cars. The estimated cost of the facility is Rs. 3542.79 Lakhs. The project work has been executed by R&B Division-III, Bhubaneswar from the budget provision made under “Development and Beautification of Nandankanan Zoological Park”. Fire safety measures including sprinkling system has been provided throughout the parking area. A pond near the MLCP

has been renovated and is being developed as a water lily pool to have different varieties and colours of lily round the year. Driver rest rooms, drinking water and snack kiosks, CCTV monitoring, elevator, ramps and landing facilities for visitors along with wash room for both gents and ladies for visitors have been provided. The open areas adjacent to MLCP have been developed with paver tiles and landscaped for safe accommodation of 2000 nos of motor cycle and cycles. Boom bar for car entry with digital ticketing system have been provided. The facility not only provides safe parking of 583 cars at a time but also addresses the issues for traffic jam and rush at main PWD Road from Nandankanan Police Station to Barang By-Pass Road.

Nursery for Hand rearing of animal babies

Nandankanan zoo receives orphaned and rescued wild animal babies from all across the state on regular basis for their hand raising and rehabilitation. Animal babies of the zoo animals also require bottle feeding due to mother rejection and in health issues. 'Nursery for hand rearing of animal babies' is a centre categorically designed to cater all these needs. The centre has the facility for the animal keeper to stay inside for rearing of new-born round the clock. It has one milk preparation area, one neonatal ICU for sick neonates, separate cells for carnivore, herbivore and primate babies. The centre is attached to five small closed roof paddock areas where the animal babies can have exercise and access to sunlight. This fully air-conditioned facility will definitely boost our efforts in rearing rescued hapless neonates.

Renovation of Children's Park

The children's park is situated near fountain square of Nandankanan Zoological Park with area of 16000 sq. ft. Children Park has renovated with beautiful landscaping & new Play equipments are such as-Swing-3nos, Slider-2nos, MerryGo-ground-1no, Spring Rider-3nos, Double see-saw-1no, Air walker-1no, Pendulum-1no, Trampoline(10')-1no, ABS Trainer-1no, Spinner-1no & Multi-Play station-1no. For maintaining cleanliness, ten nos of dustbins were fixed at different points of the park. 13 nos. of Sit outs are placed at different places of parks for sitting purpose. Different informative signages are given like birds of Nandankanan, State symbols of Odisha, Tree signages etc. for giving better information to children.

Operation Theatre

Nandankanan has always tried to provide best healthcare facility for its denizens. The new 'Operation theatre' has all advanced facilities for surgical intervention of sick captive animals. The centre has facilities for gaseous anaesthesia, oxygen supply, patient monitor, ventilator facility, ultrasonography, electro cautery system for bloodless surgery. The centre is fully air conditioned and fitted with ultraviolet lights for effective disinfection. It has all advanced instruments required for safe and successful surgery to take our healthcare facility to next level.

Zoo Laboratory

To strengthen the diagnostic and research work on zoo animal, the Zoo Laboratory is being developed to carry out microbiological, molecular, reproductive diagnostic test needed for zoo animals' health care, physio-chemical and microbiology examination of water sources providing water to visitors and animals of Nandankanan. The zoo laboratory is being established with the above objective with an expenditure of Rs 60 lakhs.

Modular PM House & Incinerator Complex

Modular PM House has been developed over an area of 1237 sq. ft with vitrified floor and will have the following facilities. Pathologist chamber (14 × 20 ft) with wardrobes containing personal protective clothing, attached toilets, wash sink, sit outs for small discussion of pathologist and his team. Necropsy Hall (20 × 20 ft) with independent wide entry and exit gates for carrying the trolley with carcass, wide dissection area for the large animals, modern stainless steel mobile hydraulic dissection table with overhead light for dissection/ viscera preparation. Morgue (Carcass holding area) cum staff preparation room (20 × 20ft) with Wash (Decontamination) sink for washing of instruments after post-mortem, big size Instrument rack for keeping all post-mortem instruments, two body mortuary refrigerator, two number of wheeled trolleys for carrying carcass and weighing machine (1000kg capacity). The facility is being developed with an estimated cost of Rs. 30,43,600/-.

Carnivore Quarantine Ward

The new quarantine facility is being developed to house new animal on arrival in western side of zoo (near the back gate) away from the zoo animal enclosures to prevent any cross infection. Presently the quarantine facility for carnivores is being developed over an area of 1034 sqm and having provision of 4 kraals (15mX10mX4.5m), 8 retiring cells (3.25mX3mX3m) and 4 sliding squeeze cages along with 02 keeper corridors (23mX2.5mX3m) to house the large carnivores. This facility is being developed with an amount of Rs. 1,08,69,200/-. Other sections for giving quarantine facility to herbivores, birds and reptiles will be added in future.

Indian Fox Enclosure

New display area of Indian fox enclosure area was constructed on an area of 350 sq mt. in the year 2021-22. The total cost of construction is Rs 13.00 lakhs. The fox enclosure is now having glass fronted open top display area, three feeding cells with old display area converted as back kraal. The fox display is well planted with beautiful landscaping which will enhance animal welfare and beauty of the enclosure for successful breeding and display of the animals.

19. Education and Awareness programmes during the year:

DATE	PROGRAMME/ EVENT	NO. OF PARTI CIPANTS
05.04.2022	Orientation Programme of trainees from Self Defense Training, from Utkal Karate School, Bhubaneswar	122
20.04.2022	Visit Programme of officials of Nagaland Forest Department, Nagaland	19
21.04.2022	Induction Training Programme of FROs trainees from CASFOS, Coimbatore	36
05.05.2022	Field Training of 4 th Year B.Sc (Forestry) students from OUAT, Bhubaneswar (Batch-I)	47
12.05.2022	Study Tour of M.Sc (Forestry) students from OUAT, Bhubaneswar	26
26.05.2022	Field Training of 4 th Year B.Sc (Forestry) students from OUAT, Bhubaneswar (Batch-II)	45
28.05.2022	Induction Training Programme of FROs trainees from CASFOS, Burnihat	35
04.06.2022	Orientation Programme of +2 Intermediate students from KMBB, Cuttack	141
23.06.2022	Orientation Programme of +2 Intermediate students from KMBB, Cuttack	84
16.07. 2022 & 17.07.2022	Two days training programme for staffs of Kanan Pendari Zoological Garden, Bilaspur	22
21.07.2022 & 22.07.2022	Two days training programme for staffs of Kanan Pendari Zoological Garden, Bilaspur	22
29.07.2022	Celebration of International Tiger Day	>300
09.08.2022	Orientation Programme of students from National Environment Youth Parliament, New Delhi	06
09.08.2022	Orientation of CSS officers trainees from Gopabandhu Academy of Administration	30
10.08.2022	Celebration of World Lion Day	>200
12.08.2022	Celebration of World Elephant Day	>300
21.08.2022	Visit Programme of M.Sc Zoology students from Utkal University, Bhubaneswar	10
07. 9. 2022 & 08.9.2022	Exposure visit of officials from Zoo Authority of Karnataka	06
10.09.2022	Visit programme of Zoo Directors from different zoos of India	>50
17.09.2022 to 23.09.2022	Cheetah Awareness Week	>500
17.09.2023	Orientation Programme of B.V.Sc & AH (1 ST Year) students from OUAT, Bhubaneswar	50
22.09.2022	Orientation of IAS probationers, Odisha Cadre	06
22.09.2022	Celebration of World Rhino Day	>100
23.09.2023	Orientation Programme of B.V.Sc & AH (1 ST Year) students from OUAT, Bhubaneswar	50

02.10.2022 to 08.10.2022	Celebration of 68 th Wildlife Week	>500
11.10.2022	Orientation Programme of B.Sc (Forestry) students from OUAT, Bhubaneswar	50
12.10.2022	Orientation Programme of B.Sc (Forestry) students from OUAT, Bhubaneswar	44
13.10.2022	Visit programme of officers trainees of Special Foundation Course from Gopabandhu Academy of Administration, Bhubaneswar	29
19.10.2022	Visit programme of FROs trainees HPFA, Sundarnagar	44
08.11.2022	Visit programme of IRTS probationers from Gopabandhu Academy of Administration, Bhubaneswar	07
09.11.2022	Training programme of IFS officers from XIMB, Bhubaneswar	15
11.11.2022	Visit programme of FROs trainees from Gujarat Forest Rangers College, Rajpipla	44
12.11.2022	Orientation programme of students from KIIT Animal & Environmental Welfare Society, Bhubaneswar	60
12.11.2022	Visit programme of students from Saint Xavier High School, Cuttack	292
15.11.2022	Visit programme of students from different Government Schools of Odisha organized by "SURAVI"	1000
15.11.2022	Visit programme of B.Sc Zoology students from ISPAT College, Rourkela	31
19.11.2002	Field visit of Integrated M.Sc students from NISER, Bhubaneswar	60
22.11.2022	Visit programme of students from Burdwan Holy Child School, Burdwan, West Bengal	100
26.11.2022	Visit programme of FROs trainees from Telangana State Forest Academy, Dulapally	35
26.11.2022	Field visit of students from B.Sc Zoology from Ravenshaw University	15
27.11.2022	Visit programme of IFS probationers from North Eastern State	32
27.11.2022	Visit programme of students from IHSE, SOA, Bhubaneswar	300
27.11.2022	Visit programme of Kendu Leaf seasonal staff, Odisha	100
30.11.2022	Field visit of B.Sc Nursing students from Hi-Tech Medical College, Bhubaneswar	52
20.12.2022	Field visit of FROs trainees from Tamil Nadu Forest Academy, Coimbatore	47
07.01.2023	Visit programme of FROs trainees from Odisha Forest Rangers College, Angul	32
12.01.2023	Asian Waterfowl Bird Census 2023	50
31.01.2023	Orientation Programme of IAS probationers on Odisha Darshan Tour	20
01.02.2023	Visit Programme of CSS officers from Gopabandhu Academy of Administration, Bhubaneswar	17
02.02.2023	Celebration of World Wetland Day	>200
05.02.2023	Field visit of B.Sc Zoology students from North Orissa University, Baripada	15
11.02.2023	Education tour programme of school students from A.G. Mission School, Nayagarh	84
16.02.2023	Tour programme of Foresters trainees from Forest Training Institute, Wimberlygunj, South Andaman	20
16.02.2023 to 20.02.2023	Five days training on Wild Animal feeding, Restraint, Tranquilization and Management of 5 th Year students from B.V.Sc & AH from College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar	45
17.02.2023 to 20.03.2023	Great Backyard Bird Count 2023	>50
18.02.2023	Celebration of World Pangolin Day 2023	>200
22.02.2023	Study tour of B.Sc Zoology students from Paramananda College, Bolgarh	18
03.03.2023	Celebration of World Wildlife Day 2023	>200
05.03.2023	Field visit of staff of Green campus from CUTM, Bhubaneswar	25

08.03.2023 to 12.03.2023	Five days training on Wild Animal feeding, Restraint, Tranquilization and Management of 5 th Year students from B.V.Sc & AH from College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar	45
14.03.2023	Tour visit of SFS officers trainees from CASFOS, Coimbatore	55
17.03.2023	Educational tour programme of school students from SAI International School, Munduli Campus, Cuttack	>300

20. Important Events and happenings:

Release of Special Cover & Post Card on Tigers of Nandankanan

To give recognition to conservation efforts of Nandankanan, special cover and printed post card on Tigers of Nandankanan (Normal coloured, white & melanistic tigers) were released by the Chief Post Master General, Odisha Circle on the occasion of International Tiger Day 2022.

Nandankanan Bird Walk

Nandankanan Bird Walk started with an objective of conducting to facilitate opportunity to the volunteers for exploring birds of Nandankanan on every Sunday morning.

Internship Programme at Nandankanan

Nandankanan started internship programme for graduate and post graduate students with an objective to start basic research and carry out project/ dissertation in their course curriculum to help in career development and higher studies.

