



2019-2020



2019-20

ANNUAL REPORT



  
NANDANKANAN

*Nandankanan Biological Park, Odisha, India*



**ANNUAL REPORT 2019-20**  
**NANDANKANAN BIOLOGICAL PARK**



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**ODISHA**

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## **1. Report of the Officer-in-charge**

Nandankanan Biological Park enjoys a special place in our country for its inimitable amalgamation of *in-situ* and *ex-situ* conservation initiatives. The Zoological Park Established on 29<sup>th</sup> December 1960 as the first zoological park of the State. It has spearheaded many significant improvements to provide highest standards of housing, husbandry and health care to the captive wild animals and contributed towards enriching our knowledge on the biology of endangered species. The sprawling zoo houses 158 species of amphibians, reptiles, birds and mammals. The natural forest areas of Nandankanan is home to a rich assemblage of free-living wild animals including 13 species of mammals, 15 species of reptiles, 179 species of birds, 20 species of amphibians, 96 species of butterflies and 51 species of spiders.

The State Botanical Garden which spreads over an area of 75 ha adjoining the Zoological Park was handed over to Nandankanan Management in August, 2006. This is one of the most important plant conservation facilities in the State. More than 750 species of plants have been documented in the State Botanical Garden.

There are two important wetlands present in Nandankanan namely Kanjia lake (66 ha) and Kiakani lake (25 ha). The former is the main water source for Nandankanan Zoological Park and State Botanical Garden. It support rich diversity of flora and fauna & is a veritable lab for wetland education. Therefore, it has been listed as a Wetlands of National importance by the Ministry of Environment, Forests and Climate Change, Government of India in the year 2006. The Zoological Park together with the Kanjia lake and the Botanical Garden has been declared as Nandankanan Wildlife Sanctuary over an area of 4.37 sq.km on 3<sup>rd</sup> August, 1979.

We have completed another outstanding year of biodiversity conservation, zoo management, research & education. Nandankanan has been very popular, as always, among the tourist & local habitants and attracted about 2.6 million visitors during the year 2019-20. Significant improvements were achieved in the infrastructure development, animal collection, care of rescued and infant animals, health care, fodder production and conservation research. Many zoo education and outreach activities including Celebration of World Wetlands Day, World Pangolin Day, World Wildlife Day, World Environment Day, International Tiger Day, International Vulture Awareness Day, Wildlife Week, World Elephant Day, International Tiger Day, Foundation Day, and World Veterinary Day etc. were organized during the year 2019-20. Many species of wild and exotic animals including Indian tiger, Black tufted marmoset, Mouse deer, Fore-horned antelope, Painted stork, Silver pheasant, Golden pheasant, Nilgiri langur, Sambar, Common mongoose, Indian pangolin

Barking deer, Hog deer, Blackbuck, Brow antlered deer, Spotted deer, Hippopotamus, Violet Turaco, Grey pelican, Emu, etc. have bred successfully in the Park 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. Out of which Indian Grey wolf enclosure and Exotic primate enclosure are newly constructed. Animal keeper sheds, renovation of CCTV cameras at different animal enclosures and visitor's path, renovation of ticket checking complex, renovation of toilets and sit out spots, are worth mentioning.

During the financial year 2019-20 we have welcomed 26 new animals of 9 species to the Zoo with objective of infusion of new blood line to the existing stock and also addition of new species to the zoo collection. However, we said final adieu to some precious animals of our Zoo, notably the Orangutan- Bini, Tigress- Priyanka, Elephant- Juli, Chandan, Kamala, Gouri, Leopard-Barsa and Suraj, Nilgiri langur and Asiatic lion- Pichhan who were very popular among visitors. These animals are now a part of Nandankanan's history.

There has been a substantial improvement in the field of health care as reflected in reduced annual death rate during the year 2019-20. This was possible due to sincere efforts by our staff in order to maintain highest standards of health care and animal husbandry practices and close cooperation with college of Veterinary Sciences and Animal Husbandry, Odisha University of Agriculture & Technology, Bhubaneswar and also with the valuable advice and guidance of the Health Committee and Technical Committee on important health care issues.

The Zoological Park has always been an outstanding centre for education and research. 11 publications on different aspects came out during the year in different national and international journals and periodicals and 2 numbers of books on various aspects of ex-situ conservation, health care and management of captive wild animals.

Information on various aspects of management and development of Nandankanan during the year 2019-20 has been provided in the present Annual Report. I would like to thank all my staff and officers for their dedication and hard work for one more successful year in the journey of Nandankanan. I am grateful to all who have helped and contributed in this journey form 1960 till date. I have to confidence to believe that Nandankanan will continue to grow as a world class zoo contributing significantly in the field of wildlife conservation, education and research in coming years.

Sri Shashi Paul , 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 net work 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
<b>Basic Information about the Zoo</b>		
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	<a href="mailto:nandankananzoo@yahoo.com">nandankananzoo@yahoo.com</a>
8	Website	<a href="http://www.nandankanan.org">www.nandankanan.org</a>
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)	Adult : 2245465 (including 890 differently abled persons-free entry)
		Children : 338983 (including 1120 free entry on wildlife week and children's day)
		Total Indian : 2628451
		Total Foreigners : 1105
		Total Visitors: 2629556
14	Visitors' Facilities Available in Zoo	<ul style="list-style-type: none"> <li>• Drinking water kiosks with RO facility</li> <li>• Free toilets at convenient locations</li> <li>• Special toilets, wheel chairs &amp; ramps for</li> </ul>

S.No.	Particulars	Information
		<p>differently abled persons</p> <ul style="list-style-type: none"> <li>• Rest areas / sit-outs / visitors' sheds at various locations.</li> <li>• Tourist cottages</li> <li>• Restaurant &amp; Snacks bar (run by OTDC)</li> <li>• Free cloak room near the entrance gate</li> <li>• Perambulator for children</li> <li>• First-aid (at zoo hospital, observatory &amp; administrative office)</li> <li>• Library</li> <li>• Emission free battery operated vehicles</li> <li>• Guide maps</li> <li>• Publications</li> <li>• Nature shop (Souvenir shop)</li> <li>• Children Park</li> <li>• Baby care center</li> </ul>
15	Weekly Closure Day of the Zoo	Monday
<b>Management Personnel of the zoo</b>		
16	Name with designation of the Officer in-charge	Mr Shashi Paul, Director
	Name of the Veterinary Officer	Dr Alok K Das
	Name of the Curator	Mr Anjan Kumar Mohanty
	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

S.No.	Particulars	Information
17	*Name of the Operator	Government of Odisha, Forests and Environment Department
18	Address of the Operator	Additional chief secretary to Govt, Forests and environment Dept, Odisha
19	Contact details/Phone number of Operator	0647-2536822
20	E-mail address of Operator	<a href="mailto:efsec.od@nic.in">efsec.od@nic.in</a>

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

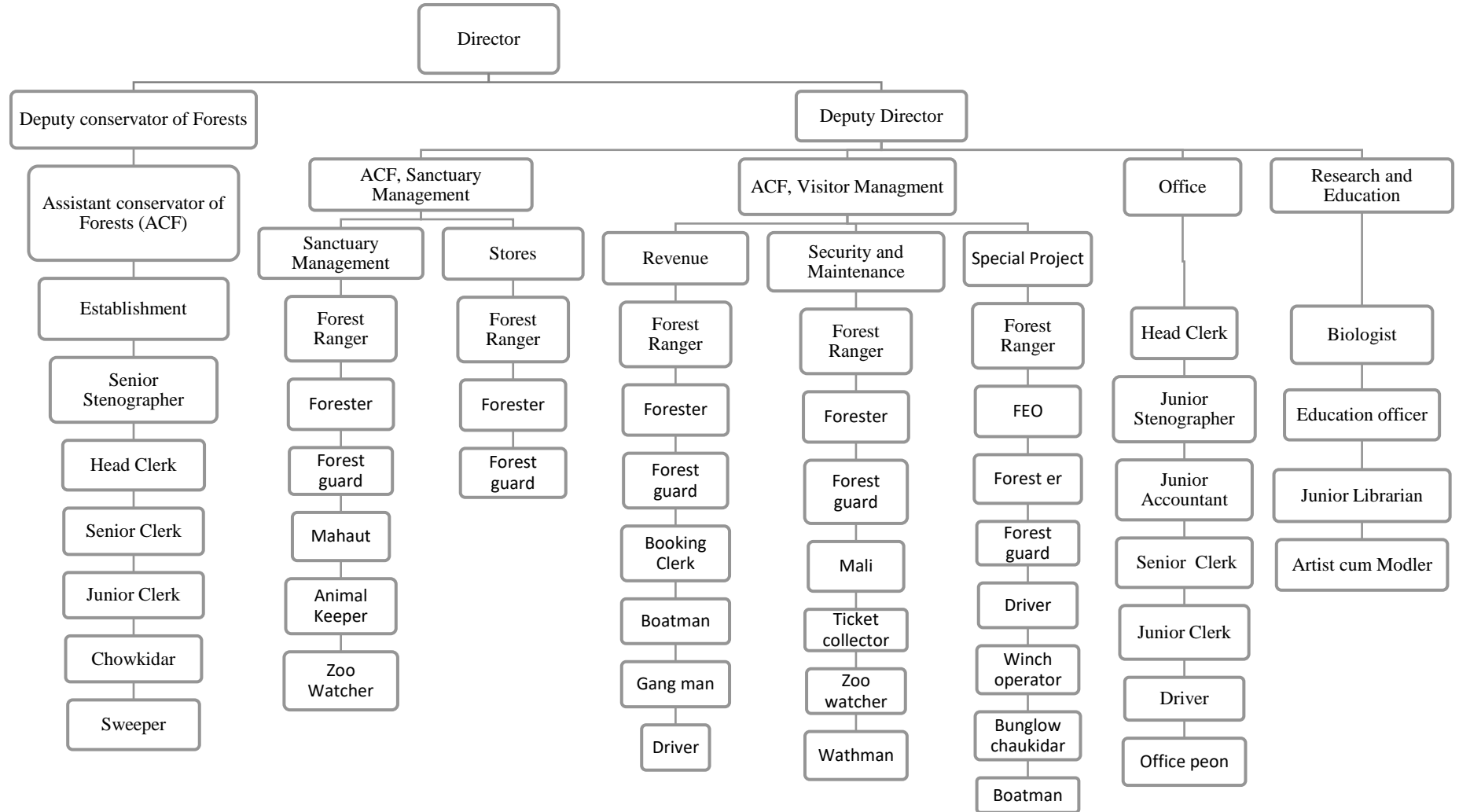
*“Zoo Operator” means the person who has ultimate control over the affairs of the zoos provided that\_\_\_\_\_*

*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**

<b>Sl.No.</b>	<b>Designation</b>	<b>Number of Sanctioned Posts</b>	<b>Number of the incumbent</b>
1	Director	1	-
2	D.C.F.	1	-
3	Forest Range Officer	1	-
4	Senior Steno	1	-
5	Senior Assistant	4	4
6	Junior Assistant	4	2
7	Driver	1	1
8	Office Chowkidar	1	1
9	Office Sweeper	1	-
10.	Office Peon	1	1
	<b>TOTAL</b>	<b>16</b>	<b>09</b>

#### **(B) Deputy Director Office, Nandankanan Zoological Park**

<b>Sl. No.</b>	<b>Name of each category of post</b>	<b>Sanctioned strength</b>	<b>No. of staff in position</b>
<b><u>Zoological Park</u></b>			
1	Deputy Director, NKZP	1	1
2	Sr Veterinary Officer	1	1
3	Assistant Conservator of Forests	3	3
4	Vet. Asst. Surgeon	1	1
5	Forest Ranger	8	5
6	Deputy Ranger	0	1
7	Forester	9	10
8	Forest Guard	25	16
9	Head Clerk	1	1
10	Biologist	1	1
11	Education Officer	1	1
12	Junior Accountant	5	3



13	Jr. Stenographer	1	1
14	Junior Clerk	4	3
15	Driver (L.V.)	4	2
16	Driver (H.V.)	3	2
17	Fitter-cum-Mechanic	1	0
18	Engine Driver	1	0
19	Livestock Inspector	3	2
20	Guide	1	0
21	Projector Operator	1	0
22	Booking Clerk	3	1
23	Artist-cum-Modeller	1	1
24	Junior Librarian	1	1
25	Khansama	1	1
26	Gangman	2	0
27	Sweeper	11	08
28	Animal Keeper	101	73
29	Office Peon/attendant	6	5
30	Mate	2	1
31	Mahout	03	2
32	Mali	5	3
33	Watchman	27	22
34	Boatman	2	0
35	Ticket Collector	10	6
36	Zoo Watcher	22	17
37	Bungalow Chowkidar	3	1
38	Winch Operator	1	1
39	Cook-cum-Animal feed Distributor	2	1
40	Welder-cum-Blacksmith	1	0
41	Assistant Mahout	8	0
<b>Total</b>		<b>295</b>	<b>198</b>

\*Please give above mentioned information in respect of all zoo personnel, from the Officer in-charge up to the Animal Keeper.