Zoo Keepers Training Programme

Nandankanan organized two days training programme for 44 animal keepers of Kanan Pendari Zoological Garden, Bilaspur in two batches, each batch consisting 22 participants from 16-17 July, 2022 and 21-22 July, 2022 to share hands on experience of best management practices of Nandankanan Zoological Park.

Cheetah Awareness Week

Cheetah Awareness Week was celebrated at Nandankanan Zoological Park from 17th to 23rd September, 2022. The celebration was observed with a mass awareness programme amongst the visitors with a message for Cheetah conservation. On this occasion online quiz and painting competition on Cheetah conservation were conducted throughout the week on Nandankanan website i.e. www.nandankanan.org. More than 300 participants were participated in this programme. All the participants will be given e-certificate for their participation. On the spot quiz for visitors were conducted in front of interpretation centre where prizes were distributed to a winner which is highly appreciated by the participants. The fact and knowledge-based signage and selfie stand of the cheetah were installed in front of interpretation centre to aware the visitors about the Cheetah. The visitors put their message on Cheetah conservation in the signature campaign

board. Keepers talk programme was also conducted with special focus to Cheetah. Short movie on Cheetah conservation and re-introduction programme showed inside mini auditorium of Interpretation centre every day. The Cheetah awareness messages, pictures, videos etc. were shared to print and electronic media and social media platform for wider circulation.

Adopt-an-Animal Programme

More than 150 individuals and organizations like Indian Oil Corporation Limited, Bhubaneswar and MGM, Minerals Limited have adopted animals of Nandankanan pledging an amount of Rs 9, 31, 700/- during the financial year 2022-23.

21. Seasonal special arrangements for upkeep of animals:

The following summer, monsoon and winter care arrangements are made at Nandankanan Zoological Park during the year.

SUMMER CARE MANAGEMENT

1. Carnivore enclosures:

- All the water pools available in the exhibit and back kraals are repaired and water to be kept filled up alternatively.
- Water in the pools is kept in running condition during peak hours of the day.
- The shutter of feeding cell is kept open throughout the day to allow the animal rest inside the feeding cell if it desires.
- Water from all water moats is pumped out, followed by cleaning, disinfection and refilling (wherever possible).
- Provision of shed above the water pools to prevent water from heating.
- Feeding cells are made straw thatched to keep the cells cool.
- Sprinklers are made available and operational in all carnivore enclosures including Jackal, hyena, wolf and wild dog.

2. Herbivore enclosures: (Sambar, Manipuri, Barking, Swamp deer and Giraffe)

- Provision of sprinklers is made operational.
- Wallowing tank of sambar enclosure is cleaned and provision of running water facility is made in wallowing tank.
- Water accumulation is not allowed inside the enclosure.
- Water in the pools is kept in running condition during peak hours of the day.
- Left over stems of fodders accumulated in the moat area is cleaned.

- Top soil is removed and enclosure is cleaned.
- Sprinklers are made available and operational in all enclosures including giraffe.

3. Herbivore Safari:

- Sufficient number of sprinklers are made available and operational at different strategic locations inside herbivore safari
- Proper drainage of both large water pools are made so that silt does not accumulate on the floor. The water pools are cleaned and disinfected weekly.
- All the water troughs available are repaired, lime washed and covered with bamboo tati overhead to avoid heating.
- Artificial sheds made up of bamboo tati are provided at different locations to allow the deer take rest underneath.
-

4. Primate enclosures:

- Provision of air coolers are made to Chimpanzee and other exotic primates wherever necessary.
- Benachera mat are hanged at the windows of chimpanzee feeding cell.
- Roof thatching with provision of cantilever are made at chimpanzee enclosure to provide shade on the feeding cell wall.
- Exhibit area of Assamese macaque, Capuchin, Tamarin and Squirrel monkey enclosures are covered with bamboo tati.
- Chimpanzees are not released to the exhibit area in case the temperature rises to more than 40°C.
- Provision of shed is ensured in the exhibit areas of all primate enclosures.

5. Reptile park:

- In crocodile and water turtle enclosures water in the pool should be in running condition during peak hours of the day.
- Sheds are provided at all crocodile enclosures, turtle enclosures so that water does not get heated.
- Snake enclosures are covered with bamboo tati.
- At Iguana and yellow anaconda provision of bamboo tati on roof top is ensured.

6. Bird enclosures:

- Provision of side wall curtains are made during day time (10 AM to 4 PM) to protect them from hot blowing wind.
- Water is sprinkled on side wall curtains, floors and roof tops within 8 AM every day.
- The grass lawn passage situated between bird enclosures (Enclosure 1 to 10) is flooded with water before 8AM every day. Also this lawn passage is covered with shed so that direct sun light will not fall on enclosures like 3 and 5.
- Cinereous Vulture:- Water tank kept filled up with water. Water is sprayed over the bird and inside the enclosure in case the temperature goes beyond 40°C.
- Silver pheasant/ Golden pheasant enclosure/ring neck pheasant/lorikeet enclosures:- gunny bags/ bena chera are hanged up to half of the chain link mesh and water should be sprinkled over it 2-3 times a day.
- Emu and ostrich are given bath by spraying water on them during early part of the day (i.e. before 10AM).
- Larger earthen water pots are provided in all the bird enclosures to keep the drinking water cool.

7. Bear Enclosures:

- All the bear enclosures (enclosure 15 and 16) are provided with two sheds each thatched with straw or bamboo. Bears are kept confined in the feeding cell during 10AM to 4PM in days temp goes beyond 40°C.
- Moats are cleaned, disinfected and refilled with fresh water. Water moats are topped with fresh water daily.
- Back-kraals of bear safari are provided with bamboo tati on the chain-link mesh roof top.

8. General considerations:

- All enclosures are having wall hanging thermometers to record maximum/ minimum temperature of the day
- Staff of animal section to remain vigilant during peak hours of the day and inform Zoo Hospital in case any behavioural change is noticed. One special squad is constituted to remain vigilant during peak hot hours of the day.
- Anti-stress medicines, multivitamins and electrolytes are supplemented in feed/ drinking water as and when required.

MONSOON CARE MANAGEMENT

1. Lime spreading in all herbivore enclosures is done at monthly interval.
2. Leaking roof tops of different animal enclosures especially bird and reptile are properly sealed to avoid soiling of litter/substrate which can be source of infection.
3. Old and rough drinking water pots are replaced with new and clean one to facilitate clean water supply.
4. Water pools of the carnivore enclosures are lime washed every month.
5. To protect the animals from water borne infections, stagnant water of all water moats are evacuated, cleaned thoroughly and treated with lime.
6. Pruning of bushes and weeds inside and surrounding the carnivore enclosure are done every fortnight to protect the animals from predators and ecto-parasite infection. To avoid tick infestation, acaricide is sprayed after every deweeding.
7. To check waterborne diseases, sensitive animals like Chimpanzee, Assamese macaque, marmoset, and other delicate small mammals and birds are provided with clean and potable drinking water every day.
8. Roofing over the feeding troughs is ensured to prevent the food item getting wet.
9. Cleanliness and hygiene measures at the slaughter house and feed receiving centre is ensured with sincerity. Floor washing with bleaching powder and antiseptic foot bath is ensured at feed distribution centre and slaughter house.
10. Vegetables, Fruits and greens are washed with 0.1% potassium permanganate solution prior to processing at feed distribution centre.
11. Feed transportation containers, tins and carry bags are properly cleaned and washed daily.
12. P.P. solution/lime foot bath at the entrance of all herbivore, carnivore and bird enclosures are strictly maintained.
13. Dumping pit of scat and excreta from carnivore enclosure are earth covered. Bone pits are cleaned every month.

WINTER CARE MANAGEMENT

1. Birds housed in Enclosure no 1 to 13, 81 and inside Children Park:

- Drapes of agro net or clean gunny bag are hanged around the wire mesh from outside during night time.
- Lighting with 40W electric bulbs protected with a metallic frame in each enclosure are provided and switch made on during night time for warmth.
- As breeding season for most birds commensurate with the end of winter, provision of sufficient nest boxes and other nesting facilities are made in each enclosure according to requirement of the species after meticulous observation.
-

2. Chimpanzee and other exotic primates:

- The windows of feeding cell are covered with drapes during night time at a distance so that it can't be pulled out or damaged. The existing window shutters are used during the night time.
- Medicines to improve immunity are supplemented in the diet.
- Provision of room heaters are kept in readiness for their use in extreme cold.
- Plywood sheet are spread on the floor of the night shelter of chimpanzee to keep the floor warm.

3. Snakes:

- Clean fresh straw wrapped in gunny bag are provided inside each enclosure
- A 40W electric bulb are provided in the den to provide warmth
- Provision UV-B bulbs are made available for reptile use.
- Provision direct sunlight into the enclosure are made by pruning obstructing tree branches.

4. Crocodiles:

- To ensure day time basking overhead branches of shady trees are pruned and fresh sand bed are spread in the basking zone. In extreme cold thatched sheds with underneath straws are provided in each enclosure to help crocs taking shelter in night.

5. Tiger and other carnivore enclosures:

- Stagnant/ accumulated rain water in all water moats may act as source of gastrointestinal infection which is pumped out. Silt accumulated inside moat is removed and the moat is treated with lime and allowed to keep dry.
- The top soil of tiger and lion enclosure/ back kraals (frequently used areas) are removed and replaced with fresh sand after sprinkling of lime.
- Lime washing of walls of feeding cells is done in every winter.
- The water pools inside the enclosure/ back-kraals are inspected and repaired wherever required
-

6. Herbivore enclosures:

- All lake side herbivore enclosures are sprinkled with lime. Stagnant water and mud in enclosures are cleaned and replaced with fresh soil immediately.

- Top soil removal in all herbivore enclosure should start during winter so that it can be completed by arrival of hot and humid climate

7. **General consideration-**

- Annual lime washing of all wall structures of feeding cells, exhibit area, back-kraals and painting of chain-link mesh, squeeze/ transportation cages, angles, iron structures are made during winter.

Winter care arrangement for captive animals at Nandankanan Zoological Park:

Birds housed in Enclosure no 1 to 13, 81 and inside Children Park:

- Drapes of agro net or clean gunny bag hanged around the wire mesh from outside during night time.
- Lighting with 40W electric bulbs protected with a metallic frame in each enclosure provided during night time for warmth.

1. Chimpanzee:

- The windows are covered with drapes during night time at a distance so that it can't be pulled out or damaged. The existing window shutters are used during the night time..
- Medicines to improve immunity are supplemented in the diet.
- Provision of room heater may be kept in readiness for use in extreme cold.
- Straws are spread on the floor of the night shelter of chimpanzee in night hours.

2. Snakes:

- Clean fresh straw are provided inside the den of each enclosure during the night time.
- 40W electric bulbs are provided in the den to provide warmth.
- Direct sunlight provision into the enclosure is made for basking.

3. Crocodiles:

- To ensure day time basking overhead branches of shady trees are pruned and fresh sand bed are spread in the basking zone. In extreme cold thatched sheds with underneath straws are provided in each enclosure to help crocs taking shelter in night.

4. Stagnant/ accumulated rain water in all wet moated enclosure is pumped out. Silt accumulated inside moat is removed and the moat be treated with lime and allowed to keep dry.

5. The top soil of tiger and lion enclosure back kraals are removed and replaced with fresh sand after sprinkling of lime.
6. All lake side herbivore enclosures are sprinkled with lime. Stagnant water and mud in enclosures are cleaned and replaced with fresh soil.

22. Research Work carried out and publications:

Displaying its long-term commitment to research, Nandankanan Biological Park supported a number of research projects to assess biodiversity conservation, wildlife management, animal health issues and management of captive animals. To ensure optimal outcomes collaboration with the number of organization was given priority. The research teams includes JRFs, Research Scholars, in house staff/officer, and other collaborative work with Orissa Veterinary College, zoo vets, collaborating scientists and students of graduate, masters and PhD levels. Funding for research is provided by CZA. The research findings would further increase our expertise in the management of captive animals. Some of the studies are published in national and international journals which are mentioned bellow.

Research papers

1. Panda, B. P., Purohit, S., Parida, S. P., Dash, A. K., Mohapatra, R. K., and Pradhan, A. (2022). Noise pollution effect on composition of avian structure in different urban gradients. *Materials Today: Proceedings*.
2. Dash, M., Sahu, S.K., Gupta, S.K., Sahoo, N. and Mohapatra, D (2022). Trypanosoma evansi infection in a captive Indian Wolf *Canis lupus pallipes* – molecular diagnosis and therapy. *Journal of Threatened Taxa* 14(1): 20494–20499

Books

1. Mohapatra, R.K., Sahu, S. K., Joshi, A., Vanjari, C. D., Bhandari, B., Thakur, M., Perera, P., Mendis, A., Aditya, V., Sharma, G., Katdare, B., Chaudhuri, A., Mahapatra, M., Maharana, S., Kumar, S. and Nair, M.V.N. (2022) Field guide for rehabilitation of Indian pangolin. Second Edition. Nandankanan Biological Park, Bhubaneswar and Central Zoo Authority, New Delhi. pp: 1-41
2. Samal SK, Das P, Pradhan R, Behera HK, Jena S, Mohapatra RK, Panda MK, Kumar S, Nair MV. (2022). Sunday Bird Walks: A citizen science initiative in Nandankanan. Nandankanan Biological Park, Forest and Environment Department, Government of Odisha. Pp:1-88

23. Conservation Breeding Programme of the Zoo:

Pangolin Conservation Breeding Programme

Pangolins are ecologically important species as they help in regulating ant and termite populations and thereby control disease in forest trees. They are considered as habitat engineers as they dig soil to live and feed helping soil aeration and mineral fixation. The abandoned burrows act as shelter for many fossorial animals.

Pangolins are the most illegally traded mammals of the world and their population is increasingly under threat throughout the range due to the domestic and international demand for live pangolins and their skin, scales and meat. Considering the above, Nandankanan Zoological Park, Odisha, has been identified by Central Zoo Authority, New Delhi (CZA) as the coordinating zoo for conservation breeding of Indian pangolins (*Manis crassicaudata*) based on the past husbandry and breeding records of the species in the zoo. Indian pangolin conservation breeding programme at Nandankanan was initiated in 2008 with financial assistance from CZA and started with 6 founder individuals.

Nandankanan Zoological Park has the only Conservation Breeding Centre for Indian pangolins in the world. Painstaking monitoring by the Centre researchers through infrared sensitive CCTV cameras has succeeded in unfolding many aspects of the hitherto secret life of the Indian pangolin. Research at the centre has helped to develop proper housing, husbandry and conservation breeding protocols for this endangered species. The centre has successfully bred 16 Indian pangolins in captivity. Presently there are 25 (11M: 14F) pangolins. Besides, studies in the centre have helped to understand the behaviour, reproductive biology, haematology, husbandry and healthcare practices including identification of parasites and bacteria associated with Indian pangolins. Apart from contributing on many lesser-known aspects of the of Indian pangolins through published research outputs, the Centre has also contributed significantly in the assessment process for inclusion of the species under the 'Endangered' category in the Red Data Book of IUCN in the year 2014 and Appendix I of CITES in the year 2017. In addition, the centre has also been able to develop protocol for successful rearing of abandoned young and recorded the maximum longevity for Indian pangolin in the world (22 years 11 months 9 days).

Nandankanan Zoological Park has been offering technical support to various organizations such as the State Forest Department of Odisha and other states as well, to deal with conservation and rehabilitation of this endangered species. Initiatives have been taken for collaboration with other pangolin conservation facilities of South East Asia for mutual sharing of best practices in husbandry and management including development of artificial diet, health care, breeding, and release protocols.

Pangolins are very difficult to keep and breed in captivity due to their unique biology and specialized behaviour. Over the past 150 years, more than 100 zoos or organizations have attempted to maintain pangolins. While most captive pangolins died within six months, some were held for two to three years, while in very few cases, they lived for 12-19 years. Due to the unique reproductive biology of the Indian pangolin (long gestation [10 months], small litter size [1 offspring at a time], long inter-birth interval [2.5 years], long generation length [8-9 years]), and paucity of zoo born Indian pangolins, no participating zoo for the conservation breeding programme and no Indian and/or foreign zoo to contribute to the founders, seized/ rescued pangolins are important to establish a sustainable founder population. Studies on Sunda pangolin (*Manis javanica*) found that there is a need of minimum 30 founder individuals to start a conservation breeding programme.

Nandankanan Zoological Park is among the few zoos of the world that is successfully keeping and breeding these unique animals in captivity. With our research at Pangolin Conservation Breeding Centre (PCBC), we have standardized housing and husbandry protocols of Indian pangolins and able to successfully breed them in captivity to get F1 generation, which is unique for the species in the world. It is noteworthy that, highest longevity for the species had been recorded in the Centre. A female Indian pangolin [Microchip ID0006A2AA6F] received on 16.07.2000 had lived 22 years 11 months 9 months till its death on 25.06.2023. The surviving F1 Indian pangolins of PCBC are now being paired up for breeding to get F2 generation in near future.

Vulture Conservation Breeding Centre, Nandankanan

Vulture Conservation Breeding Centre has been constructed in an off-exhibit area of Nandankanan Biological Park, Bhubaneswar during the year 2011-12 in an area of 0.3 acres surrounded by seven acres of undisturbed forested land with financial assistance from Central Zoo Authority, New Delhi. The centre was established with objectives of develop a protocol for captive management and breeding of long - billed vultures for reintroduction and release in to wild. The founder populations were twelve numbers of long- billed vultures procured from Gandhi Zoological Park, Gwalior on 26.11.2018. All the vultures were marked with leg bands for individual identity. The centre presently has one colony aviary (100'X40'X20'), two nursery aviaries (10'X12'X8'). A laboratory complex with observatory room for CCTV monitoring, laboratory for analysis of biological samples, incubation room and biologist chamber is available. The activity patterns of vultures are being monitored through two fixed angle and one PTZ camera with infrared facility. Studies are ongoing to understand this endangered species and standardize their breeding protocol. Further the zoo is keenly exploring for options of acquisition of vultures from other Vulture conservation breeding centres and from other zoos.

Species Recovery of Gharial in the river Mahanadi

Odisha is the only state of India with all three species of crocodylian; Gharial (*Gavialis gangeticus*), Mugger (*Crocodylus palustris*) and Saltwater crocodile (*Crocodylus porosus*). Mahanadi is one of the major rivers of India, and the southernmost distribution limit of the gharial. Rehabilitate gharials in the river Mahanadi following strict post-release monitoring protocols, Forest Department of Odisha initiated a project “Species recovery of Gharial in river Mahanadi” in 2019. Under the project, a total of 19 gharials captive bred gharials of Nandankanan Zoological Park consisting of 7 males and 12 female gharials were released in different batches in the river measuring 1.5m to 3.85m in length and aged between 5 to 16 years. Before the release, a survey was conducted to find out suitable release site(s) by evaluating river geo physiography and anthropogenic activities.

All released Gharials were tagged with transmitters; 13 with radio transmitters and 6 with satellite transmitters for post-release monitoring. Three post-graduate research scholars were engaged for post-release monitoring. The transmitters helped the technical team to track gharials individually their daily activity, habitat use, seasonal dispersal pattern, breeding biology and threats. Conservation measures also includes implementation of a 10km ‘NO FISHING ZONE’ in Satkosia gorge, involvement of 14 forest divisions on both sides of the river Mahanadi for implementation of protection measures, community participation and awareness, compensation for damaged fishing net and a reward of Rs. 1000 for a live gharial if caught in the net.

One of the adult female gharials moved downstream about 120km and passed through a nylon fishing net and got its jaws wrapped up in torn net. She was rescued successfully with the cooperation of the rescue team from Nandankanan, local forest staff and fishermen using cast net and encirclement net. At present 5 adult individuals are being tracked. The other 8 gharials have reported dead and for remaining 6 numbers of gharials location could not be ascertained due to loss of signal. Out of the 8 recorded deaths, 2 died due to blasting, 4 by entanglement in nylon nets, 1 killed by mugger, and 1 due to *Clostridium haemolyticum* infectious origin, the cause of which under investigation, indicating major threats to survival as deleterious fishing activities, disturbed habitat, perceived interspecific conflict between gharial and mugger in the habitat.

Due to stringent protection efforts, research studies, implementation of the ‘NO FISHING ZONE’ and community awareness to reduce disturbances may have contributed to the natural breeding of gharials after a gap of 40 long years of Satkosia gorge sanctuary and hatching of 28 hatchlings in May, 2021 and 32 hatchlings in May, 2022, and 35 hatchlings in May, 2023. Provision of reward resulted in 7 numbers of gharial hatchlings/yearlings caught in fishing net were handed over by local fisherman to local field staff/technical team. These hatchlings/yearlings were brought to Nandankanan Zoological Park for post-rescue care and will be subsequently release back in the river near their mother after the flood season. The tenure of first phase of the project completed on 30th June 2023. The 2nd phase of the project is planned to be implemented with the intensive awareness, protection along with release of adult size gharials by tagging both VHF and GPS.

The implementation of the Species recovery of Gharial in river Mahanadi project helped in identifying the factors affecting survival of gharial in the river Mahanadi and improved the understanding on their ecology and behaviour which will help in shaping implementation of future conservation measures to save this species in its southernmost habitat.

24. Animal acquisition / transfer / exchange during the year:

Serial No	Species Received	Sex (M:F:U)	Zoo /Farm Name	Date of arrival
1.	Black swan Slender tailed meerkat	2:3:0 2:2:0	Sri Chamarajendra Zoological Garden, Mysore	24.12.2022
Serial No	Species Given	Sex (M: F: U)	Zoo /Farm Name	Date of Disposal
1.	Asian openbill stork Cattle egret Little egret Grey pelican Silver pheasant	1:1:0 1:1:0 1:1:0 1:1:0 1:2:0	Sri Chamarajendra Zoological Garden, Mysore	16.12.2022

25. Rescue and Rehabilitation of wild animals carried out by the Zoo:

Sl.No.	Date of Received at Nandankanan	Species with number of animals rescued with their sex (M: F:U:T)	Received from	Date of Submission of Report to the CWLW / CZA	Action taken	
					Date and Place of rehabilitation in their habitat	Reasons for housing in the zoo, if not released in their habitat
Mammals (Sch I & II)						
1.	22.03.2023	Ratel	DFO, Karanjia Division	Memo No. 1298 dated 22.03.2023		Under hand rearing not suitable to release due to prolonged human imprinting
Birds (Sch I & II)						
2.	27.06.2023	Hill myna	DFO, Puri Wildlife Division	Memo No. 4187 dated 27.06.2022		Seized specimen received in juvenile stage, non-suitable for release due to hand rearing and prolonged human imprinting
3.	07.12.2022	Himalayan Griffon	DFO, Jharsuguda Forest Division	Memo No. 6559 dated 07.12.2022		Received in sick condition, prolonged human imprinting during treatment
4.	17.02.2023	Himalayan Griffon	DFO, Sundargarh Forest Division	Memo No. 872 dated 17.02.2023		Received in sick condition, prolonged human imprinting during treatment
5.	09.03.2023	Himalayan Griffon	Baliguda Forest Division, Kandhamal	Memo No. 1464 dated 06.03.2023		Received in sick condition, prolonged human imprinting during treatment

26. Annual Inventory of animals:

ANNUAL ANIMAL INVENTORY (FROM 1ST APRIL-22 to 31ST MAR -23)