### **9. Capacity Building of zoo personnel:**

<b>Sl.No</b>	<b>Name and designation of the zoo personnel</b>	<b>Subject matter of Training</b>	<b>Period of Training</b>	<b>Name of the Institution where the Training attended</b>
1.	Dr Rajesh Kumar Mohapatra, Biologist, Sri Milan Kumar Panda, E.O, Sri Kumar Behera, Range Officer and Sri Arupa Kumar Rout, Forester, Nandankanan Zoological Park	Middle Level Official Training Programme, Conducted by CZA, New Delhi	16 <sup>th</sup> -18 <sup>th</sup> July, 2019	Hotel New Marrion, Bhubaneswar
2.	Dr Alok Kumar Das, SVO, and Dr Sudipta Kumar Panda, Range officer, Sanctuary Range, Nandankanan Zoological Park	International Seminar on Elephant Endotheliotropic Herpes Virus (EEHV)	28 <sup>th</sup> to 30 <sup>th</sup> November, 2019	Assam Agricultural University, Khanapara, Guwahati.
3.	Sri Sudipta Ku Panda, Range Officer, Sri Sujit Ku Jena, Forest Guard and Sri Sushant Ku Behera, Forest Guard	Tranquilization training programme	23 <sup>rd</sup> to 25 <sup>th</sup> February, 2020	Nandankanan Zoological Park, Bhubaneswar

### **10. Zoo Advisory Committee:**

a. **Date of constitution:** A Technical Committee was constituted on 22.08.2000.

#### **b. Members**

- Dr S. K. Roy, Prof. & HOD, Deptt. Of Medicine, Orissa, Veterinary college- Chairman
- Dr J.N. Mohanty, Retd. Prof. Surgery, Orissa Veterinary College and Regd. Director, Veterinary Services- Member
- Sri Sudhakar Mohapatra, IFS (Retd) (Former Chief Wildlife Warden, Odisha)- Member

- Dr L.N. Acharjyo, Veterinarian (Retd), At- MIG-7, Bermunda Housing Board Colony, Bhubaneswar- Member
- Conservator of Forests (WL) & Ex-Officio Director, Nandankanan Zoological Park, Bhubaneswar –Convenor

c. Dates on which Meetings held during the year: 20.05.2019, 21.09.2019 & 10.12.2019

### **11. Health Advisory Committee:**

**Date of constitution:** 21.08.2008-MoU signed with CVSc & AH, OUAT

#### **Members of Health Committee**

1. Dr N. Sahoo, Prof. Preventive medicine, CVSc & AH, OUAT, Coordinator
2. Dr I. Nath, Prof. Surgery, CVSc & AH, OUAT, Co-coordinator
3. Dr S.K. Panda, Prof. Pathology, CVSc & AH, OUAT, Co-coordinator

d. Dates on which Meetings held during the year:

01.04.2019, 28.05.2019, 29.05.2019, 24.07.2019, 09.08.2019, 16.08.2019, 10.09.2019, 18.09.2019, 13.10.2019, 14.02.2020, 07.03.2020 & 14.03.2020

### **12. Statement of income and expenditure of the Zoo**

	<b>Rs. In Lakhs</b>						
<b>2019-20</b>	<b>NON-PLAN (AEOM)</b>	<b>STATE PLAN (PE)</b>	<b>CENTRAL PLAN</b>	<b>CSS-IDWH</b>	<b>CZA</b>	<b>CAMPA</b>	<b>Society Fund</b>
<b>Allotment</b>	115.927	46.15	NIL	11.0	12.80	242.080	1846.00
<b>Expenditure</b>	114.056	46.15	NIL	11.0	9.82	177.053	1369.55

### 13. Daily feed Schedule of animals

SL.NO	SPECIES	FOOD ITEM	Quantity		Day of fasting
			Winter	Summer	
1	BUDGERIGAR	MILLET MIX (COMMON,RED,WHITE) PADDY GREEN SAG EGG (BOILED) (FOR GROUP OF 50 BIRDS) CUTTLE FISH BONE (MONDAYS)	0.025 0.010 0.005 1 NO 0.005	0.025 0.010 0.005 1 NO 0.005	<b>NO</b>
2	CANARY	MILLET MIX (COMMON,RED,WHITE) PADDY GREEN SAG CUTTLE FISH BONE (MONDAYS)	0.010 0.010 0.005 0.002	0.010 0.010 0.005 0.002	<b>NO</b>
3	COCKATIEL, WHITE/ CINNAMON PEARS PIED	BENGAL GRAM (soaked) MILLET MIX (COMMON,RED,WHITE) PADDY GREEN SAG ONION SEED MIX (SUNFLOWER/SAFFLOWER) EGG BOILED (FOR THE GROUPOF 10) CUTTLE FISH BONE (MONDAYS)	0.010 0.020 0.010 0.025 0.010 0.010 1 NO 0.002	0.010 0.020 0.010 0.025 0.010 0.010 1 NO 0.002	<b>NO</b>

4	COCKATOO, LESSER/ SULPHUR CRESTED/ UMBRELLA	APPLE EGG (BOILED) GROUND NUT GRAPE RIPE BANANA BENGAL GRAM(SOAKED) SEED MIX (SUNFLOWER/SAFFLOWER) RIPE PAPAYA GREEN MAIZE WITH SPIKE (SEP-OCT) RIPE GUAVA (SEP-OCT)	0.030 ½ NO 0.030 0.030 0.030 0.015 0.020 0.050 0.050 0.050	0.030 ½ NO 0.030 0.030 0.030 0.015 0.020 0.050	<b>NO</b>
5	CONURE, BROWN THROATED/ JANDAYA / SUN/PINEAPPLE/ YELLOW SIDED	APPLE BENGAL GRAM(SOAKED) GROUND NUT GRAPE GREEN SAG RIPE PAPAYA SEED MIX (SUNFLOWER/SAFFLOWER) GREEN MAIZE WITH SPIKE (SEP-OCT) RIPE GUAVA (SEP-OCT) PINEAPPLE (MAY-JULY)	0.030 0.005 0.025 0.015 0.025 0.030 0.010 0.050 0.050	0.030 0.005 0.025 0.015 0.025 0.030 0.010 0.050 0.025	<b>NO</b>
6	CRANE, SARUS	KERANDI FISH PULSES & GRAIN FEED BENGAL GRAM (SOAKED)	0.250 0.150 0.050	0.250 0.150 0.050	<b>NO</b>
7	DOVE, BARBARY/ LAUGHING/RING NECKED	POULTRY FEED PULSES & GRAIN FEED GREEN SAG BOILED EGG	0.010 0.050 0.010 ½ NO	0.010 0.050 0.010 ½ NO	<b>NO</b>
8	DOVE, SPOTTED/EMERALD	POULTRY FEED PULSES & GRAIN FEED GREEN SAG BOILED EGG MUSTARD	0.010 0.030 0.010 ½ NO 0.005	0.010 0.030 0.010 ½ NO 0.005	<b>NO</b>

9	DOVE, DIAMOND	MILLET MIX (COMMON,RED,WHITE) PADDY PULSES & GRAIN FEED GREEN SAG CUTTLE FISH BONE (MONDAYS) BOILED EGG	0.010 0.005 0.030 0.005 0.002 1/2NO	0.010 0.005 0.030 0.005 0.002 1/2NO	<b>NO</b>
10	DUCK, MANDARIN	DUB GRASS GREEN SAG PADDY POULTRY FEED PULSES & GRAIN FEED WHEAT, SOAKED BENGAL GRAM, SOAKED	0.020 0.030 0.010 0.050 0.060 0.025 0.025	0.020 0.030 0.010 0.050 0.060 0.025 0.025	<b>NO</b>
11	EGRET, LITTLE/MEDIAN/ CATTLE/ LARGE	GADISHA FISH KERANDI FISH	0.200 0.100	0.200 0.100	<b>NO</b>
12	EMU	BENGAL GRAM CHHATU BENGAL GRAM,SOAKED EGG (BOILED) GARLIC GREEN SAG ONION RIPE BANANA GRAPES	0.200 0.300 1NO 0.010 0.250 0.050 0.200 0.050	0.200 0.300 1NO 0.010 0.250 0.050 0.200 0.050	<b>NO</b>
13	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 0.010 0.005 1NO 0.002	0.010 0.010 0.005 1NO 0.002	<b>NO</b>
14	HORNBILL, GREY/ ORIENTAL PIED	RIPE BANANA GRAPE GOAT LIVER BENGAL GRAM CHHATU	0.100 0.050 0.050 0.050	0.100 0.050 0.050 0.050	<b>NO</b>

15	HERON, GREY/NIGHT	KERANDI FISH	0.100	0.100	<b>NO</b>
16	HILL MYNAH	BENGAL GRAM CHHATU RIPE BANANA APPLE GRAPE	0.025 0.050 0.025 0.025	0.025 0.050 0.025 0.025	<b>NO</b>
17	IBIS (BLACK/ WHITE)	KERANDI FISH	0.300	0.300	<b>NO</b>
18	JUNGLE FOWL, RED	BENGAL GRAM (SOAKED) 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	0.050 0.050 0.030 0.020 0.005 0.010 5NO 1NO	<b>NO</b>
19	KITE, BRAHMINY	KERANDI FISH DAY OLD CHICKS/WHITE MICE	0.250 1NO	0.250 1NO	<b>NO</b>
20	KITE, BLACK	KERANDI FISH BUFFALO MEAT DAY OLD CHICK/WHITE MICE	0.050 0.200 1NO	0.050 0.200 1NO	<b>NO</b>
21	KOEL	GOAT MEAT KIMA BENGAL GRAM CHHATU RIPE BANANA GRAPE	0.025 0.025 0.050 0.025	0.025 0.025 0.050 0.025	<b>NO</b>
22	LOVE BIRD (FISCHERS/ PEACH-FACED/MASKED)	BENGAL GRAM,SOAKED MILLET MIX (COMMON,RED,WHITE) PADDY GROUND NUT GREEN SAG SEED MIX (SUNFLOWER/SAFFLOWER CUTTLE FISH BONE (MONDAYS)	0.010 0.020 0.010 0.010 0.030 0.010 0.002	0.010 0.020 0.010 0.010 0.030 0.010 0.002	<b>NO</b>
23	LORIKEET, BLUE FACED/ SWAINSON' S	APPLE BENGAL GRAM,SOAKED	0.050 0.010	0.050 0.010	<b>NO</b>