SCH-I, II, III & IV (Wildlife Protection Act)				During the Month																Stock as on Dt- 31.03.2023				
S. N.	Species	Scientific name	SCH	Stock as on 01 .04.2022				Births			Acquisitions			Disposals			Deaths			M	F	U	T	
				M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U					
SCH-I , SCH-II BIRDS			-																					
1	MYNAH HILL	<i>Gracula religiosa</i>	I	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
2	A. PEA FOWL, INDIAN	<i>Pavo cristatus</i>	I	3	3	12	18	0	0	5	0	0	0	0	0	0	0	0	0	0	3	3	17	23
	B. PEA FOWL, INDIAN WHITE	<i>Pavo cristatus</i>	I	2	3	1	6	0	0	0	0	0	0	0	0	0	0	2	0	2	1	1	4	
3	SPOONBILL, WHITE EURASIAN	<i>Platalea leucorodia</i>	I	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4	VULTURE CINEREOUS	<i>Aegypius monachus</i>	I	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
5	VULTURE, LONG BILLED	<i>Gyps indicus</i>	I	1	2	8	11	0	0	0	0	0	0	0	0	0	0	0	0	1	2	8	11	
6	VULTURE, WHITE BACKED	<i>Gyps bengalensis</i>	I	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
7	KITE, BRAMHINY	<i>Haliastur indus</i>	I	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
8	KITE, BLACK	<i>Milvus migrans</i>	I	3	3	4	10	0	0	1	0	0	0	0	0	0	0	0	0	3	3	5	11	
9	SHIKRA	<i>Accipiter badius</i>	I	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
10	HORNBILL GREY	<i>Ocyrceros birostris</i>	I	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
SCH-I & II Birds - TOTAL				11	12	31	54	0	0	6	0	0	0	0	0	0	0	3	0	11	9	37	57	
SCH-I , SCH-II MAMMALS																								
1	ANTELOPE, FOUR HORNED/ CHOWSINGHA	<i>Tetraceros quadricomis</i>	I	1	1	0	2	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	3	3
2	BEAR, HIMALAYAN BLACK	<i>Selenarctos thibetanus</i>	II	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5	5	
3	BEAR, SLOTH	<i>Melursus ursinus</i>	I	3	6	1	10	0	0	2	0	0	0	0	0	0	0	0	3	6	3	12	12	
4	BLACKBUCK	<i>Antilope cervicapra</i>	I	18	24	19	61	0	0	26	0	0	0	0	0	0	2	1	2	16	23	43	82	
5	CAT, JUNGLE	<i>Felis chaus</i>	II	3	2	4	9	0	0	0	0	0	0	0	0	0	0	0	3	2	4	9	9	

6	CIVET, COMMON PALM / CAT TODDY	<i>Paradoxurus hermaphroditus</i>	II	3	3	9	15	0	0	6	0	0	0	0	0	0	0	0	3	3	15	21		
7	CIVET, SMALL INDIAN	<i>Viverricula indica</i>	II	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1		
8	DEER, BROW ANTLERED / SANGAI	<i>Cervus eldi</i>	I	6	5	9	20	0	0	3	0	0	0	0	0	0	3	1	0	8	11	0	19	
9	DEER, MOUSE	<i>Tragulus memmina</i>	I	6	3	17	26	0	0	8	0	0	0	0	0	0	1	3	0	12	9	9	30	
10	DEER, SWAMP / BRASINGHA	<i>Cervus duvauceli</i>	I	5	4	3	12	0	0	2	0	0	0	0	0	0	1	0	0	4	4	5	13	
11	ELEPHANT, INDIAN	<i>Elephas maximus</i>	I	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	2
12	GAUR	<i>Bos Gaurus</i>	I	3	4	0	7	0	1	0	0	0	0	0	0	0	0	0	2	0	3	3	0	6
13	JACKAL	<i>Canis aureus</i>	II	3	7	8	18	0	0	8	0	0	0	0	0	0	0	0	0	3	7	16	26	
14	LEOPARD / PANTHER	<i>Panthera pardus</i>	I	2	3	0	5	0	0	0	0	0	0	0	0	0	1	0	0	1	3	0	4	
15	LION, ASIATIC	<i>Pantera leo persica</i>	I	4	5	0	9	1	1	5	0	0	0	0	0	0	0	1	0	9	6	0	15	
16	MACAQUE, BONNET	<i>Macaca radiata</i>	II	1	6	0	7	1	0	0	0	0	0	0	0	0	1	0	0	1	6	0	7	
17	MACAQUE, RHESUS	<i>Macaca mulatta</i>	II	4	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	8	
18	PANGOLIN, INDIAN	<i>Manis crassicaudata</i>	I	4	5	1	10	0	0	1	0	0	0	0	0	0	0	0	0	4	5	2	11	
19	RATEL	<i>Mellivora capensis</i>	I	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	
20	SQUIRREL, GIANT	<i>Ratufa indica</i>	II	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
21	MANGOSE, COMMON	<i>Herpestes edwardsi</i>	II	2	2	4	8	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	8	
22	A. TIGER, BENGAL	<i>Panthera tigris tigris</i>	I	11	7	0	18	0	0	6	0	0	0	1	1	0	1	1	0	9	5	6	20	
	B. TIGER, BENGAL (WHITE)	<i>Panthera tigris tigris</i>	I	2	5	0	7	0	0	0	0	0	0	0	0	0	0	1	0	2	4	0	6	
	C. TIGER, BENGAL (MELANISTIC)	<i>Panthera tigris tigris</i>	I	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	
23	WILD DOG, AISATIC	<i>Cuon alpinus</i>	II	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
24	MACAQUE, ASSAMESE	<i>Macaca assamensis</i>	II	2	3	3	8	0	0	2	0	0	0	0	0	0	0	0	0	2	3	5	10	
25	MACAQUE, STUMP	<i>Macaca arctoides</i>	II	3	3	2	8	0	0	1	0	0	0	0	0	0	0	0	0	3	3	3	9	

5	TAILED																						
2 6	WOLF, INDIAN GREY	<i>Canis lupus pallipes</i>	I	3	3	0	6	0	0	3	0	0	0	0	0	0	0	0	1	3	3	2	8
2 7	FOX, INDIAN	<i>Vulpes bengalensis</i>	II	2	3	6	11	0	0	0	0	0	0	0	0	0	1	0	0	1	3	6	10
SCH-I & II Mammals - TOTAL				100	117	86	303	2	2	74	0	0	0	1	1	0	1	11	3	106	124	12	354
SCH-I & SCH-II REPTILES			-	Stock as on 01 .04.2022				Births			Acquisition s			Disposals			Deaths			Stock as on Dt- 31.03.2023			
1	COBRA, KING	<i>Ophiophagus hannah</i>	II	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
2	COBRA, MONOCELLATE	<i>Naja naja kouthia</i>	II	1	1	1	3	0	0	9	0	0	0	0	0	0	0	0	0	1	1	10	12
3	COBRA, BINOCELLATE	<i>Naja naja</i>	II	1	1	0	2	0	0	4	0	0	0	0	0	0	0	0	0	1	1	4	6
4	CROCODILE, LONG SNOUTED / GHARIAL	<i>Gavialis gangeticus</i>	I	20	79	9	108	0	0	0	0	0	0	0	0	0	0	0	0	20	79	9	108
5	CROCODILE, MUGGER	<i>Crocodilus palustris</i>	I	4	6	22	32	0	0	0	0	0	0	0	0	0	0	0	0	4	6	22	32
6	CROCODILE, SALT WATER	<i>Crocodylus porosus</i>	I	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
7	MONITOR LIZARD, COMMON INDIAN	<i>Varanus bengalensis</i>	I	1	1	3	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	5
8	MONITOR LIZARD, WATER	<i>Varanus salvator</i>	I	1	1	1	3	0	0	4	0	0	0	0	0	0	0	0	0	1	1	5	7
9	PYTHON, BURMESE ROCK	<i>Python molurus bivivatus</i>	I	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
1 0	PYTHON, INDIAN ROCK	<i>Python molurus molurus</i>	I	2	2	1	5	0	0	0	0	0	0	0	0	0	0	0	0	2	2	1	5
1 1	PYTHON, RETICULATED	<i>Python reticulatus</i>	I	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
1 2	SNAKE, RAT	<i>Ptyas mucosus</i>	II	0	0	1	1	2	2	7	0	0	0	0	0	0	0	0	0	2	2	8	12
1 3	TURTLE, FRESH WATER / INDIAN FLAP -SHELL	<i>Lissemys punctata punctata</i>	I	28	36	0	64	0	0	0	0	0	0	0	0	0	0	0	0	28	36	0	64
1 4	TURTLE, GANGES SOFT SHELL	<i>Trionyx gangeticus</i>	I	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
1 5	VIPER, RUSSELL'S	<i>Vipera russelli</i>	II	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
1 6	CHAMELEON, INDIAN	<i>Chameleon zeylanicus</i>	II	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
1 7	TURTEL, INDIAN TENT	<i>Pangshura tentoria</i>	I	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3

SCH-I &II Reptiles - TOTAL			62	130	44	236	2	2	24	0	0	0	0	0	0	0	0	0	64	132	68	264
SCH-III, SCH-IV BIRDS			Stock as on 01 .04.2022				Births			Acquisitions			Disposals			Deaths			Stock as on Dt-31.03.2023			
1	CRANE SARUS	<i>Grus antigone</i>	IV	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
2	DOVE, EMERALD	<i>Chalcophaps indica</i>	IV	2	2	1	5	0	0	0	0	0	0	0	0	0	1	1	2	1	0	3
3	DOVE, SPOTTED	<i>Spilopelia chinensis</i>	IV	1	1	6	8	0	0	1	0	0	0	0	0	0	0	0	1	1	7	9
4	EGRET, CATTEL	<i>Bubulcus ibis</i>	IV	1	2	5	8	0	0	0	0	0	1	1	0	0	0	0	0	1	5	6
5	EGRET, LARGE	<i>Cosmerodius albus</i>	IV	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
6	EGRET, LITTLE	<i>Egretta garzetta</i>	IV	1	1	6	8	0	0	2	0	0	1	1	0	0	0	0	0	0	8	8
7	EGRET, MEDIAN	<i>Egretta intermedia</i>	IV	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
8	HERON, GREY	<i>Ardea cinerea</i>	IV	3	7	2	12	0	0	0	0	0	0	0	0	0	1	2	3	6	0	9
9	HERON, NIGHT	<i>Nycticorax nycticorax</i>	IV	33	36	40	109	0	0	2	0	0	0	0	0	0	0	0	33	36	42	111
10	IBIS, ORIENTAL WHITE	<i>Threskiornis melanocephalus</i>	IV	50	81	64	195	0	0	0	0	0	0	0	0	0	0	0	50	81	64	195
11	KOEL	<i>Eudynamis scolopacea</i>	IV	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
12	MUNIA, RED	<i>Estrilda amandava</i>	IV	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
13	MUNIA, BLACKHEADED	<i>Lonchura malacca</i>	IV	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
14	MUNIA, SPOTTED / NUTMEG MANNIKIN	<i>Lonchura punctulata</i>	IV	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
15	OWL, BARN	<i>Tyto alba</i>	IV	2	1	3	6	0	0	1	0	0	0	0	0	0	0	0	2	1	4	7
16	OWL, BROWN FISH	<i>Bubo zeylonensis</i>	IV	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
17	OWL, ORIENTAL SCOPS	<i>Otus sunia</i>	IV	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
18	PARAKEET, ALEXANDRINE	<i>Psittacula eupatria</i>	IV	8	7	0	15	0	0	3	0	0	0	0	0	1	0	0	7	7	3	17
19	PARAKEET, BLOSSOM HEADED	<i>Psittacula cyanocephala</i>	IV	1	1	0	2	0	0	3	0	0	0	0	0	0	0	0	1	1	3	5
20	PARAKEET, ROSE RING	<i>Psittacula krameri manillensis</i>	IV	7	15	0	22	0	0	0	0	0	0	0	0	0	0	0	7	15	0	22
21	PELICAN, GREY/SPOT BILLED	<i>Pelecanus philippensis</i>	IV	5	5	12	22	0	0	5	0	0	1	1	0	0	0	0	4	4	17	25
22	PELICAN, ROSY/WHITE	<i>Pelecanus onocrotalus</i>	IV	0	1	3	4	0	0	0	0	0	0	0	0	1	0	0	0	0	3	3

2 3	STORK, LESSER ADJUTANT	<i>Leptoptilos javanicus</i>	IV	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
2 4	STORK, PAINTED	<i>Mycteria leucocephala</i>	IV	6	6	20	32	0	0	8	0	0	0	0	0	0	0	0	0	6	6	28	40
2 5	STORK, OPEN BILLED	<i>Anastomus oscitans</i>	IV	2	2	6	10	0	0	4	0	0	0	1	1	0	0	0	1	1	1	9	11
2 6	RED JUNGLE FOWL	<i>Gallus gallus</i>	IV	3	2	3	8	0	0	0	0	0	0	0	0	1	0	0	2	2	3	7	
TOTAL SCH III & IV Birds				129	173	177	479	0	0	29	0	0	0	4	4	0	2	3	4	123	166	202	491
SCH-III , SCH-IV MAMMALS				Stock as on 01 .04.2022				Births			Acquisition s			Disposals			Deaths			Stock as on Dt- 31.03.2023			
1	DEER, BARKING- MUNTJAC (KAKKAR)	<i>Muntiacus muntjak</i>	III	22	44	8	74	0	0	0	0	0	0	0	0	0	0	4	0	22	40	8	70
2	DEER, HOG	<i>Axis porcinus</i>	III	23	23	7	53	0	0	15	0	0	0	0	0	1	3	2	22	20	20	62	
3	DEER, SAMBAR	<i>Cervus unicolor</i>	III	6	11	1	18	0	0	1	0	0	0	0	0	3	3	0	3	8	2	13	
4	A. DEER, SPOTTED/ CHITAL(ZOO)	<i>Axis axis</i>	III	361	395	24	780	0	0	5	0	0	0	0	0	1	0	0	360	395	29	784	
	B. DEER, SPOTTED/CHITAL(RBD)	<i>Axis axis</i>	III	337	194	0	531	2	19	0	0	0	0	0	0	5	3	0	353	210	0	563	
5	CHINKARA	<i>Gazella bennetti</i>	III	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
6	HARE, INDIAN	<i>Lepus nigricollis</i>	IV	1	1	2	4	0	0	0	0	0	0	0	0	0	0	0	1	1	2	4	
7	HYAENA, STRIPED	<i>Hyaena hyaena</i>	III	2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	2	4	0	6	
8	BAT, GIANT FRUIT	<i>Pteropus giganteus</i>	IV	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
9	NILGAI-BLUE BULL	<i>Boselaphus tragocamelus</i>	III	3	10	3	16	0	0	0	0	0	0	0	0	1	1	3	9	2	14		
1 0	PIG WILD/WILD BOAR	<i>Sus scrofa</i>	III	2	1	1	4	0	0	0	0	0	0	0	0	0	0	0	2	1	1	4	
1 1	PORCUPINE, INDIAN	<i>Hystrix indica</i>	IV	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	
TOTAL SCH-III , SCH-IV Mammals				759	684	47	1490	2	19	21	0	0	0	0	0	0	1	14	3	770	689	65	1524
SCH-III & SCH-IV REPTILES				Stock as on 01 .04.2022				Births			Acquisition s			Disposals			Deaths			Stock as on Dt- 31.03.2023			
1	BOA, COMMON SAND	<i>Eryx johnii</i>	IV	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	
2	BOA, RED SAND	<i>Eryx conicus</i>	IV	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	

3	TURTLE, CHITRA	<i>Chitra indica</i>	IV	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
4	KRAIT, BANDED	<i>Bungarus fasciatus</i>	IV	0	0	2	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4	4
5	KRAIT, COMMON INDIAN	<i>Bungarus caeruleus</i>	IV	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
6	TORTOISE, ASIAN BROWN	<i>Manouria emys</i>	IV	3	3	0	6	0	0	0	0	0	0	0	0	0	0	0	3	3	0	6	
7	TORTOISE, STAR INDIAN	<i>Geochelone elegans</i>	IV	7	5	1	13	0	0	1	0	0	0	0	0	0	0	0	7	5	2	14	
SCH-III & SCH-IV Reptils – TOTAL				12	11	8	31	0	0	3	0	0	0	0	0	0	0	0	12	11	11	34	
EXOTIC BIRDS																							
1	BUDGERIGAR	<i>Melopsittacus undulatus</i>	E	188	292	98	578	0	0	15	0	0	0	2	2	0	0	0	0	163	267	11	543
2	COCKATIEL, WHITE/ CINAMON PEARS PIED	<i>Nymphicus hollandicus</i>	E	21	28	52	101	0	0	0	0	0	0	5	5	0	0	0	0	16	23	52	91
3	COCKATOO, LESSER SULPHUR CRESTED	<i>Cacatua sphurea</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4	COCKATOO, UMBRELLA SULPHUR CRESTED	<i>Cacatua sphurea</i>	E	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
5	CONNURE, BROWN THROATED	<i>Eupsittula pertinax</i>	E	1	1	1	3	0	0	0	0	0	0	0	0	1	0	0	0	1	1	2	
6	CONNURE, JANDAYA	<i>Aratinga jandaya</i>	E	1	2	18	21	0	0	0	0	0	0	0	0	0	0	1	1	2	17	20	
7	CONURE, SUN	<i>Aratinga solstitialis</i>	E	4	4	25	33	0	0	0	0	0	0	0	0	0	0	5	4	4	20	28	
8	CONURE, PINE APPLE	<i>Pyrrhura molinae molinae</i>	E	3	8	0	11	0	0	0	0	0	0	0	0	0	2	0	3	6	0	9	
9	CONURE, YELLOW SIDED	<i>Pyrrhura molinae sordida</i>	E	11	12	0	23	0	0	0	0	0	0	0	0	3	5	0	8	7	0	15	
10	DOVE, BARBARY	<i>Streptopelia risoria</i>	E	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
11	DOVE, DIAMOND	<i>Geopelia cuneata</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
12	DOVE, LAUGHING	<i>Spilopelia senegalensis</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
13	DOVE, RING NECKED	<i>Streptopelia capicola</i>	E	1	1	1	3	0	0	0	0	0	0	0	0	0	0	1	1	1	0	2	
14	DUCK, MANDARIN	<i>Aix galericulata</i>	E	5	5	1	11	0	0	1	0	0	0	0	0	1	2	0	4	3	2	9	
15	EMU	<i>Dromaius novaehollandiae</i>	E	2	3	7	12	0	0	0	0	0	0	0	0	1	0	0	1	3	7	11	
1	FINCH, BENGALnese/	<i>Lonchura striata</i>	E	6	11	7	24	0	0	0	0	0	0	0	0	0	0	0	6	11	7	24	

6	SOCIETY																						
17	FINCH, LONG TAILED	<i>Poephila cincta</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
18	FINCH, STAR	<i>Poephila ruficauda</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
19	FINCH, ZEBRA	<i>Poephila guttata</i>	E	66	76	78	220	0	0	0	0	0	0	0	0	0	0	0	0	66	76	78	220
20	LORIKEET, BLUE FACED	<i>Trichoglossus haematodus enetermedius</i>	E	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	2
21	LORIKEET, SWAINSON'S	<i>Trichoglossus haematodus moluccanus</i>	E	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2
22	LORRY, YELLOW BACKED	<i>Lorius garrulus flavopalliatu</i>	E	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
23	LOVE BIRD, FISCHERS	<i>Agapornis fischeri</i>	E	11	10	16	37	0	0	0	0	0	0	0	0	0	0	0	3	11	10	13	34
24	LOVE BIRD, PEACH-FACED	<i>Agapornis roseicollis</i>	E	4	6	2	12	0	0	0	0	0	0	0	0	0	0	0	4	6	2	12	
25	LOVE BIRD, MASKED	<i>Agapornis personatus</i>	E	1	2	1	4	0	0	0	0	0	0	0	0	0	0	0	1	2	1	4	
26	MACAW, GREEN WINGED	<i>Ara chloroptera</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
27	OSTRICH	<i>Struthio camelus</i>	E	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	
28	PARROT, AFRICAN GREY	<i>Psittacus erithacus</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
29	PHEASANT, GOLDEN	<i>Chrysolophus pictus</i>	E	5	14	5	24	0	0	0	0	0	0	0	0	2	1	0	3	14	4	21	
30	PHEASANT, LADY AMHERST'S	<i>Chrysolophus amherstiae</i>	E	1	2	8	11	0	0	0	0	0	0	0	0	0	0	0	1	2	8	11	
31	PHEASANT, REEV'S	<i>Syrnaticus reevesii</i>	E	0	1	3	4	0	0	0	0	0	0	0	0	0	1	0	0	0	3	3	
32	PHEASANT, SILVER	<i>Lophura nycthemera</i>	E	9	16	6	31	0	0	0	0	0	1	2	0	0	2	0	8	12	6	26	
33	PHEASANT, YELLOW GOLDEN	<i>Chrysolophus pictus mut.</i>	E	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
34	ROSELLA, EASTERN	<i>Platycercus eximius</i>	E	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	
35	SPARROW, JAVA	<i>Padda oryzivora</i>	E	11	23	64	98	0	0	25	0	0	0	0	0	0	0	0	11	23	89	123	

3 6	SWAN, BLACK	<i>Cygnus atratus</i>	E	1	1	0	2	0	0	0	2	3	0	0	0	0	0	1	0	3	3	0	6
3 7	PARROT, MEYER'S	<i>Poicephalus meyeri</i>	E	2	2	0	4	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	3
3 8	PARROT, RED BELLIED	<i>Pionus sordidus</i>	E	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5
3 9	PARAKEET, RINGED NECKED A. Lutino Mutation	<i>Psittacula krameri krameri</i>	E	2	2	5	9	0	0	1	0	0	0	0	0	0	0	0	0	2	2	6	10
	B. Albino Mutation	<i>Psittacula krameri krameri</i>	E	2	2	3	7	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	7
4 0	TURACO, VIOLET	<i>Musophaga violacca</i>	E	0	0	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	4
4 1	TURACO, LIVING STONE'S	<i>Turaco living stonii</i>	E	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL EXOTIC BIRDS				372	536	41	131	0	0	43	2	3	0	3	3	0	9	14	1	334	494	44	126
EXOTIC MAMMALS																							
1	BABOON, HAMADRYAS	<i>Papio hamadryas</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
2	CHIMPANZEE	<i>Pan troglodytes</i>	E	2	6	0	8	0	0	0	0	0	0	0	0	0	0	1	0	2	5	0	7
3	GIRAFFE	<i>Giraffa camelopardalis</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
4	HIPPOPOTAMUS	<i>Hippopotamus amphibius</i>	E	4	7	1	12	0	0	2	0	0	0	0	0	0	0	2	1	4	5	2	11
5	LION, HYBRID	<i>Panthera leo</i>	E	4	3	0	7	0	0	0	0	0	0	0	0	0	0	0	0	4	3	0	7
6	LION, AFRICAN	<i>Panthera leo</i>	E	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
7	MEERKAT, SLENDER TAILED	<i>Suricata Suricatta</i>	E	0	0	0	0	0	0	0	1	3	0	0	0	0	0	1	0	1	2	0	3
8	MARMOSET, BLACK- TUFTED	<i>Callithrix penicillata</i>	E	3	1	3	7	0	0	0	0	0	0	0	0	0	0	0	0	3	1	3	7
9	TAMARIN, RED- HANDED	<i>Saguinus midas</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
1 0	CAPUCHIN, TUFTED	<i>Sapajus apella</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
1 1	COMMON SQUIRREL MONKEY	<i>Saimiri sciureus</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
TOTAL EXOTIC MAMMALS				15	24	4	43	0	0	2	1	3	0	0	0	0	0	5	1	16	22	5	43
EXOTIC REPTILES																							
1	CROCODILE, MORELET'S	<i>Crocodylus moreletii</i>	E	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2