		RIPE PAPAYA GRAPE GREEN SAG RIPE BANANA RIPE GUAVA (SEPT-OCT) GREEN MAIZE WITH SPIKE (SEP-OCT)	0.050 0.025 0.030 0.050 0.050 0.050	0.050 0.025 0.030 0.050	
24	LORRY, YELLOW BACKED / RED CHATTERING	APPLE BENGAL GRAM,SOAKED GRAPE HONEY GREEN SAG RIPE BANANA RIPE PAPAYA RIPE GUAVA (SEPT-OCT) GREEN MAIZE WITH SPIKE (SEP-OCT)	0.050 0.010 0.025 0.005 0.030 0.050 0.050 0.050 0.050	0.050 0.010 0.025 0.005 0.030 0.050 0.050	<b>NO</b>
25	MACAW, GREEN WINGED/ BLUE & YELLOW	APPLE BENGAL GRAM (SOAKED) PISTACHIO WITH SHELL GRAPE SEED MIX (SUNFLOWER/SAFFLOWER) RIPE BANANA GREEN PEA POD (DEC-FEB) CUSTARD APPLE (SEPT-OCT) GREEN MAIZE WITH SPIKE (SEP-OCT) WATER MELON (APR-MAY) RIPE GUAVA (SEP-OCT)	0.050 0.015 0.010 0.030 0.015 0.050 0.100 0.050 0.050 0.050	0.050 0.015 0.010 0.030 0.015 0.050  0.050	<b>NO</b>
26	MUNIA (RED/BLACK HEAD/SPOTTED)	MILLET MIX (COMMON,RED,WHITE) CUTTLE FISH BONE (MONDAYS) PADDY GREEN SAG	0.010 0.002 0.010 0.010	0.010 0.002 0.010 0.010	<b>NO</b>
27	OWL (BARN/ ORIENTAL SCOPS)	DAY OLD CHICK WHITE MICE	1NO 1NO	1NO 1NO	<b>NO</b>

28	OWL, BROWN FISH	DAY OLD CHICK WHITE MICE KERANDI FISH	2NO 2NO 0.100	2NO 2NO 0.100	<b>NO</b>
29	PARAKEET, (MOUSTACHED/ ROSE RINGED/ BLOSSOM HEADED/ ALEXANDRINE/RING NECKED	BENGAL GRAM,SOAKED SEED MIX (SUNFLOWER/SAFFLOWER) GROUNDNUT APPLE GREEN SAG MAIZE RIPE BANANA RIPE PAPAYA GREEN MAIZE WITH SPIKE (SEP-OCT) RIPE GUAVA (SEPT-OCT) WATER MELON (APR-MAY) GREEN PEA POD (DEC-FEB)	0.010 0.010 0.010 0.020 0.020 0.010 0.015 0.025 0.025 0.025 0.010	0.010 0.010 0.010 0.020 0.020 0.010 0.015 0.025 0.025 0.025 0.010	<b>NO</b>
30	PEAFOWL, INDIAN	BENGAL GRAM,SOAKED 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	0.050 0.050 0.005 0.100 0.050 0.040 0.040 0.050	<b>NO</b>
31	PELICAN, GREY/ROSY	GADISHA FISH	1.000	1.000	<b>NO</b>
32	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	0.010 0.050 0.020 0.050 0.050 ½ NO 5NO	<b>NO</b>

33	ROSELLA, EASTERN	APPLE BENGALGRAM,SOAKED MILLET MIX (COMMON,RED,WHITE) OAT GREEN SAG GROUND NUT RIPE BANANA SEED MIX (SUNFLOWER/SAFFLOWER) RIPE PAPAYA GREEN MAIZE WITH SPIKE (SEP-OCT) RIPE GUAVA (SEPT-OCT) PINE-APPLE (MAY-JULY) WATER MELON (APR-MAY)	0.050 0.010 0.010 0.010 0.025 0.030 0.050 0.010 0.025 0.050 0.050	0.050 0.010 0.010 0.010 0.025 0.030 0.050 0.010 0.025 0.050 0.025 0.050	<b>NO</b>
34	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	0.010 0.010 0.010 1NO 0.005	<b>NO</b>
35	SPOON BILLED, WHITE EURASIAN	GADISHA FISH	0.300	0.300	<b>NO</b>
36	STORK, OPEN BILLED	SNAIL SHELL KERANDI FISH	0.400 0.100	0.400 0.100	<b>NO</b>
37	STORK, PAINTED	GADISHA FISH	0.300	0.300	<b>NO</b>
38	STORK, WHITE NECK	GADISHA FISH	0.250	0.250	<b>NO</b>
39	STORK, LESSER ADJUTANT	GADISHA FISH DAY OLD CHICK	0.200 2NO	0.200 2NO	<b>NO</b>
40	SIKRA	DAY OLD CHICKS WHITE MICE	1NO 1NO	1NO 1NO	<b>NO</b>
41	SWAN, BLACK	BLACK SWAN FEED GREEN SAG BENGAL GRAM (SOAKED) WHEAT (SOAKED)	0.250 0.250 0.100 0.100	0.250 0.250 0.100 0.100	<b>NO</b>
42	VULTURE, CINEREOUS	FRESHLY KILLED CHICKEN	1NO	1NO	<b>NO</b>

43	VULTURE, WHITE BACKED/ LONG BILLED	FRESHLY KILLED CHICKEN	½ NO	½ NO	<b>NO</b>
44	HIMALAYAN GRIFFON	FRESHLY KILLED CHICKEN	1 NO	1 NO	<b>NO</b>
45	OSTRICH	LUCERN GRASS/ DHANIA SAG OSTRICH FEED BOILED EGG (WITH SHELL)	1.000 1.500 2NO	1.000 1.500 2NO	<b>NO</b>
46	PARROT, AFRICAN GREY	APPLE BENGAL GRAM (SOAKED) 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	0.030 0.015 0.030 0.030 0.010 0.050 0.050  0.050	<b>NO</b>
47	PARROT, MEYER'S/ RED BELLIED	APPLE BENGAL GRAM (SOAKED) BEANS GRAPES POMEGRANATE MILLET MIX SUNFLOWER SEED PADDY RIPE PAPAYA	0.030 0.015 0.030 0.020 0.020 0.020 0.010 0.010 0.050	0.030 0.015 0.030 0.020 0.020 0.020 0.010 0.010 0.050	<b>NO</b>
48	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 0.025 0.050 0.025 0.050 0.050  0.050	<b>NO</b>

49	ANTELOPE, FOUR HORNED	COMMON GRASS DEER MASH DEER FODDER BENGAL GRAM SOAKED BIRIDAL SOAKED RIPE BANANA RIPE PUMPKIN JHUDANGA	1.000 0.500 1.000 0.100 0.100 0.100 0.100 0.100	1.000 0.500 1.000 0.100 0.100 0.100 0.100	<b>NO</b>
50	BEAR, HIMALAYAN BLACK	BIRIDAL HONEY MILK RICE (PAR BOILED) RIPE PUMPKIN RIPE BANANA WATER MELON (APR-MAY) CARROT (OCT-MARCH) SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (SEP-OCT) BOILED EGG (NOV-FEB) 2 NO.	0.100 0.025 0.100 0.800 0.350 0.350  0.250 0.250 0.200 2NO	0.100 0.025 0.100 0.800 0.350 0.350 0.500      	<b>NO</b>
51	BEAR, SLOTH	BIRIDAL HONEY MILK RICE (PAR BOILED) RIPE PUMPKIN RIPE BANANA WATER MELON (APR-MAY) SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (SEP-OCT) CARROT (OCT-MARCH) BOILED EGG (NOV- FEB)	0.100 0.025 0.100 0.700 0.300 0.300  0.250 0.200 0.100 2NO	0.100 0.025 0.100 0.700 0.300 0.300 0.500      	<b>NO</b>
52	BLACK BUCK	COMMON GRASS DEER MASH DEER FODDER	1.000 0.500 1.000	1.000 0.500 1.000	<b>NO</b>

		RIPE PUMPKIN	0.100	0.100	
		JHUDANGA	0.100	0.100	
53	BABOON, HAMADRYAS	GROUND NUT	0.050	0.050	<b>NO</b>
		APPLE	0.200	0.200	
		BRINJAL	0.100	0.100	
		LADIES FINGER	0/050	0/050	
		EGG (BOILED)	1NO	1NO	
		BEAN	0.050	0.050	
		MILK	0.010	0.010	
		RICE (PAR BOILED)	0.050	0.050	
		RIPE BANANA	0.250	0.250	
		GRAPE	0.100	0.100	
		CARROT (OCT-MARCH)	0.200		
		KANKADA (JUNE-SEPT)		0.100	
		AMLA (NOV-DEC)	0.025		
		SWEET POTATO (OCT-MAR)	0.050		
		GREEN MANGO (APR-MAY)		0.050	
		PINE-APPLE (MAY-JUL)		0.100	
		WATER MELON (APR-MAY)		0.150	
54	CAT, JUNGLE	CHICKEN DRESSED	0.400	0.400	<b>NO</b>
55	CAT, LEOPARD	CHICKEN DRESSED	0.300	0.300	<b>NO</b>
56	CAT, FISHING	CHICKEN DRESSED	0.250	0.250	<b>NO</b>
		KERADI FISH	0.250	0.250	
57	CHIMPANZEE	APPLE	0.300	0.300	<b>NO</b>
		BENGAL GRAM WHOLE	0.100	0.100	
		CUCUMBER	0.200	0.200	
		EGG (BOILED)	1 NO	1 NO	
		BEAN	0.050	0.050	
		GRAPE	0.200	0.200	
		MILK	0.150	0.150	
		TOMATO	0.100	0.100	
		RICE (PAR BOILED)	0.200	0.200	
		GREEN SAG	0.200	0.200	

		RIPE BANANA	0.300	0.300	
		BEDANA	0.200	0.200	
		HONEY	0.025	0.025	
		CARROT (OCT-MAR)	0.100		
		KHAJARA	0.050	0.050	
		PINE-APPLE (MAY-JUL)		0.100	
		WATER MELON (APR-MAY)		0.500	
		RIPE GUAVA (SEPT-OCT)	0.050		
		GREEN COCONUT (APR-JUN)		2NO	
		CUSTARD APPLE (SEPT-OCT)		0.400	
		RIPE PAPAYA	0.400	0.400	
		PALANGA SAG (DEC-FEB)	0.100		
		ORANGE (NOV-MAR)	0.150		
		AMLA (NOV-DEC)	0.100		
		GARLIC	0.010	0.010	
		ONION	0.030	0.030	
58	CIVET, COMMON PALM	RICE (PAR BOILED)	0.010	0.010	<b>NO</b>
		CHICKEN MEAT KIMA	0.100	0.100	
		MILK	0.005	0.005	
		KERANDI FISH	0.050	0.050	
		RIPE BANANA	0.250	0.250	
59	CIVET, SMALL INDIAN	RICE (PAR BOILED)	0.050	0.050	<b>NO</b>
		CHICKEN MEAT KIMA	0.050	0.050	
		MILK	0.005	0.005	
		KERANDI FISH	0.050	0.050	
		RIPE BANANA	0.200	0.200	
60	BAT, FRUIT	RIPE BANANA	0.150	0.150	<b>NO</b>
		APPLE	0.050	0.050	
		RIPE PAPAYA	0.100	0.100	
		GRAPE	0.025	0.025	
61	DEER, BARKING	COMMON GRASS	1.000	1.000	<b>NO</b>
		DEER MASH	0.500	0.500	
62	DEER, MOUSE	RIPE BANANA	0.250	0.250	<b>NO</b>