2	CROCODILE, SIAMESE	<i>Crocodylus siamensis</i>	E	3	12	3	18	0	0	0	0	0	0	0	0	0	0	0	3	12	3	18				
3	CUVIERS DWARF CAIMAN	<i>Paleosuchus Palpebrosus</i>	E	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5				
4	A. IGUANA, GREEN	<i>Iguana iguana</i>	E	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2				
	B. IGUANA, RED	<i>Iguana iguana</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1				
5	CROCODILE, NILE	<i>Crocodylus niloticus</i>	E	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3				
6	ANACONDA, YELLOW	<i>Eumectes notaeus</i>	E	0	0	5	5	0	0	9	0	0	0	0	0	0	0	2	0	0	12	12				
TOTAL EXOTIC REPTILES				5	20	11	36	0	0	9	0	0	0	0	0	0	0	2	5	20	18	43				
				Stock as on 01 .04.2022				Births			Acquisitions			Disposals			Deaths			Stock as on Dt-31.03.2023						
	Species			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T			
AMPHIBIANS																										
1	FROG, INDIAN BULL	<i>Hoplobatrachus tigerinus</i>	IV	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3				
2	FROG, GREEN POND	<i>Euphlyctis hexadactyla</i>	IV	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3				
3	FROG, INDIAN SKIPPER	<i>Euphlyctis cyanophlyctis</i>	IV	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5				
4	FROG, COMMON INDIAN TREE	<i>Polypedates maculatus</i>	IV	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3				
5	TOAD, ASIAN COMMON	<i>Duttaphrynus melanostictus</i>	IV	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5				
6	TOAD, MARBLED	<i>Bufo stamaticus</i>	IV	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2				
TOTAL AMPHIBIANS				0	0	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	21			
				Stock as on 01 .04.2022																			Stock as on Dt-31.03.2023			
				M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T			
	Birds			512	721	61	185	0	0	78	2	3	0	3	3	0	1	20	1	468	669	68	181			
	Mammal			874	825	13	183	2	21	97	1	3	0	1	1	0	2	30	7	892	835	19	192			
	Reptiles			79	161	63	303	2	2	36	0	0	0	0	0	0	0	0	2	81	163	97	341			
	Amphibians			0	0	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	21			
	TOTAL			146	170	84	401	2	23	21	3	6	0	3	3	0	3	50	2	144	166	99	410			
				5	7	0	2	5		1				6	7		2	5	1	7	2	0				
				No. of Individuals				No. of species									No. of species			No. of Individuals						
	BIRDS - SCH I&II			11	12	31	54		10									10		11	9	37	57			

	-SCH III & IV		129	173	17 7	479	26								26		123	166	20 2	491
	-EXOTIC		372	536	41 1	131 9	41								41		334	494	44 1	126 9
	MAMMAL - SCH I& II		100	117	86	303	25								27		106	124	12 4	354
	-SCH III & IV		759	684	47 0	149 0	10								11		770	689	65	152 4
	-EXOTIC		15	24	4	43	10								11		16	22	5	43
	REPTILE - SCH I & II		62	130	44	236	17								17		64	132	68	264
	-SCH III & IV		12	11	8	31	6								7		12	11	11	34
	-EXOTIC		5	20	11	36	6								6		5	20	18	43
	AMPHIBIANS SCH I &II		0	0	0	0	0								0		0	0	0	0
	-SCH IV		0	0	21	21	6								6		0	0	21	21
	TOTAL		146 5	170 7	84 0	401 2	15 7								16 2		144 1	166 7	99 2	410 0

27. Mortality of animals:**ANNUAL REPORT ON THE DEATH OF CAPTIVE ANIMALS AT
NANDANKANAN ZOOLOGICAL PARK (FROM 01.04.2022 TO 31.03.2023)**

SL.NO	DATE	ANIMAL	AGE	SEX	CAUSE OF DEATH
MAMMALS					
1	12.04.22	Normal Colour Tiger	About 1 year	M	Acute pneumonia, acute cardiac failure along with fracture at femur
2	14.04.22	Normal ColourTiger	One month	F	Anaemia and debility
3	15.04.22	Sambar deer	Adult	M	Septicemia
4	16.04.22	Asiatic lion	20 yr 3 months	F	Multiple tumor in lungs, liver cirrhosis associated with old age
5	19.04.22	Hippopotamus	About 12 years	F	Multiple injuries and septicemia
6	24.04.22	Manipuri deer	Adult	M	Acute Pneumonia
7	02.05.22	Gaur	Adult	F	Haemorrhagic Myositis
8	28.05.22	African lion	Adult	F	Snake bite
9	01.06.22	Spotted deer	Adult	M	Infighting
10	08.06.22	Sambar deer	Adult	M	Nasal tumor
11	20.06.22	Nilgai	3 months	M	Trampling
12	01.07.22	Barking deer	Adult	F	Suppurative pneumonia
13	11.07.22	Spotted deer	Adult	M	Infighting
14	20.07.22	Hippopotamus	About 1 month	M	Punctured wounds penetrating to abdominal cavity
15	02.08.22	Black buck	5 days	F	Heat stress
16	08.08.22	Barking deer	Adult	F	Tuberculosis
17	10.08.22	Leopard	About 16 years	M	Pneumonia
18	21.08.22	Barking deer	Adult	F	Pneumo-enteritis
19	22.08.22	Chimpanzee	7 months 25 days	F	Pneumonia
20	26.08.22	Sambar deer	21 days	F	Hepatitis
21	27.08.22	Black buck	7 days	M	Shock associated with fracture

22	13.09.22	Hog deer	Adult	F	Hepatitis associated with old age
23	18.09.22	Black buck	Adult	M	Shock associated with open fracture
24	21.09.22	Black buck	Adult	M	Anaemia associated with hepatitis
25	25.09.22	Spotted deer	Adult	M	Infighting
26	26.09.22	Barking deer	Adult	F	Pneumonia
27	02.10.22	Mouse deer	About 3 months	F	Acute pneumonia
28	04.10.22	Hippopotamus	19 days	F	Multiple injuries and septicemia
29	04.10.22	Mouse deer	About 3months	M	Pneumonia and enteritis
30	08.10.22	Mouse deer	Sub-adult	F	Pneumonia
31	10.10.22	Hog deer	Adult	F	Infighting injury
32	13.10.22	Nilgai	Adult	F	Liver tumor associated with senility
33	22.10.22	White Tiger	11 year 3 months	F	Lungs cancer
34	28.10.22	Elephant	About 68 years	F	Nephritis associated with old age
35	29.10.22	Spotted deer	Adult	M	Infighting injuries
36	02.11.22	Indian Gaur	One day	F	Pneumonia
37	11.11.22	Hog deer	Adult	M	Injury and septicemia
38	06.12.22	Swamp deer	Adult	M	Puncture injury and internal haemorrhage
39	06.12.22	Spotted deer	Adult	F	Infighting injury
40	10.12.22	Spotted deer	Adult	F	Senility
41	12.12.22	Spotted deer	Adult	M	Infighting injury
42	12.01.23	Hog deer	Adult	M	Infighting injury
43	16.01.23	Slender tailed Meerkat	Adult	F	Asphyxia
44	27.01.23	Manipur deer	About 2 mn	F	Debility, anaemia and pneumonia
45	31.01.23	Hog deer	About 6 mn	F	Hepatic abscess & anemia
46	02.02.23	Indian Grey Wolf	15 days	F	Pneumonia

47	04.02.23	Hog deer	5 days	F	Omphalitis
48	05.02.23	Sambar	Adult	F	Pneumonia
49	06.02.23	Sambar	Adult	F	Septicemia
50	06.02.23	Spotted deer	Adult	F	Hepatitis associated with senility
51	07.02.23	Spotted deer	Adult	M	Infighting injury
52	10.02.23	Sambar	Adult	M	Infighting injury
53	13.02.23	Bonnet macaqu	Adult	M	Debility associated with senility
54	20.02.23	Manipuri deer	About 15 yrs	M	Infighting injury associated with senility
55	04.03.23	Manipuri deer	About 13 yrs	M	Septicemia associated with senility
56	16.03.23	Black buck	Adult	F	Fracture of tibia and shock
57	17.03.23	Mouse deer	Adult	F	Septicemia
58	23.03.23	Indian Fox	Adult	M	Enteritis

BIRDS

1	05.04.22	Rosy Pelican	About 32 years	F	Old age
2	12.04.22	Mandarin duck	Adult	F	Tumor of liver and intestine
3	28.06.22	Sun conure	Adult	M	Hepatitis
4	06.07.22	Brown throated Conure	Adult	M	Debility and old age
5	12.07.22	Meyer's Parrot	Adult	M	Shock
6	17.07.22	Alexandrine Parakeet	Adult	M	Visceral gout
7	19.07.22	Open billed Stork	Adult	M	Impaction
8	27.07.22	Golden Pheasant	Adult	M	Infighting
9	29.07.22	Yellow sided Conure	Adult	F	Parasitic enteritis
10	08.08.22	White Peafowl	Adult	F	Pneumo-enteritis
11	16.08.22	Sun conure	About 4 months	M	Traumatic injury
12	17.08.22	Golden Pheasant	Adult	M	Nephritis

13	26.08.22	Yellow sided conure	Adult	F	Internal haemorrhage
14	21.09.22	Yellow sided conure	Adult	F	Hepatitis and enteritis
15	06.10.22	Ring necked dove	Adult	F	Pneumonia
16	07.10.22	Red Jungle fowl	Adult	M	Pneumo-enteritis
17	07.10.22	Sun Conure	Adult	F	Enteritis
18	09.10.22	Sun Conure	Adult	F	Enteritis
19	10.10.22	Jandaya Conure	Adult	M	Hepatitis and nephritis
20	16.10.22	Reeve's Pheasant	Adult	F	Tumor in the abdomen
21	17.10.22	Grey heron	Adult	M	Pneumonia and debility
22	23.10.22	Emu	Adult	M	Infighting injury
23	26.10.22	Grey heron	Adult	M	Debility and senility
24	12.11.22	Sun conure	Adult	F	Pneumonia
25	17.11.22	White Eurasian Spoonbill	About 29 years	F	Hepatitis associated with senility
26	21.11.22	Yellow sided Conure	Adult	M	Internal haemorrhage
27	11.12.22	Pine apple conure	Adult	F	Hepatitis and parasitic enteritis
28	13.12.22	Yellow sided conure	Adult	F	Parasitic enteritis
29	17.12.22	Emerald dove	Adult	---	Predator bite
30	19.12.22	Emerald dove	Adult	---	Predator bite
31	05.01.23	Swanson's Lorikeet	Adult	M	Hepatitis and nephritis
32	07.01.23	Yellow sided Conure	Adult	F	Enteritis
33	12.01.23	Yellow sided Conure	Adult	M	Internal haemorrhage and shock
34	17.01.23	Grey Heron	Adult	F	Hepatitis
35	26.01.23	Golden Pheasant	Adult	F	Infighting injury
36	06.02.23	Pineapple conure	Adult	F	Hepatitis and nephritis
37	07.02.23	Mandarin duck	Adult	M	Visceral gout

28. Compliance with conditions stipulated by the Central Zoo Authority:

38	10.02.23	Silver Pheasant	Adult	F	Infighting injury
39	14.02.23	Silver Pheasant	Adult	F	Salpingitis
40	18.02.23	Love bird (Fischer's')	Adult	M	Enteritis
41	20.02.23	Yellow sided Conure	Adult	F	Haemorrhagic liver
42	09.03.23	Love bird (Fischer's')	Adult	M	Traumatic injury & shock
43	16.03.23	Black swan	Adult	F	Pneumo-enteritis
44	23.03.23	Blue faced Lorikeet	Adult	F	Haemorrhagic enteritis
45	24.03.23	White Peafowl	Adult	F	Egg bound condition and shock
46	28.03.23	Mandarin duck	Adult	F	Internal haemorrhage and shock
47	29.03.23	Love bird (Fischer's')	Adult	M	Hepatitis and enteritis

REPTILES

1	02.11.22	Yellow Anaconda	About 4 months	F	Intestinal impaction
2	29.12.22	Yellow Anaconda	About 7 years	F	Intestinal impaction