		GREEN SAG RIPE PUMPKIN LADIES FINGER BEAN KANKADA (JUNE-SEPT) CARROT (OCT-MAR) SWEET POTATO (OCT-MAR)	0.050 0.050 0.100 0.125 0.125 0.100	0.050 0.050 0.100 0.125 0.025	
63	DEER, SAMBAR ADULT, 1YR ABOVE	COMMON GRASS DEER MASH RIPE BANANA (FOR THE GROUP) DEER FODDER	12.000 2.500 2.000 2.000	12.000 2.500 2.000 2.000	<b>NO</b>
	DEER, SAMBAR SUB-ADULT, 2MONTHS-1 YEAR	COMMON GRASS DEER MASH DEER FODDER	8.000 1.750 1.000	8.000 1.750 1.000	<b>NO</b>
64	DEER, SPOTTED ADULT, 1YR ABOVE	COMMON GRASS DEER MASH DEER FODDER	2.000 1.000 1.000	2.000 1.000 1.000	<b>NO</b>
	DEER, SPOTTED SUB-ADULT 2MONTHS- 1YEAR	DEER MASH COMMON GRASS DEER FODDER	0.750 1.000 1.000	0.750 1.000 1.000	<b>NO</b>
65	DEER,SWAMP ADULT, 1YR ABOVE	COMMON GRASS DEER MASH PARA GRASS RIPE BANANA (FOR THE GROUP)	10.000 1.500 3.000 1.000	10.000 1.500 3.000 1.000	<b>NO</b>
	DEER, SWAMP SUB-ADULT 2MONTHS-1YR	COMMON GRASS DEER MASH PARA GRASS	5.000 1.000 1.500	5.000 1.000 1.500	<b>NO</b>
66	DEER, BROW ANTLERED, MANIPURI	BENGAL GRAM WHOLE DEER FODDER WHEAT BRAN (CHOKAD) NB21 CARROT (OCT-MAR) RIPE BANANA	0.600 5.000 1.000 10.000 0.200 0.200	0.600 5.000 1.000 10.000 0.200 0.200	<b>NO</b>

		BLACK SALT	0.020	0.020	
		JHUDANGA	0.200	0.200	
67	DEER, HOG	WHEAT BRAN	0.250	0.250	<b>NO</b>
		BENGAL GRAM (SOAKED)	0.250	0.250	
		COMMON GRASS	1.000	1.000	
		DEER FODDER	1.000	1.000	
68	ELEPHANT (ADULT)	WHEAT	5.000	5.000	<b>NO</b>
		COMMON GRASS	50.000	50.000	
		ELEPHANT FODDER	50.000	50.000	
		NB21	75.000	75.000	
		PARA GRASS	75.000	75.000	
		TURMERIC WHOLE	0.050	0.050	
		MOLASES	0.300	0.300	
		COMMON SALT	0.150	0.150	
		COCONUT	1NO	1NO	
		STRAW	1.500	1.500	
		CASTOR OIL	0.100	0.100	
		BAMBOO LEAVES (JULY-OCT)		10.000	
		SUGARCANE (JAN-MARCH)	20.000		
		WATER MELON (APR-MAY)		4.000	
	ELEPHANT, SUB-ADULT	WHEAT	3.500	3.500	<b>NO</b>
		COMMON GRASS	20.000	20.000	
		ELEPHANT FODDER	30.000	30.000	
		NB21	30.000	30.000	
		PARA GRASS	30.000	30.000	
		TURMERIC WHOLE	0.025	0.025	
		MOLASES	0.250	0.250	
		COMMON SALT	0.050	0.050	
		COCONUT	1NO	1NO	
		STRAW	1.500	1.500	
		CASTOR OIL	0.050	0.050	
		BAMBOO LEAVES (JULY-OCT)		5.000	
		SUGARCANE (JAN-MARCH)	5.000		

		WATER MELON (APR-MAY)		4.000	
69	GIRAFFE	WHEAT, SOAKED	1.000	1.000	<b>NO</b>
		BENGAL GRAM, SOAKED	1.000	1.000	
		MUNG, SOAKED	1.000	1.000	
		DEER MASH	1.250	1.250	
		FRESH RIPE BANANA	5.000	5.000	
		CUCUMBER	6.000	6.000	
		TOMATO	0.500	0.500	
		ONION	0.250	0.250	
		COMMON SALT	0.050	0.050	
		TREE FODDER (OSTA/BARA)	30.000	30.000	
		NB21	5.000	5.000	
		GREEN SAG	2.000	2.000	
		JHUDANGA	1.500	1.500	
		RIPE PUMPKIN	2.000	2.000	
		GARLIC	0.025	0.025	
		SWEET POTATO (OCT-MAR)	1.000		
		CARROT (OCT-MAR)	2.000		
70	GAUR	BALCK GRAM, SOAKED	0.250	0.250	<b>NO</b>
		WHEAT BRAN	2.000	2.000	
		DEER MASH	5.000	5.000	
		MOLASSES	0.050	0.050	
		PARA GRASS	15.000	15.000	
		NB21	15.000	15.000	
		TREE FODDER (OSTA)	5.000	5.000	
		RIPE BANANA	0.500	0.500	
71	GIANT SUIRREL	BENGAL GRAM	0.050	0.050	<b>NO</b>
		APPLE	0.050	0.050	
		GRAPE	0.025	0.025	
		BREAD	0.100	0.100	
		RIPE BANANA	0.100	0.100	
		GREEN PEA POD (DEC-FEB)	0.050	0.050	
		RIPE GUAVA(SEP-OCT)	0.100	0.100	

72	HARE, INDIAN	DUBA GRASS GREEN SAG PUMPKIN BEAN CARROT (OCT-MAR) 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	0.100 0.100 0.050 0.050  0.050  0.025 0.025	<b>NO</b>
73	HIPPOPOTAMUS ADULT, 2 ½ YRS ABOVE	BENGAL GRAM WHOLE PUMPKIN CABBAGE GREEN SAG MINERAL MIXTURE CHOKAD (WHEATBRAN) COMMON SALT RIPE BANANA PARA GRASS	2.000 1.000 2.000 1.000 0.100 5.000 0.100 1.000 50.000	2.000 1.000 2.000 1.000 0.100 5.000 0.100 1.000 50.000	<b>NO</b>
	HIPPOPOTAMUS SUB-ADULT 6MONTHS-2 ½ YRS	BENGAL GRAM WHOLE PUMPKIN CABBAGE GREEN SAG MINERAL MIXTURE CHOKAD (WHEATBRAN) COMMON SALT RIPE BANANA PARA GRASS	1.000 0.500 1.000 0.500 0.050 2.500 0.100 0.500 20.000	1.000 0.500 1.000 0.500 0.050 2.500 0.100 0.500 20.000	<b>NO</b>
74	HYENA	BUFFALO MEAT	2.000	2.000	MONDAY
75	JACKAL	BUFFALO MEAT	1.000	1.000	MONDAY
76	LEOPARD, ADULT (ABOVE 1 ½ YEAR)	BUFFALO MEAT	4.000	4.000	MONDAY

	LEOPARD, SUB-ADULT (1-1½ YEARS)	BUFFALO MEAT	3.000	3.000	MONDAY
	LEOPARD, JUVENILE (6MONTHS-1 YEAR)	BUFFALO MEAT	1.000	1.000	<b>NO</b>
77	LION, ASIATIC/HYBRID/AFRICAN ADULT, ABOVE 2 ½ YR	BUFFALO MEAT	9.000	9.000	MONDAY
	LION, SUB ADULT (1 YEAR – 2 ½ YEARS)	BUFFALO MEAT	6.000	6.000	MONDAY
	LION, JUVENILE (6 MONTHS – 1 YEAR)	BUFFALO MEAT	3.000	3.000	MONDAY
	CUB (3 MONTHS TO 6 MONTHS)	CHICKEN (DRESSED, BONE LESS)	1 NO	1 NO	<b>NO</b>
78	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 (SEP-OCT) WATER MELON (APR-MAY)	0.050 0.050 0.050 0.050 0.010 0.050 0.250 0.050 0.100	0.050 0.050 0.050 0.050 0.010 0.050 0.250 0.050 0.100 0.150	<b>NO</b>
79	MACAQUE, BONNET ADULT (1 ½ YEAR ABOVE)	BENGAL GRAM WHOLE BRINJAL LADIES FINGER BREAD GROUND NUT BEAN	0.050 0.100 0.050 0.030 0.050 0.050	0.050 0.100 0.050 0.030 0.050 0.050	<b>NO</b>

		MILK RICE (PAR BOILED) RIPE BANANA GREEN PEA POD (DEC-FEB) SWEET POTATO (OCT-MAR) GREEN MANGO (APR-MAY) GREEN MAIZE WITH SPIKE (SEP-OCT) PINE-APPLE (MAY-JUL) WATER MELON (APR-MAY)	0.010 0.050 0.250 0.050 0.100     0.050 0.100 0.100 0.150	0.010 0.050 0.250   0.050 0.100 0.100 0.150	
	MACAQUE, BONNET SUB-ADULT	BENGAL GRAM WHOLE BRINJAL LADIES FINGER BREAD 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 (SEP-OCT) PINE-APPLE (MAY-JUL) WATER MELON (APR-MAY)	0.025 0.050 0.025 0.015 0.025 0.025 0.005 0.025 0.125 0.050 0.050     0.025 0.050 0.050 0.075	0.025 0.050 0.025 0.015 0.025 0.025 0.005 0.025 0.125     0.025 0.050 0.050 0.075	<b>NO</b>
80	MACAQUE, RHESUS	BENGAL GRAM WHOLE BRINJAL LADIES FINGER BREAD GROUND NUT BEAN MILK RICE (PAR BOILED) RIPE BANANA	0.050 0.100 0.050 0.030 0.050 0.050 0.010 0.050 0.250	0.050 0.100 0.050 0.030 0.050 0.050 0.010 0.050 0.250	<b>NO</b>

		SWEET POTATO (OCT-MAR) GREEN MAIZE WITH SPIKE (SEP-OCT) WATER MELON (APR-MAY) GREEN PEA POD (DEC-FEB)	0.100   0.050	0.100 0.150	
81	MONGOOSE COMMON	GADISHA FISH	0.150	0.150	<b>NO</b>
82	NILGAI ADULT, 1YR ABOVE	COMMON GRASS DEER MASH DEER FODDER RIPE BANANA ( FOR THE GROUP)	15.000 2.500 3.000 4.000	15.000 2.500 3.000 4.000	<b>NO</b>
	SUB ADULT (6 MONTHS – 1 YEAR)	COMMON GRASS DEER MASH DEER FODDER	10.000 2.500 2.000	10.000 2.500 2.000	<b>NO</b>
83	ORANG UTAN	GREEN SAG TAMATO RIPE BANANA CUCUMBER APPLE BOILED EGG BEAN GRAPE AMUL SPRAY CARROT (OCT-MAR) PINE-APPLE (MAY-JUL) WATER MELON (APR-MAY) RIPE GUAVA (SEPT-OCT) GREEN COCOANUT (APR-JUN) CUSTARD APPLE (SEPT-OCT) RIPE PAPAYA PALANG SAG (DEC-FEB) ORANGE (NOV-MAR) KANKAD (JUNE-SEPT) AMLA (NOV-DEC) GARLIC	0.500 0.200 1.500 0.400 0.300 1NO 0.100 0.100 0.050 0.200    0.400 0.100 0.150  0.100 0.015	0.500 0.200 1.500 0.400 0.300 1NO 0.100 0.100 0.050  0.100 0.500 0.050 2NO 0.400 0.400   0.125 0.015	<b>NO</b>

		ONION	0.050	0.050	
84	PANGOLIN, INDIAN	RED WEAVER ANT EGGS BOILED EGG	0.600 ½ NO	0.600 ½ NO	<b>NO</b>
85	PORCUPINE	BENGAL GRAM WHOLE BRINJAL GROUND NUT BEAN MAIZE 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	0.050 0.050 0.100 0.010 0.050 0.010 0.100 0.150 0.050	<b>NO</b>
86	RATEL	HONEY GOAT MEAT RIPE BANANA BUFFALO MEAT	0.020 0.100 0.200 0.400	0.020 0.100 0.200 0.400	<b>NO</b>
87	TIGER ADULT, 2 ½ YR ABOVE	BUFFALO MEAT	10.000	10.000	<b>Monday</b>
	TIGER, SUB ADULT 1YR-2 ½ YR	BUFFALO MEAT	6.000	6.000	<b>Monday</b>
	TIGER, JUVENILE 6MN- 1YR	BUFFALO MEAT	3.000	3.000	<b>Monday</b>
	TIGER, CUB 3MN-6MN	CHICKEN (DRESSED, BONELESS)	1NO	1NO	<b>Monday</b>
88	WILD BOAR	WILD BOAR MASH RIPE PUMPKIN SWEET POTATO (OCT-MAR)	1.000 0.500 0.250	1.000 0.500	<b>NO</b>
89	WHITE BUCK	TREEN FODDER DEER MASH	1.000 0.750	1.000 0.750	<b>NO</b>



		RIPE PUMPKIN	0.100	0.100	
		JHUDANGA	0.100	0.100	
		MOLASSES	0.050	0.050	
90	LANGUR, NILGIRI	APPLE	0.250	0.250	<b>NO</b>
		RICE (PAR BOILED)	0.030	0.030	
		RIPE BANANA	0.200	0.200	
		ORANGE(NOV-MAR)	0.100		
		RIPE GUAVA	0.100	0.100	
		BENGAL GRAM	0.015	0.015	
		CABAGGE	0.030	0.030	
		GREEN SAG	0.100	0.100	
		BOILED EGG	1NO	1NO	
		BEANS	0.050	0.050	
		CARROT (OCT-MAR)	0.050		
		GRAPE	0.050	0.050	
		HONEY	0.010	0.010	
		AMLA (NOV-DEC)	0.020		
		CUCUMBER	0.030	0.030	
		CUSTARD APPLE (SEP-OCT)		0.100	
		POMEGRANATE	0.125	0.125	
91	BOA RED SAND / BOA COMMON SAND	WHITE MICE /RAT (ON MONDAY)	2NO	2NO	<b>Sunday to Saturday</b>
92	CROCODILE, MORLETE	ROHI FISH BUFFALO MEAT	0.500 1.000	0.500 1.000	<b>Monday</b>
93	CROCODILE, SIAMEASE	ROHI FISH BUFFALO MEAT	0.500 1.000	0.500 1.000	<b>Monday</b>
94	CROCODILE, LONG SNOUTED/GHARIAL ADULT(5 YEARS ABOVE)	ROHI FISH	1.500	1.500	<b>Monday</b>
	SUB-ADULT (2- 5 YEARS)	ROHI FISH	1.000	1.000	<b>Monday</b>
	JUVENILE (1 MONTH – 2 YEARS)	GADISHA FISH	0.300	0.300	<b>NO</b>
95	CROCODILE, MUGGER	BUFFALO MEAT	1.000	1.000	<b>Monday</b>

96	CROCODILE, DWARF CAIMON	FISH FINGERLINGS (LIVE) (ON TUESDAY, THURSDAY, SATURDAY OF EVERY WEEK)	0.250	0.250	<b>Monday, Wednesday, Thursday, Sunday</b>
97	CROCODILE, SALT WATER	BUFFALO MEAT	1.000	1.000	Monday
98	COBRA, KING	RAT SNAKE (MONDAY)	1NO	1NO	<b>NO</b>
99	COBRA, MONOCELLATE/ BINOCELLATE	RAT (MONDAY) DAY OLD CHICK (MONDAY) GADISHA FISH	1NO 1NO 0.050	1NO 1NO 0.050	<b>NO</b>
100	INDIAN CHAMELION	GRASS HOPPER	10 NO.S	10 NO.S	<b>NO</b>
101	IGUANA	LEUTIA SAG PALANG SAG(DEC-FEB) FENUGREEK LEAVES DRUMDTICK LEAVES CORIANDER LEAVES APPLE BANANA RIPE PAPAYA POMEGRANATE RIDGE GOURD CAPSICUM CUCUMBER LADIES FINGER	0.020 0.020 0.020 0.020 0.020 0.010 0.010 0.010 0.010 0.010 0.005 0.005 0.010 0.010	0.020  0.020 0.020 0.020 0.010 0.010 0.010 0.010 0.005 0.005 0.010 0.010	<b>NO</b>
102	KRAIT, BANDED	RAT SNAKE OR RAT/MICE	1 NO. 2NO	1 NO. 2NO	<b>NO</b>
103	KRAIT, COMMON INDIAN	RAT/MICE	1NO	1NO	<b>NO</b>
104	MONITOR LIZARD, COMMON	KERANDI FISH/ROHI FISH RAT (MONDAY)	0.250 1NO	0.250 1NO	<b>NO</b>
105	MONITOR LIZARD, WATER	GADISHA FISH ROHI FISH	0.200 0.200	0.200 0.200	<b>NO</b>

106	PYTHON, INDIAN ROCK/ BURMESE ROCK , ADULT	CHICKEN (MONDAY)	1 NO	1 NO	<b>NO</b>
	SUB ADULT	GUINEA PIG/RAT (MONDAY)	2 NO	2 NO	<b>NO</b>
107	PYTHON, RETICULATED	CHICKEN (MONDAY)	2 NO	2 NO	<b>NO</b>
108	SNAKE, RAT	RAT (MONDAY)	1 NO	1 NO	<b>NO</b>
109	VIPER RUSSEL'S	RAT/DAY OLD CHICK (MONDAY)	2 NO	2 NO	<b>NO</b>
110	TORTOISE, STAR INDIAN	GREEN SAG RIPE BANANA LADIES FINGER JHUDANG/BEAN CUCUMBER PUMPKIN TAMATO PALANG SAG (DEC-FEB)	0.015 0.025 0.030 0.030 0.100 0.100 0.050 0.050	0.015 0.025 0.030 0.030 0.100 0.100 0.050	<b>NO</b>
111	TURTLE, FRESH WATER/ INDIAN FLAP-SHELLED/ GANGES SOFT-SHELLED/ INDIAN TENT	GREEN SAG KERANDI FISH CABBAGE	0.010 0.100 0.020	0.010 0.100 0.020	<b>NO</b>
112	CHITRA TURTLE	GREEN SAG PUMPKIN KERANDI FISH CABBAGE	0.025 0.050 0.100 0.025	0.025 0.050 0.100 0.025	<b>NO</b>

**14. Vaccination Schedule of animals:**

Sl. No.	Species	Disease vaccinated for	Name of the vaccine and dose/quantity used	Periodicity	Remarks
1	Tiger, lion, leopard, fishing cat, jungle cat, leopard cat	Feline panleukopenia, Calici disease, Rhinotracheitis, Rabies	Biofel- PCHR- 1 dose per animal	Annual	
2	Elephant	Haemorrhagic Septicemia	HS Alum adjuvant vaccine- 10ml/head	Six months	
		Foot and mouth disease	Rakhsa-Ovac- 5ml/head	Six monthly	
		Tetanus	Toxoid- 1ml/head	Six months	
		Rabies	Raksharab- 2vials/head	Annual	
		Anthrax	Anthrax spore vaccine- 3ml/head	Annual	
		Black Quarter	BQ bivalent vaccine- 10ml/ head	Six months	
3	Hyena/ Jackal	Leptospirosis, Parvo, CD, Parainfluenza, Hepatitis	Megavac-6- 1 dose each	Annual	
4	Four horned Antelope	Haemorrhagic Septicemia	HS alum adjuvant vaccine- 3ml/head	Six months	
5	Gaurs	Haemorrhagic Septicemia, Black Quarter, Foot and mouth disease	Raksha-Triovac- 3ml/head	Annual	

### **15. De-worming Schedule of animals**

Sl. No.	Species	Drug Used	Month
1	Tiger, Lion, Leopard, Hyena, Jackal,	Fenbendazole	June
		Ivermectin	October
		Albendazole	February
2	Indian Pangolins	Albendazole	June
		Albendazole	October
		Albendazole	February
3	Animals at Nocturnal House: Civet, Porcupine, Fishing cat, Ratel, jungle Cat, barn Owl, Brown Fish Owl	Albendazole	June,
		Albendazole	October
		Albendazole	March
4	Birds	Levamisole	June
		Levamisole	November
5	Gaur	Oxyclozanide and Levamisole	July
		Oxyclozanide and Levamisole	March
6	All deer Species and antelopes	Oxyclozanide and Levamisole	August
		Oxyclozanide and Levamisole	December
7	Sloth bears and Himalayan Black Bears	Albendazole	August
		Albendazole	February
8	Animals at Small Mammal House: Porcupine, Ratel, Jungle Cat, Indian Hare, Giant Squirrel, Mongoose, Wild Boar	Albendazole	August
		Albendazole	January
9	Hippopotamus	Albendazole	January
10	Elephants	Albendazole	February

**16. Disinfection Schedule:**

Sl. No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
1	Tiger, lion, leopard, Hyena, Jackal,	Open top enclosure	Kohrsolin-TH	Alternate month
			Deltamethrine/ Cypermethrine	Alternate month
2	All Deer Species	Open top enclosure	Lime Sprinkling	Alternate month
3	All Bird Species	Caged enclosure	Kohrsolin- TH	Alternate month
			Virkon-S	Alternate month
4	All Primates including Chimpanzee, Orangutan	Open top enclosure	Kohrsolin-TH	Alternate month

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

No health check-up of employees for zoonotic diseases was carried out during the year 2019-20. The last Health Check-up of 173 employees was carried out on 26<sup>th</sup> and 27<sup>th</sup> March 2018. The next health check-up was scheduled on 18<sup>th</sup> and 19<sup>th</sup> March, 2020.

**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. Out of which Indian Grey Wolf and Exotic Primate enclosure newly constructed with addition to it renovation of Water bird aviary and Boat ghat also done renovation of sit out spots, are worth mentioning.