ABSTRACT

Mammals	Birds	Reptiles	Total
58	47	02	107

Sl.No.	Norm under RZR, 2009	Condition Stipulated	Time period to comply	Since when pending	Compliance report
	1. General requirements				
1.	10.1(4)& 10.1(9)	Security at gate required to be made more vigilant to check the entrance of stray dogs.	Immediately	31/12/2020	Complied
2.	10.1(5)	<p>a. There is a thoroughfare inside the zoo which connects two adjacent villages namely Raghunathpur and Daruthenga. This is a security hazard as the villagers entry the campus without ticket. This issue should be amicably settled.</p> <p>b. The road leading to State Botanical Garden is passing in front of the zoo gate and creating congestion and problem to visitor's entry into the zoo. Hence, It should be closed for the public use and alternate arrangement should be made for construction of separate approach road to State Botanical Garden.</p>	<p>Six months</p> <p>One year</p>	31/12/2020	<p>Action is being taken for the record the vehicle details using the thoroughfare at the entry and exit gate. Provision for stopping the thoroughfare has been made in the Master plan.</p> <p>Complied by construction of separate approach road.</p>
3.	10.1(7)	The solid wastes should be disposed off at the earmarked	One year	31/12/2020	Solid waste is being disposed off at an earmarked place.

		place within the campus. In order to dispose off liquid waste the authority should go for STP. The waste material (solid or liquid) should never be released in the Kanjia lake.			Collaboration has been made with Bhubaneswar Municipal Corporation to remove and dispose the said waste at BMC dumping site on weekly basis. Provision of STP has been made in Master Plan for implementation in the subsequent years in phase wise manner.
2. Administrative & Staffing Pattern					
4.	10.2(1)	The Deputy Director should be delegated adequate financial and administrative power to run the zoo smoothly. The authority should expedite the proposal to construct the administrative building including the chamber of the Director inside the zoo campus.	Six months	31/12/2020	The Deputy Director has an independent office with full DDO powers. Plan to construct a new administrative block with chamber of the Director has been made in the master plan.
5.	10.2(2)	Full time Curator having Master's Degree in Wildlife Science/Zoology should be recruited.	One year	31/12/2020	Under active consideration. Present Curator having a decade long association in Zoo Management is quite competent.
3. Development and Planning					
6.	10.3(1)	a. The duration of present Master Plan will end on 31.03.2020. New	Three months	31/12/2020	Master Plan already submitted to CZA on 14.12.2020. Comments on the

		<p>Master Plan must be prepared and submitted to CZA for approval</p> <p>b. The incomplete service road to distribute food must be completed</p>	Six months		<p>Master plan from CZA received on 18.04.2022. Revision of Master Plan complying to the comments received is in the final stage of completion and will be submitted on 18 August, 2023.</p> <p>Service road development is being carried out in phase wise manner. Service road in back side of the tiger enclosures, safaris, North-east Panaroma has been completed. The remaining road current and subsequent financial years as planned in the Master Plan.</p>
7.	10.3(5)	The quarantine ward should be constructed at earliest.	Six months	31/12/2020	Quarantine ward for carnivores is constructed away from animal enclosures. The quarantine ward for herbivores, reptiles and birds has been planned and will be constructed as per Master plan in coming years.
	4. Animal Housing, Display of Animals & Animal Enclosures				
8.	10.4(2)	There are a number of enclosures where the space is still	One year	31/12/2020	The said enclosures have been renovated to

		inadequate as per CZA norms e.g. cobras, banded krait, vipers, boa etc. The authority should take action to increase the size of the enclosure.			provide more space to the exhibited snakes species. Detail plan for construction of new enclosure and modification of existing enclosure for the snakes and other reptiles in the reptile park as per CZA norms.
9.	10.4(2)	The enrichment of the enclosures of rhesus monkey and bonnet monkey and Hamadryads baboon should be increased.	Six months	31/12/2020	Complied. The existing small, old enclosures have been renovated to large enclosures with adequate enrichment.
10.	10.4(3),(4)&(5)	Renovation of EN 45 series of Reptile Park and bird enclosure EN 3ABC, 7ABC, 8ABC, 4 and 6 to provide appropriate space for movement and expression of natural behaviour and to maintain safe distance.	One year	31/12/2020	Complied for EN 45 series of Reptile Park by renovation of enclosures. Provision made in the new Master Plan for to keep small passerines in EN 3ABC and renovate 7ABC, 8ABC, 4 and 6 with adequate space and enrichment complying CZA guidelines
11.	10.4(6)	A number of trees and plants have uprooted and fallen due to cyclone 'PHANI' in all the safaris. As a result, they are hindering the animal sighting.	Six months	31/12/2020	Complied. 1000 tall tree plantation carried out replacing the dead uprooted trees. Live uprooted trees have been pruned at strategic locations for better animal sighting in safaris.

12.	10.4(8)	Extension of Bear Safari, Tiger safari and Herbivore safari need to be done as per CZA norms. The present area is 4.1ha.	One year	31/12/2020	All the Safaris will be shifted to Chudang area in the new Master Plan, converting the existing safaris to rewilding zones. Therefore, the safaris have not been considered for further extension.
13.	10.4(9)	a. There are number of enclosures where height of stand-off barrier is not as per CZA norms. It should be reduced in phase manner.	One year	31/12/2020	Complied
		b. Damaged pillar of stand-off barrier must be repaired or replaced.	Immediately		Fully complied
14.	10.4(10)	The signage in nocturnal house should be fixed at appropriate place so that the visitor could see it well.	One month	31/12/2020	Complied
5. Upkeep and Healthcare of Animals					
15.	10.5(1)	Efforts must be made to make pair of Giraffe, Asiatic lion, African lion, hill mynah, spoonbill, Ganges soft shell turtle.	One year	31/12/2020	Asiatic lion already paired; animal exchange proposal initiated for the remaining species.
		The green dirty water of hippo enclosure should be treated through STP and re-	One year		Provision has been made in new Master Plan for implantation of STP

		circulate.			will be carried out in the current financial year.
16.	10.5(2)	Keeping in view the large number of animals the storage facility for keeping required food is inadequate. Therefore, additional food storage go down is required.	Six months	31/12/2020	New feed Godown is being contemplated in the new Master plan for implementation in next year.
	6. Veterinary and Infrastructure Facilities				
17.	10.6(1)	The zoo hospital should have one portable x-ray unit, gaseous anaesthesia apparatus, separate operation theatre, more number In-Patient Ward units and a mini conference hall to increase its efficiency.	One and half year	31/12/2020	Modernization of zoo hospital have been carried out with addition of portable x-ray unit, gaseous anaesthesia apparatus, ultrasonography and a modern operation theatre, one movable x-ray unit procured. After establishment of new quarantine facility away from animal enclosures, the existing quarantine near is converted to inpatient ward with adequate facility for housing the animals under treatment. The provision of mini conference hall is made in the new Master Plan and will be implemented in

					subsequent years.
	9. Acquisition and Breeding of animals				
18.	10.9(4)	Efforts should be made pair of the species like Hill Myna, White Spoonbill, White Backed Vulture, Indian Small Civet, Salt Water Crocodile, two species of Python, Rat Snake, Ganges Soft-shelled Turtle, Russell's Viper, Sarus Crane, Large Egret, Median Egret, Black Headed Munia, Spotted Munia, Oriental Scops Owl, Blossom Headed Parakeet, Adjutant Stork (lesser), White Neck Stork, Indian Porcupine, Lesser Sulphur Crested Cockatoo, White Cockatoo, Star Finch, Yellow Backed Lorry, Giraffe.	One year	31/12/2020	Animal exchange proposal initiated and followed up for these species. White spoonbill, white necked stork, white backed vultures have meanwhile died.
19.	10.9(6)	The CZA has assigned the conservation breeding of Indian pangolin since 2009. This zoo has shown good result by breeding this endangered species in captivity. This		31/12/2020	The conservation breeding for Indian pangolin is continuing with financial assistance from CZA.

		project should continue by financial assistance from CZA.			
20.	10.9(9)	The authorities now should try to send the excess Spotted deer, Sambar, Blackbuck, common palm civet, gharial, mugger population to different wildlife protected area in consultation with the concerned authorities	One year	31/12/2020	The zoo has rehabilitated 16 gharials in the river Mahanadi under ongoing Species recovery of gharial in river Mahanadi programme. And, 169 spotted deer are also translocated Chandaka-Dampara Sanctuary. Similar plans are prepared for other surplus species. The has developed well equipped Zoo laboratory to facilitate disease screening prior to release of these species to wild. Liaison with local forest divisions going on for release of stock.
21.	10.9(12)	Efforts should be made to phase out hybrid lion	One year	31/12/2020	Disposal of hybrid lions are under consideration. there breeding has been banned
	12. Visitor Facilities				
22.	10.12(1)	The under-construction parking must be completed so that the temporary parking which is inadequate may be discontinued	One year	31/12/2020	Complied. Construction of new parking facility completed.

23.	10.12(1)	<p>The vendors in front of the Main gate give shabby look and create hazard for the vehicles as well as visitors, which should be trans-located</p> <p>It is observed that the Safari Bus Stop is situated within the main zoo area near Reptile Park which is dangerous for the visitors as it intercepts visitor circulation path. The zoo has already taken steps to relocate the safari bus stop to outside main zoo area, which should be completed immediately to avoid plying of bus in zoo visitors route.</p> <p>It is observed that the BOVs are moving in zigzag manner though there are earmarked stoppages for the BOVs. Hence the zoo-in-charge should give attention that the BOVs must move in tracks dedicated for the purpose</p> <p>There should be separate exit path for</p>	<p>One year</p> <p>Three months</p> <p>Immediately</p> <p>Three months</p>	31/12/2020	<p>Provision of has been made in the new Master plan to shift the vendors in to a market complex near the bus bay and renovate the Entrance Plaza.</p> <p>Complied.</p> <p>Complied.</p> <p>Complied.</p>
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		the visitors to avoid congestion and rush. The zoo authorities have already taken steps to make separate exit path for the visitors. It should be completed immediately			
24.	10.12(1)	<p>There is an eatery complex near reptile park where majority of the visitors congregate to take snacks, thereby polluting the space with leftover foods which attracts many free-living animals like rodents, cats and crows which may lead to hazardous effect on captive animals. Therefore, this particular eatery complex should be relocated to the place far away from enclosures.</p> <p>The frontage gate of the restaurant run by OTDC (near FRH) should be shifted to outside the zoo premises.</p>	<p>Six months</p> <p>Six months</p>	31/12/2020	<p>The eatery complex near reptile park will be shifted to Cafeteria of Safari Bus stand. Steps are being taken.</p> <p>Official communication initiated with OTDC for shifting of entry gate outside of Zoo premises.</p>

29. List of free living wild animals within the zoo premises:

MAMMALS OF NANDANKANAN

Sl. No.	Common Name	Scientific name	Status
1	Wild Boar	<i>Sus scrofa</i>	R
2	Spotted Deer	<i>Axis axis</i>	VC
3	Ratel	<i>Mellivora capensis</i>	R
4	Common mongoose	<i>Herpestes edwardsi</i>	VC
5	Indian Porcupine	<i>Hystrix indica</i>	R
6	Mouse Deer or Indian Chevrotain	<i>Tragulus meminna</i>	R
7	Common palm civet	<i>Paradoxurus hermaphrodites</i>	R
8	Jackal	<i>Canis aureus</i>	R
9	Indian fox	<i>Vulpes bengalensis</i>	VR
10	Common Langur	<i>Presbytis entellus</i>	VC
11	Rhesus Macaque	<i>Macaca mulatta</i>	VC
12	Jungle Cat	<i>Felis chaus</i>	R
13	Pangolin	<i>Manis crassicaudata</i>	VR
14	Indian hare	<i>Lepus nigricollis</i>	C
15	Small Indian civet	<i>Viverricula indica</i>	R
16	Striped hyena	<i>Hyaena hyaena</i>	R
17	Three striped palm squirrel	<i>Funambulus palmarium</i>	VC
18	Rat	<i>Rattus rattus</i>	VC
19	Indian flying fox	<i>Pteropus giganteus</i>	R
20	Horse shoe bat	<i>Rhinolophus lepidus</i>	VC