## **19. Education and Awareness programmes during the year:**

<b>DATE</b>	<b>PROGRAMME/EVENT</b>	<b>NO. PARTICIPANTS</b>
04.04.2019	Field visit of B.Sc, 3 <sup>rd</sup> year Zoology students from JKBK College, Cuttack	20
14.04.2019	Field Visit of B.Sc Zoology Students, from S.C.S College, Puri	18
19.04.2019	Zoo Outreach Programme	Visitors
21.04.2019	Zoo Outreach Programme	Visitors
27.04.2019	Celebration of World Veterinary Day	>200
03.05.2019	East India tour programme of 26 no. of FRO trainees from Uttrakhand Forestry Training School	26
10.05.2019	Study tour of B.V.Sc & A.H. students from O.U.A.T, Bhubaneswar	45
05.06.2019	Celebration of World Environment Day	>200
17.06.2019	Field Visit of B.Sc Zoology Students, from BJB(A) College, Bhubaneswar	15
28.06.2019	Field Visit of B.Sc Zoology Students, from Kendrapada (A) College, Kendrapada	30
26.07.2019	Orientation visit of Forest Guard trainees from NTS, Champua	41
29.07.2019	Celebration of International Tiger Day	>200
12.08.2019	Celebration of World Elephant Day	>200
21.08.2019	Orientation visit of Forest Guard from FTS, G.Udaygiri, Odisha	41
24.08.2019	Orientation Programme of B.Sc Life Science students of Maharishi College of Natural Law, Bhubaneswar	25
07.09.2019	International Vulture Awareness Day	>150
10.09.2019	Orientation visit of FROs trainees from Gujarat Forest Academy, Gujarat	36
15.09.2019	Exposure visit of Phase I trainees (MCT) programme from IGNFA	05
16.09.2019	Field visit of trainees from Odisha Sector Development Project (JICA)	15
20.09.2019	Orientation visit of FROs trainees from CASFOS, Burnihat, Assam	40
24.09.2019	Orientation Programme of 11 <sup>th</sup> Class students from K.V. No 1 Ram Mandir, Bhubaneswar	06
02.10.2019	Cleanliness Drive by zoo staffs	Officers & Staff
03.10.2019	65 <sup>th</sup> Wildlife Week Celebration	>200
02.11.2019	Study tour of B.V.Sc & A.H. students from O.U.A.T, Bhubaneswar	45
09.11.2019	Field visit of B.Sc, Sustainability students from XIMB, Bhubaneswar	20
10.11.2019	Orientation tour of IFS probationers from IGNFA Group-A	39
15.11.2019	Field visit of Senior Secondary students from "SURAVI" from different districts of Odisha.	1600
14.11.2019	Field visit of primary students from Shinning Star Kids School, Bhubaneswar	35
20.11.2019	Orientation tour of IFS probationers from IGNFA Group-B	39
23.11.2019	Zoo Outreach Programme from BJB College, Bhubaneswar	29

28.11.2019	Study tour of B.Sc, Forestry students ( Gr-A) from O.U.A.T, Bhubaneswar	44
29.11.2019	Study tour of B.Sc, Forestry students ( Gr-B) from O.U.A.T, Bhubaneswar	44
01.12.2019	Zoo Outreach Programme from JKBC College, Cuttack	22
07.12.2019	Study tour of B.V.Sc, students from O.U.A.T, Bhubaneswar	45
08.12.2019	Orientation visit of FROs trainees from Tamil Nadu Forest Academy, Coimbatore	29
14.12.2019	Orientation visit of FROs trainees from Telangana State Forest Academy, Dulapally, Hyderabad	40
03.01.2020	Field visit of B.Sc, 3 <sup>rd</sup> year Life Science students from Tulasi Women's College, Kendrapada	60
03.01.2020	Waterfowl census at Nandankanan Sanctuary	40
09.01.2020	Orientation visit of SFS trainees from CASFOS, Burnihat, Assam	37
13.01.2020	Field visit of B.Sc, 3 <sup>rd</sup> year Botany students from Hinjikut Govt. College, Ganjam	80
17.01.2020	Field visit of B.Sc, 3 <sup>rd</sup> year Zoology students from D.R.Nayapally College, Bhubaneswar	25
01.02.2020	Orientation visit of Forester trainees from FTS, Ghatkia, Bhubaneswar	
02.02.2020	World Wetland Day	>250
05.02.2020 & 06.02.2020	Visit of CZA evaluation team from New Delhi	02
08.02.2020	Cleanliness Drive and Plastic collect campaign by NSS students of KIIT University, Bhubaneswar	30
08.02.2020	Field visit of orphanage students from "KAR FOUNDATION" of Bhubaneswar.	35
11.02.2020	Field visit of B.Sc, students from XIMB, Bhubaneswar	10
11.02.2020	Field visit of B.Sc, 3 <sup>rd</sup> year Zoology students from Govt (A) College, Rourkela	40
13.02.2020	Zoo Outreach Programme from Maharishi College, Bhubaneswar	25
13.02.2020	Orientation visit of FROs trainees from Karnataka Forest Academy, Dharwad	42
15.02.2020	World Pangolin Day	>200
21.02.2020	Zoo Outreach Programme from Centurian University, Bhubaneswar	26
25.02.2020	Study tour of B.V.Sc & A.H. students Group-A from O.U.A.T, Bhubaneswar	45
27.02.2020	Study tour of B.V.Sc & A.H. students Group-B from O.U.A.T, Bhubaneswar	45
23.02.2020 & 24.02.2020	Tranquilization training programme for field level staff of Forest Department of Odisha	27
25.02.2020	Tranquilization training for Monkey menace for field level staff of Forest Department of Odisha	15
01.03.2020	Field visit of B.Sc, 3 <sup>rd</sup> year Zoology students from Devi Kandal Nityananada College, Cuttack	30
03.03.2020	World Wildlife Day	>150



05.03.2020	Orientation visit of Foresters trainees from NTS, Champua	32
06.03.2020	Study tour of B.Sc, Forestry students ( Gr-A) from O.U.A.T, Bhubaneswar	42
07.03.2020	Study tour of B.Sc, Forestry students ( Gr-B) from O.U.A.T, Bhubaneswar	47
14.03.2020	Orientation visit of FROs trainees from Telangana State Forest Academy, Dulapally, Hyderabad	41

## **20. Important Events and happenings:**

### **EXOTIC PRIMATE ENCLOSURES**

Three Exotic Primate Enclosures were created over an area of 281.25 sq.m. with a total expenditure of Rs. 20 lakhs from the society budget of Nandankanan to house three exotic primate species namely; Tufted capuchin, Red hand tamarin and Common squirrel monkey. Each enclosure has 60 sq.m. exhibit area along with two retiring cells and species specific enclosure enrichments. Superior-strength glass fronted viewing area provides proper visibility and better visitor experience. A pair of tufted capuchin, a pair of common squirrel monkey and one female red hand tamarin are exhibited in respective enclosures. A pair of red hand tamarin will be procured shortly.

### **INDIAN WOLF ENCLOSURE**

An Indian wolf enclosure was created over an area of 1087 sq.m. with a total expenditure of Rs. 53.84 lakhs from the society budget of Nandankanan to house Indian wolf. The enclosure has an exhibit area of 207sq.m. with species specific enrichment, two back kraals, 6 retiring cells and keeper's corridor. The construction was done following CZA guidelines and design for better management and health care of species. One female Indian grey wolf is exhibited in the enclosure. The zoo management is in contact with different Indian zoos namely, Kamala Nehru PraniSangrahalaya, Indore, Nahargarh Zoological Park, Rajasthan and Machhia Biological Park, Rajasthan for procurement of more number of wolves.

### **INCIDENCE OF EEHV INFECTION IN ELEPHANTS**

During 25.08.2019 to 20.09.2019, four young elephants of Nandankanan Zoological Park died due to Elephant Endotheliotropic Herpes Virus (EEHV) infection. The elephants were in the age group of 6 to 10 years and were housed in the same enclosure. Now there are 4 surviving elephants, three are above 20 years age and another about three years age. The surviving four elephants are under surveillance for EEHV virus. Experts from Assam Veterinary College, Guwahati and Forest Department, Waynad, Kerala have visited during 26.09.2019 and 01.10.2019 respectively.

As per advice of the experts, a schedule has been prepared for collection of trunk wash from these elephants and analysis through q PCR at CWH, CVSc & AH as a part of routine surveillance protocol. The protocol is meticulously is being continuing.

### **INTRODUCTION OF NANDANKANAN APP IN ANDROID MOBILE**

Good news for animal lovers, now they can get entry ticket through “Nandankanan App”. Users can book entry ticket on line. Not only this they also get information about Nandankanan, visitor amenities facilities, adoption scheme, zoo map an interactive feature which would act a virtual tour guide while inside the zoo or give exact location inside zoo area, booking regarding pindies and shed at State Botanical Garden, education and awareness programme and tender. Apart from this, the app has also animal and plants section where one can get various information. Under event section, user can get to know about all the happenings at the zoo.

Presently, the app was available only for android phones in Google play.

### **MIDDLE LEVEL OFFICIALS TRAINING PROGRAMME HELD AT BHUBANESWAR**

The Central Zoo Authority organizes “middle level official training programme” every year for the “Zoo Officials” working in zoos on regional basis. Accordingly, this year the Central Zoo Authority in association with Nandankanan zoos organizing the programme from 16<sup>th</sup> July to 18<sup>th</sup> July,2019 at Bhubaneswar, Odisha. The programme was aimed at the Capacity building for zoo officials. Dr. Anup Kumar Nayak, Member Secretary, Central Zoo Authority, MoEF &CC inaugurated the training programme as Chief Guest.

The Member Secretary, CZA emphasized his remarks on the animal welfare and said that zoo should arrange proper feed and veterinary facility to zoo inmates and at the same provide and maintain strict hygienic living condition to animals along with an environment almost similar to its natural habitat. The targeted number of the participants for the training programme is 30. Remarkably 35 numbers of the participants from 14 zoos attended the training programme

### **ZOO OUTREACH PROGRAMME**

To educate and enrich, Nandankanan invites different organization to study about different flora and fauna, conservation breeding, identifying the floral diversity, wetland education etc. This programme was started from December 2019, this was fully one day programme and organised mainly on Sunday or government holiday.

### **5T at NANDANKANAN**

On every last Saturday of each month, a meeting was held at FRH of Nandankanan for implementation of 5T. In this meeting all grievance received from employees are discussed, visitor amenities, visitor grievance, animal health care and treatment, developmental programme and beautification of zoo and garden regarding matters are discussed and implemented within next meeting.

## **RELEASE OF GHARIAL CROCODILES INTO RIVER MAHANADI AT SATKOSIA GORGE**

In the first phase, Nandankanan released five number gharials bred at Nandankanan Zoological Park for pilot study. The gharials are individually marked and fitted with radio transmitters for future identification and tracking of their migration route. They are of appropriate age and size i.e., more than three years of age and one meter in length. They shall be replenishing the stock and help gather information on migration and factors affecting their survival. There is a provision for release of 30 numbers of gharials in future in a phased manner with 10 gharials in each year. The technical assistance for biotelemetry is being obtained from Gharial Telemetry Project, Madras Crocodile Bank Trust. There is also engaged three numbers of post graduate Research scholars, for day to day observation and keeping track of the released ones.

### **21. Seasonal special arrangements for upkeep of animals:**

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

#### **Winter arrangement for captive animals at Nandankanan Zoological Park:**

1. 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.
2. Chimpanzee and Orangutan:
  - Two numbers of blankets provided to orangutan.
  - 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.
  - Wooden platforms are provided to the orangutan during 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.
3. 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.
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. 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.
  6. The top soil of tiger and lion enclosure back kraals are removed and replaced with fresh sand after sprinkling of lime.
  7. All lake side herbivore enclosures are sprinkled with lime. Stagnant water and mud in enclosures are cleaned and replaced with fresh soil.