BIRDS OF NANDANKANAN

Sl. No.	Common Name	Scientific Name	Status
PHASIANIDAE			
1	Grey Partridge	<i>Francolinus pondicerianus</i>	C
2	Common Peafowl	<i>Pavo cristatus</i>	VC
3	Red Jungle fowl	<i>Gallus gallus murghi</i>	R
4	Red Spurfowl	<i>Galloperdix spadicea</i>	R
DENDROCYGNIDAE			
5	Lesser Whistling Teal	<i>Dendrocygna javanica</i>	VR
ANATIDAE			
6	Cotton pigmy goose	<i>Nettapus coromandelianus</i>	VR
7	Common Teal	<i>Anas crecca</i>	R
8	Spot-billed Duck	<i>Anas poecilorhyncha</i>	VR
9	Gadwall	<i>Anas strepera</i>	R
10	Northern Pintail	<i>Anas acuta</i>	R

11	Brahminy Duck	<i>Tadorna ferruginea</i>	VR
TURNICIDAE			
12	Barred Buttonquail	<i>Turnix suscitator</i>	R
PICIDAE			
13	Yellow fronted Pied or Mahratta Woodpecker	<i>Dendrocopos mahrattensis</i>	R
14	Larger Golden backed Woodpecker	<i>Chrysocolaptes lucidus</i>	C
15	Black-rumped flameback	<i>Dinopium benghalense</i>	VR
MEGALAIMIDAE			
16	Small Green Barbet	<i>Megalaima viridis</i>	R
17	Copper-smith Barbet	<i>Megalaima haemacephala</i>	R
18	Brown-headed Barbet	<i>Megalaima zeylanica</i>	R
UPUPIDAE			
19	Common Hoopoe	<i>Upupa epops</i>	R
CORACIIDAE			
20	Indian Roller or Blue Jay	<i>Coracias benghalensis</i>	C
ALCEDINIDAE			
21	Indian Small Blue Kingfisher	<i>Alcedo atthis bengalensis</i>	VR
DACLONIDAE			
22	White breasted Kingfisher	<i>Halcyon smyrnensis perpulchra</i>	C
CERYLIDAE			
23	Lesser Pied Kingfisher	<i>Ceryle rudis</i>	VR
MEROPIIDAE			
24	Indian Small Green Bee-eater	<i>Merops orientalis</i>	C
25	Blue Bee-eater	<i>Merops philippinus</i>	R
CUCULIDAE			
26	Indian Koel	<i>Eudynamys scolopacea</i>	VC
27	Pied Cuckoo	<i>Clamator jacobinus</i>	R
28	Common hawk Cuckoo	<i>Hierococyx varius</i>	VR
29	Plaintive Cuckoo	<i>Cacomantis merulinus</i>	VR
30	Blue faced Malkoha	<i>Phaenicophaeus viridirostris</i>	VR
CENTROPODIDAE			
31	Crow-pheasant or Coucal	<i>Centropus sinensis</i>	VC
PSITTACIDAE			
32	Rose-ringed Parakeet	<i>Psittacula krameri</i>	VR
33	Alexandrine Parakeet	<i>Psittacula eupatria</i>	R
APODIDAE			
34	Asian palm swift	<i>Cypsiurus balasiensis</i>	C
TYTONIDAE			
35	Barn Owl	<i>Tyto alba</i>	VC

STRIGIDAE			
36	Eastern Spotted Scops Owl	<i>Otus spilocephalus</i>	VR
37	Spotted Owlet	<i>Athene brama</i>	C
CAPRIMULGIDAE			
38	Indian Jungle Nightjar	<i>Caprimulgus indicus</i>	C
COLUMBIDAE			
39	Indian Blue Rock Pigeon	<i>Columba livia intermedia</i>	C
40	Indian Spotted Dove	<i>Streptopelia chinensis</i>	VC
41	Emerald Dove	<i>Chalcophaps indica</i>	VR
RALLIDAE			
42	Purple Moorhen	<i>Porphyrio porphyrio</i>	R
43	Water cock	<i>Gallicrex cinerea</i>	R
44	Common moorhen	<i>Gallinula chloropus</i>	C
45	White breasted Waterhen	<i>Amaurornis phoenicurus boliocephalus</i>	C
SCOLOPACIDAE			
46	Eurasian Curlew	<i>Numenius arquata</i>	VR
47	Common snipe	<i>Gallinago gallinago</i>	R
48	Wood Sandpiper	<i>Tringa glareola</i>	R
49	Indian Stone Curlew	<i>Burhinus oedicephalus indicus</i>	VR
JACANIDAE			
50	Bronze winged Jacana	<i>Metopidius indicus</i>	C
51	Pheasant-tailed Jacana	<i>Hydrophasianus chirurgus</i>	R
CHARADRIIDAE			
52	Red-wattled Lapwing	<i>Vanellus indicus</i>	C
53	Yellow wattled Lapwing	<i>Vanellus malabaricus</i>	C
ACCIPITRIDAE			
54	Pariah Kite	<i>Milvus migrans govinda</i>	VR
55	Shikra	<i>Accipiter badius dussumderi</i>	R
56	Osprey	<i>Pandion haliaetus</i>	R
57	Crested Serpent eagle	<i>Spilornis cheela</i>	R
ANHINGIDAE			
58	Darter or Snake-bird	<i>Anhinga melanogaster</i>	C
PHALACROCORACIDAE			
59	Little Cormorant	<i>Phalacrocorax niger</i>	VC
ARDEIDAE			
60	Pond Heron	<i>Ardeola grayii</i>	C
61	Purple Heron	<i>Ardea purpurea</i>	VR
62	Grey Heron	<i>Ardea cinerea</i>	VR
63	Cattle Egret	<i>Bubulcus ibis coromandus</i>	VC
64	Little Egret	<i>Egretta garzetta</i>	VC
65	Median Egret	<i>Mesophoyx intermedia</i>	R

66	Great Egret	<i>Casmerodius albus</i>	R
67	Night Heron	<i>Nycticorax nycticorax</i>	C
68	Great Bittern	<i>Botaurus stellaris</i>	VR
69	Black Bittern	<i>Dupetor flavicollis</i>	VR
70	Yellow Bittern	<i>Ixobrychus sinensis</i>	VR
71	Cinnamon Bittern	<i>Ixobrychus cinnamomeus</i>	R
CICONIDAE			
72	Painted Stork	<i>Mycteria leucocephala</i>	VR
73	Openbill Stork	<i>Anastomus oscitans</i>	VC
74	Wooly-necked Stork	<i>Ciconia episcopus</i>	R
THRESKIORNITHIDAE			
75	Oriental White Ibis	<i>Threskiornis aethiopica melanocephala</i>	R
LANIDAE			
76	Large Cuckoo-shrike	<i>Coracina novaehollandiae</i>	R
77	Brown Shrike	<i>Lanius cristatus</i>	R
CORVIDAE			
78	Northeastern Tree Pie	<i>Dendrocitta vagabunda</i>	VC
79	Indian House Crow	<i>Corvus splendens</i>	VC
80	Indian Jungle Crow	<i>Corvus macrorhynchos culminates</i>	VR
81	Indian Paradise Flycatcher	<i>Terpsiphone paradisi</i>	R
82	Indian Black Drongo	<i>Dicrurus macrocercus</i>	VC
83	Indian white-bellied Drongo	<i>Dicrurus caerulescens</i>	R
84	Black-naped Monarch	<i>Hypothymis azurea</i>	VR
85	Indian Golden Oriole	<i>Oriolus oriolus kundoo</i>	C
86	Indian Black headed Oriole	<i>Oriolus xanthornus</i>	C
87	Black headed Cuckoo-shrike	<i>Coracina melanoptera</i>	VR
88	Common Iora	<i>Aegithina tiphia</i>	R
MUSCICAPIDAE			
89	Oriental Magpie Robin	<i>Copsychus saularis</i>	C
90	Indian Robin	<i>Saxicoloides fulicata</i>	C
91	Orange headed thrush	<i>Zoothera citrina</i>	VR
92	Red-throated flycatcher	<i>Ficedula parva</i>	R
STURNIDAE			
93	Indian Pied Myna	<i>Sturnus contra</i>	C
94	Common Myna	<i>Acridotheres tristis</i>	VC
95	Jungle Myna	<i>Acridotheres fuscus</i>	C
96	Brahminy Starling	<i>Sturnus pagodarum</i>	C
PYCNONOTIDAE			
97	Red whiskered Bulbul	<i>Pycnonotus jocosus</i>	R
98	Red vented Bulbul	<i>Pycnonotus cafer</i>	C

99	White-browed Bulbul	<i>Pycnonotus luteolus</i>	R
CISTICOLIDAE			
100	Plain Prinia	<i>Prinia inornata</i>	R
101	Streaked Fantail Warbler	<i>Cisticola juncidis</i>	VR
ZOSTEROPIDAE			
102	Oriental White-eye	<i>Zosterops palpebrosa</i>	R
SYLVIDAE			
103	Indian Rufous Babbler	<i>Turdoides subrufus</i>	R
104	Jungle Babbler	<i>Turdoides striatus</i>	VC
105	Puff-throated Babbler	<i>Pellorneum ruficeps</i>	R
106	Yellow Browed Warbler	<i>Phylloscopus inornatus</i>	R
107	Greenish Warbler	<i>Phylloscopus trochiloides</i>	R
108	Common Tailor Bird	<i>Orthotomus sutorius</i>	VR
ALAUDIDAE			
109	Red-winged Bush-lark	<i>Mirafra erythroptera</i>	VR
NECTARINIDAE			
110	Purple-rumped Sunbird	<i>Nectarinia zeylonica</i>	C
111	Purple Sunbird	<i>Nectarinia asiatica</i>	VC
112	Loten's Sunbird	<i>Nectarinia lotenia</i>	R
PASSERIDAE			
113	White Wagtail	<i>Motacilla alba</i>	R
114	White-browed Wagtail	<i>Motacilla maderaspatensis</i>	R
115	Forest Wagtail	<i>Dendronanthus indicus</i>	R
116	House Sparrow	<i>Passer domesticus</i>	R
117	Paddy field Pipit	<i>Anthus rufulus</i>	C
118	Indian Baya	<i>Ploceus philippinus</i>	VR
119	Black-headed Munia	<i>Lonchura malacca</i>	R
120	Red Avadavat	<i>Amandava amandava</i>	R
HALCYONIDAE			
121	Stork-billed kingfisher	<i>Pelargopsis capensis</i>	R

REPTILES OF NANDANKANAN

Sl.no.	Common Name	Scientific Name	Status
1	Land Monitor lizard	<i>Varanus bengalensis</i>	VC
2	Indian Python	<i>Python molurus</i>	VC
3	Yellow monitor lizard	<i>Varanus flavescens</i>	R
4	Russels Viper	<i>Daboia russelli</i>	C
5	Banded krait	<i>Bungarus fasciatus</i>	R
6	Common Indian Krait	<i>Bungarus caeruleus</i>	VC
7	Indian Cobra Binocellate	<i>Naja naja naja</i>	VC
8	Cobra Monocellate	<i>Naja naja kaouthia</i>	C
9	Rat Snake	<i>Ptyas mucosus</i>	VC

10	Common Indian Broze back or tree snake	<i>Dendrelaphis tristis</i>	C
11	Checkered keel back	<i>Xenochrophis piscator</i>	R
12	Chameleon	<i>Chameleon zeylanicus</i>	C
13	Common Green Whip Snake	<i>Ahaetulla nasuta</i>	R
14	Earth Boa	<i>Eryx johnii</i>	VR
15	Garden lizard	<i>Calotes verricolor</i>	VR

STATUS

VR- Very Rare, R- Rare, VC- Very Common, C- Common