**Summer arrangement for captive animals at Nandankanan Zoological Park:**

1. Carnivore enclosures:
  - All the water pools available in the exhibit and back kraals are repaired and kept filled up with water alternatively.
  - Running water made available during peak hours of the day.
  - The shutter of feeding cell is made open throughout the day.
  - Moat water of all water moats is pumped out and the moats are cleaned and disinfected.
  - Provision of shed above the water pools to is made to prevent water from heating.
  - Feeding cells made straw thatched to keep the cells cool.
  - Provision of sprinklers is made in the enclosures 19 to 29-A.
  - Sprinklers available at enclosures 29-B to 33 are made functional and other carnivore enclosures.
2. Herbivore enclosures:

- Sambar enclosure ( Encl 39):
    - Wallowing tank are cleaned and provision of running water facility is made in wallowing tank.
    - Water accumulated near the feeding cell is cleaned.
    - Left over stems of fodders accumulated in the moat areas are cleaned regularly.
    - Top soil is removed and enclosure is cleaned.
  - Sprinklers available at Manipuri deer, barking deer, swamp deer enclosures is made functional.
  - All sprinklers available at giraffe enclosure is made functional.
3. Primate enclosures:
- Chimpanzee and Orangutan enclosure
    - Provision of air coolers made available to Chimpanzee and orangutan.
    - 'Benachera' mat may be hanged at the windows of chimpanzee and orangutan feeding cell.
    - At chimpanzee enclosure roof thatching is made to make the room cooler.
    - At 'Nilgiri langur' enclosure bamboo tatti is covered at the exhibit area.
    - Chimpanzee, orangutan and 'nilgiri langur' not released to the exhibit area in case the temperature rises to more than 40°C.
4. Reptile park:
- In crocodile and turtle enclosures water in the pool is maintained in running condition during peak hours of the day.
  - Sheds is provided at all crocodile enclosures, turtle enclosures.
  - Snake enclosures are covered with bamboo tatti/mat.
  - At Iguana enclosure, provision of bamboo tatti/mat on roof top is made.
5. Bird enclosures:
- Provision of side wall curtains is 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.
- Cinereous Vulture: Water tank remain 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 /ring neck pheasant/lorikeet enclosures: gunny bags/ 'bena chera' is hanged up to half of the chain link mesh and water is sprinkled over it 2-3 times a day.
- Emu and ostrich is 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.

6. Bear Enclosures:

- All the bear enclosures (enclosure 15 and 16) is provided with two sheds each thatched with straw or bamboo. Bears to be kept confined in the feeding cell during 10AM to 4PM in days temp goes beyond 40°C.
- Mote is cleaned and refilled with fresh water at regular interval.

**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 51 organization was given priority. The research teams are made up of 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.

The major focus of the research studies carried out during the year mostly focused on standardization of artificial incubation techniques for birds and reptiles, standardization of hand rearing protocols for baby animals, management of health care related issues, behavioural studies on maternal behaviour of Indian pangolins, analysis effect of inbreeding on captive tigers, hormonal studies to determine reproductive status and stress in wild

animals. Some of the studies are published in national and international journals which are mentioned below.

1. Mohapatra, R.K., Banik, A., Sahu, S.K., Panda, S. and Dangar, T.K. (2020) Parasites and bacteria associated with Indian pangolins *Manis crassicaudata* (Mammalia: Manidae). *Global Ecology and Conservation*. p.e01042: 1-9.
2. Sahu, S.K., Sahoo, N., Mohanty, B. and Mohapatra, D., 2020. Piroplasmosis in a captive Grant's Zebra *Equus quagga boehmi* (Mammalia: Perissodactyla: Equidae)-a case study. *Journal of Threatened Taxa*, 12(5), pp.15646-15650.
3. Sahu, S.K., Hota, S.R., Behera, B.K., Dash M. and Sahoo, N. (2019) Molecular detection of *Theileria* spp. in apparently healthy cervids of Nandankanan Zoological Park, Odisha. *e-planet* 17 (2): 146-151.
4. Mahmood, T., Challender, D., Khatiwada, A., Andleeb, S., Perera, P., Trageser, S., Ghose, A. & Mohapatra, R. (2019) *Manis crassicaudata*. *The IUCN Red List of Threatened Species* 2019: e.T12761A123583998.
5. Challender, D., Wu, S., Kaspal, P., Khatiwada, A., Ghose, A., Ching-Min Sun, N., Mohapatra, R.K. & Laxmi Suwal, T. (2019) *Manis pentadactyla* (errata version published in 2020). *The IUCN Red List of Threatened Species* 2019: e.T12764A168392151.
6. Challender, D.W., Ades, G.W., Chin, J.S., Sun, N.C.M., Chong, J. L., Connelly, E., Hywood, L., Luz, S., Mohapatra, R.K., de Ornellas, P. and Parker, K., et al. (2019) Evaluating the feasibility of pangolin farming and its potential conservation impact. *Global Ecology and Conservation*. 20, p.e00714: 1-15.
7. Mohapatra, R.K., Purohit, S., Ray, S.S., Sahoo, A.A., Panda, M.K., Panda, B.P., Nanda, S., Sahoo, M., Padhee, B.K., Parmar, M. and Biswal, U. (2019) Addition of some bird species to checklist of Nandankanan Wildlife Sanctuary, Odisha. *Int J Avian & Wildlife Biol.* 4(3).80-85
8. Mohapatra, R.K., Sahu, S.K., Panda, S., Das, J.K. and Upadhyay, H.S. (2019) Himalayan Griffon: rescue and treatment of *Gyps himalayensis* in Odisha, India. *Zoo's Print*, 34(3): 24-27.
9. Mohapatra, R.K., Panda, B.P., Panda, M.K., Purohit, S., Parida, S.P., Purohit, K.L., Das, J.K. and Upadhyaya, H.S. (2019) Colonial nesting of Asian openbill storks *Anastomus oscitans* in Nandankanan Wildlife Sanctuary Odisha *Int J Avian & Wildlife Biol.* 4(1).14-17.

10. Mahmood, T., Mohapatra, R.K., Perera, P., Irshad, N., Akrim, F., Andleeb, S., Waseem, M., Sharma S., and Panda, S. (2019) Indian pangolin *Manis crassicaudata* (Geoffroy, 1803). In: Challender, D.W.S., Nash, H.C., Waterman, C. (Eds) Pangolins, Science, Society and Conservation. Academic Press. London, UK. pp 71-88.
11. Wicker, L.V., Cabana, F., Chin, J.S., Jimerson, J., Lo, F.H., Lourens, K., Mohapatra, R.K., Roberts, A., and Wu S. Captive husbandry of pangolins: lessons and challenges (2019) In: Challender, D.W.S., Nash, H.C., Waterman, C. (Eds) Pangolins, Science, Society and Conservation. Academic Press. London, UK. pp 443-459.
12. Mohapatra, R. K., Sahu, S.K., Das, J.K., Paul, S. (2019). Hand Rearing of Wild Mammals in Captivity. Nandankanan Biological Park, Forest and Environmental Department, Government of Odisha. pp. 1-80.
13. Mohapatra, R.K. and Panda M.K. (2019) Pangolin Education Kit. Nandankanan Biological Park, Forest and Environmental Department, Government of Odisha. 1-36.

### **23. Conservation Breeding Programme of the Zoo:**

- (a) **Indian Pangolin Conservation Breeding Programme:** The research on conservation breeding of Indian pangolin is actively going on in the established 'Indian pangolin conservation breeding centre'. Monitoring through the infrared sensitive CCTV cameras unfolds the secrets of the life of the pangolins. The centre has successfully bred Indian pangolins in captivity, leading to total birth of 7 pangolins in the centre. Besides, the centre is also focusing to standardize the hormonal assay of fecal steroid metabolites to better understand reproductive aspect of these endangered species.
- (b) **Conservation Breeding of Long billed vultures:**

The vulture Conservation Breeding Centre has been constructed in an off-exhibit area of Nandankanan Zoological Park, Bhubaneswar during the year 2011-12 in an area of 0.3 acres surrounded by seven acres of undisturbed forest land with financial assistance from Central Zoo Authority, New Delhi. The Centre was established with objectives to develop protocol for captive management and breeding of long billed vultures for reintroduction and release in to wild. The founder populations are twelve numbers of long billed vultures procured from Gandhi Zoological Park, Gwalior on 26.11.2018. All the vultures are 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. Mating of two vulture pairs was recorded through CCTV in the centre during December 2018 from which one pair laid an egg on 3<sup>rd</sup> Jan 2019 that hatched after incubation of 57 days on 1<sup>st</sup> March 2019.

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

<b>Serial No</b>	<b>Species</b>	<b>Sex (M:F:U)</b>	<b>Zoo /Farm Name</b>	<b>Date of arrival</b>
1.	Black tufted marmoset	0:2:0	Purchased from AFAZ Farm, Madurai	15.02.2019
2.	Indian Fox	1:1:0	Kamala Nehru Prani Sangrahalaya, Indore	08.08.2019
3.	Indian Grey Wolf	0:1:0	Kamala Nehru Prani Sangrahalaya, Indore	08.08.2019
4.	Tufted Capuchin	1:1:0	Purchased from Jai Farm, Chennai	03.10.2019
5.	Squirrel Monkey	1:1:0	Purchased from Jai Farm, Chennai	03.10.2019
6.	Nile Crocodile	2:1:0	MCBT, Mahabalipuram	22.10.2019
7.	Yellow Anaconda	0:0:8	MCBT, Mahabalipuram	22.10.2019
8	Asiatic Lion	4:0:0	Kanan Pindari Zoological Garden, Bilaspur	17/03/2020
9	Indian Fox	1:1:0	Kanan Pindari Zoological Garden, Bilaspur	17/03/2020

## **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
<b>Mammals</b>						
1	30.08.2019	Indian pangolin 0:1:0	Range Officer, Badamba	Memo No, 4570 dated 30.08.2019		For conservation breeding
2	02.10.2019	Indian pangolin 0:1:0	Range officer, Muniguda Range	Memo No. 4044 dated 03.09.2019		For conservation breeding
3	07.11.2019	Indian pangolin 0:1:0	Baripada Forest Division	Memo No.6825 dated 07.11.2019		For conservation breeding
<b>Birds</b>						
1	26.02.2020	Griffon Vulture 0:0:1	Range Officer, Ranpur, Khordha	Memo No. 2009 dated 26.02.2020		It died on 31.03.2020

## 26. Annual Inventory of animals:

ANNUAL ANIMAL INVENTORY (FROM 1ST APRIL- 2019 TO 31ST MARCH-2020)

SCH-I & SCH-II (Wildlife Protection Act)				During the Month																			
				Stock as on 01.04.2019				Births			Acquisitions			Disposals			Deaths			Stock as on Dt-31.03.2020			
Sl. No	Species	Scientific name	SCH	M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
	<u>BIRDS</u>	-	-																				
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	1	1
2	A. PEA FOWL, INDIAN	<i>Pavo cristatus</i>	I	5	5	5	15	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5	15
	B. PEA FOWL, INDIAN WHITE	<i>Pavo cristatus</i>	I	3	4	1	8	0	0	0	0	0	0	0	0	0	1	0	0	2	4	1	7
3	SPOONBILL WHITE EURASIAN	<i>Platalea leucorodia</i>	I	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
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	2	2
5	VULTURE LONG BILLED	<i>Gyps indicus</i>	I	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
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
7	KITE BRAMHINY	<i>Haliastur indus</i>	I	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
8	KITE BLACK	<i>Milvus migrans</i>	I	1	1	9	11	0	0	0	0	0	0	0	0	0	0	0	0	1	1	9	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
10	HORNBILL GREY	<i>Ocyrceros birostris</i>	I	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
	SCH-I & II - TOTAL			11	11	36	58	0	0	0	0	0	0	0	0	0	1	0	0	10	11	36	57
	OTHERS																						

11	BUDGERIGAR	<i>Melopsittacus undulatus</i>	E	138	242	156	536	0	0	0	0	0	0	0	0	0	0	0	0	138	242	156	536
12	COCKATIEL, WHITE/ CINAMON PEARS PIED	<i>Nymphicus hollandicus</i>	E	16	23	53	92	0	0	0	0	0	0	0	0	0	0	0	0	16	23	53	92
13	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
14	COCKATOO, UMBRELLA SULPHUR CRESTED	<i>Cacatua sphurea</i>	E	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
15	CONNURE BROWN THROATED	<i>Eupsittula pertinax</i>	E	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
16	CONNURE JANDAYA	<i>Aratinga jandaya</i>	E	1	2	21	24	0	0	0	0	0	0	0	0	0	1	1	1	1	2	18	21
17	CONURE SUN	<i>Aratinga solstitialis</i>	E	1	1	45	47	0	0	0	2	2	0	0	0	0	0	0	8	4	4	35	43
18	CONURE PINE APPLE	<i>Pyrrhura molinae molinae</i>	E	2	2	0	4	0	0	0	10	10	0	0	0	0	1	1	0	11	11	0	22
19	CONURE YELLOW SIDED	<i>Pyrrhura molinae sordida</i>	E	4	5	0	9	0	0	0	10	10	0	0	0	0	1	0	14	14	0	28	
20	CRANE SARUS	<i>Grus antigone</i>	IV	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
21	DOVE, EMERALD	<i>Chalcophaps indica</i>	IV	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
22	DOVE, SPOTTED	<i>Spilopelia chinesis</i>	E	1	1	6	8	0	0	0	0	0	0	0	0	0	0	0	0	1	1	6	8
23	DOVE BARBARY	<i>Streptopelia risoria</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1
24	DOVE, DIAMOND	<i>Geopelia cuneata</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
25	DOVE LAUGHING	<i>Spilopelia senegalnesis</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
26	DOVE, RING NECKED	<i>Streptopelia capicola</i>	E	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
27	DUCK, MANDARIN	<i>Aix galericulata</i>	E	7	7	2	16	0	0	0	0	0	0	0	0	2	3	0	5	4	2	11	
28	EGRET CATTEL	<i>Bubulcus ibis</i>	IV	1	0	5	6	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5	6
29	EGRET LARGE	<i>Cosmerodius albus</i>	IV	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1

30	EGRET, LITTLE	<i>Egretta garzetta</i>	IV	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	6
31	EGRET, MEDIAN	<i>Egretta intermedia</i>	IV	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
32	EMU	<i>Dromaius novaehollandiae</i>	E	2	3	2	7	0	0	4	0	0	0	0	0	0	0	0	0	2	3	6	11
33	FINCH, BENGAL/SE/ SOCIETY	<i>Lonchura striata</i>	IV	6	11	4	21	0	0	0	0	0	0	0	0	0	0	0	0	6	11	4	21
34	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
35	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
36	FINCH, ZEBRA	<i>Poephila guttata</i>	E	51	79	82	212	0	0	0	0	0	0	0	0	0	0	0	0	51	79	82	212
37	HERON GREY	<i>Ardea cinerea</i>	IV	3	7	3	13	0	0	0	0	0	0	0	0	0	0	0	3	7	3	13	
38	HERON, NIGHT	<i>Nycticorax nycticorax</i>	IV	8	11	64	83	0	0	0	0	0	0	0	0	0	0	1	8	11	63	82	
39	IBIS, WHITE	<i>Threskiornis aethiopica</i>	IV	25	56	88	169	0	0	0	0	0	0	0	0	0	0	0	25	56	88	169	
40	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	
41	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	3	
42	LORIKEET, SWAINSON'S	<i>Trichoglossus haematodus moluccanus</i>	E	1	1	4	6	0	0	0	0	0	0	0	0	0	1	1	1	0	3	4	
43	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
44	LOVE BIRD, FISCHERS	<i>Agapornis fischeri</i>	E	11	10	15	36	0	0	0	0	0	0	0	0	0	1	1	11	10	13	34	
45	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	
46	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	
47	MACAW, GREEN WINGED	<i>Ara chloroptera</i>	IV	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	

48	MUNIA RED	<i>Estrilda amandava</i>	IV	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
49	MUNIA, BLACKHEADED	<i>Lonchura malacca</i>	IV	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
50	MUNIA, SPOTTED / NUTMEG MANNIKIN	<i>Lonchura punctulata</i>	IV	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
51	OSTRICH	<i>Struthio camelus</i>	IV	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
52	OWL, BARN	<i>Tyto alba</i>	IV	1	1	14	16	0	0	0	0	0	0	0	0	0	0	1	0	2	2	2	9	13
53	OWL, BROWN FISH	<i>Bubo zeylonesis</i>	E	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
54	OWL, ORIENTAL SCOPS	<i>Otus sunia</i>	E	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
55	PARAKEET, ALEXANDRINE	<i>Psittacula eupatria</i>	IV	4	3	9	16	0	0	0	0	0	0	0	0	0	0	0	0	4	3	9	16	16
56	PARAKEET, BLOSSOM HEADED	<i>Psittacula cyanocephala</i>	IV	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
57	PARAKEET, ROSE RING	<i>Psittacula krameri</i>	IV	8	15	2	25	0	0	0	0	0	0	0	0	0	0	0	0	8	15	2	25	25
58	PARROT AFRICAN GREY	<i>Psittacus erithacus</i>	IV	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
59	PELICAN GREY/SPOT BILLED	<i>Pelecanus philippensis</i>	IV	2	2	10	14	0	0	2	0	0	0	0	0	0	0	0	0	4	4	8	16	16
60	PELICAN ROSY/WHITE	<i>Pelecanus onocrotalus</i>	IV	1	1	3	5	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	5	5
61	PHEASANT, GOLDEN	<i>Chrysolophus pictus</i>	E	4	5	16	25	0	0	3	0	0	0	0	0	0	4	0	0	10	10	4	24	24
62	PHEASANT, LADY AMHERST'S	<i>Chrysolophus amherstiae</i>	E	3	3	4	10	0	0	0	0	0	0	0	0	0	1	0	0	2	3	4	9	9
63	PHEASANT, REEV'S	<i>Syrmaticus reevesii</i>	E	2	1	2	5	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2	4	4
64	PHEASANT SILVER	<i>Lophura nycthemera</i>	E	4	11	18	33	0	0	7	0	0	0	0	0	0	2	0	0	15	21	2	38	38
65	PHEASANT YELLOW GOLDEN	<i>Chrysolophus pictus mut.</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
66	ROSELLA, EASTERN	<i>Platycercus eximius</i>	E	1	2	1	4	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	4	4

67	SPARROW JAVA	<i>Padda oryzivora</i>	IV	18	30	49	97	0	0	0	0	0	0	0	0	0	0	0	0	18	30	49	97	
68	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	
69	STORK PAINTED	<i>Mycteria leucocephala</i>	IV	4	4	11	19	0	0	1	0	0	0	0	0	0	0	0	0	4	4	12	20	
70	STORK OPEN BILLED	<i>Anastomus oscitans</i>	IV	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	
71	STORK, WHITE NECKED/WOOLY NECKED	<i>Ciconia episcopus</i>	IV	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
72	SWAN BLACK	<i>Cygnus atratus</i>	E	1	2	0	3	0	0	0	0	0	0	0	0	0	1	0	1	1	0	2		
73	MEYER'S PARROT	<i>Poicephalus meyeri</i>	E	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4		
74	RED BELLIED PARROT	<i>Pionus sordidus</i>	E	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5		
75	TURACO, VIOLET	<i>Musophaga violacea</i>	E	1	1	3	5	0	0	1	0	0	0	0	0	0	1	1	1	3	5			
76	TURACO, LIVING STONE'S	<i>Turaco livingstonii</i>	E	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1		
77	RINGED NECKED PARAKEET	<i>I-Lutino Mutation</i>	IV	0	0	10	10	0	0	0	0	0	0	0	0	0	1	4	0	0	5	5		
		<i>II-Albino Mutation</i>	IV	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4		
78	RED JUNGLE FOWL	<i>Gallus gallus</i>	IV	1	1	5	7	0	0	0	0	0	0	0	0	0	0	0	1	1	5	7		
OTHERS _ TOTAL					365	574	743	1682	0	0	18	22	22	0	0	0	14	11	20	402	607	690	1699	
GRAND TOTAL BIRDS					376	585	779	1740	0	0	18	22	22	0	0	0	15	11	20	412	618	726	1756	
SCH-I & SCH-II (Wildlife Protection Act)																								
<u>MAMMALS</u>					Stock as on 01.04.2019				Births			Acquisitions			Disposals			Deaths			Stock as on Dt-31.03.2020			
Sl. No	Species	Scientific name		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T	
1	ANTELOPE, FOUR HORNED/CHOWSINGHA	<i>Tetraceros quadricomis</i>	I	2	1	1	4	0	0	1	0	0	0	0	0	0	1	0	0	1	1	2	4	
2	BEAR, HIMALAYAN BLACK	<i>Selenarctos thibetanus</i>	II	2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	2	4	0	6		



3	BEAR, SLOTH	<i>Melursus ursinus</i>	I	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
4	A. BLACK BUCK / KRISHNA MRIG	<i>Antilope cervicapra</i>	I	6	10	11	27	0	0	11	0	0	0	0	0	0	1	1	0	13	17	6	36
	B. WHITE BUCK	<i>Antilope cervicapra</i>	I	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5	CAT, JUNGLE	<i>Felis chaus</i>	II	3	2	1	6	0	0	0	0	0	0	0	0	0	0	0	0	3	2	1	6
6	CAT, LEOPARD	<i>Prionailurus bengalensis</i>	I	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
7	CIVET, COMMON PALM / CAT TODDY	<i>Paradoxurus hermaphroditus</i>	II	3	3	17	23	0	0	0	0	0	0	0	0	0	0	0	0	4	4	15	23
8	CIVET, SMALL INDIAN	<i>Viverricula indica</i>	II	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
9	DEER, BROW ANTLERED / SANGAI	<i>Cervus eldi</i>	I	4	6	1	11	1	0	3	0	0	0	0	0	0	1	1	6	5	2	13	
10	DEER, MOUSE	<i>Tragulus memmina</i>	I	2	3	2	7	1	0	4	0	0	0	0	0	0	0	0	0	5	6	1	12
11	DEER- SWAMP / BRASINGHA	<i>Cervus duvauceli</i>	I	4	7	0	11	0	0	2	0	0	0	0	0	0	2	0	4	5	2	11	
12	ELEPHANT, INDIAN	<i>Elephas maximus</i>	I	1	4	0	5	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	3
13	GAUR	<i>Bos Gaurus</i>	I	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
14	LEOPARD / PANTHER	<i>Panthera pardus</i>	I	2	3	0	5	0	0	0	0	0	0	0	0	0	1	1	0	1	2	0	3
15	LION ASIATIC	<i>Pantera leo persica</i>	I	1	1	0	2	0	0	0	4	0	0	0	0	0	1	0	0	4	1	0	5
16	MACAQUE, BONNET	<i>Macaca radiata</i>	II	3	6	0	9	0	0	0	0	0	0	0	0	0	1	0	0	2	6	0	8
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	<i>Manis crassicaudata</i>	I	2	4	1	7	0	0	2	0	0	0	0	0	0	0	0	0	2	4	3	9
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	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1
21	MANGOSE COMMON	<i>Herpestes edwardsi</i>	II	1	1	1	3	0	0	1	0	0	0	0	0	0	0	0	0	1	1	2	4

22	A. TIGER, BENGAL	<i>Panthera tigris tigris</i>	I	5	9	0	14	0	0	2	0	0	0	0	0	0	0	1	0	5	8	2	15
	B. TIGER, BENGAL (WHITE)	<i>Panthera tigris tigris</i>	I	4	5	0	9	0	0	0	0	0	0	0	0	0	1	0	0	3	5	0	8
	C. TIGER, BENGAL (MELANISTIC)	<i>Panthera tigris tigris</i>	I	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
23	NILGIRI LANGURE	<i>Trachypithecus johnii</i>	I	1	1	0	2	0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0
24	ASIATIC WILD DOG	<i>Cuon alpinus</i>	II	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1
25	ASSAM MACAQUE	<i>Macaca assamensis</i>	II	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
26	INDIAN GREY WOLF	<i>Canis lupus pallipes</i>	I	1	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	1
27	INDIAN FOX	<i>Vulpes bengalensis</i>	II	0	0	0	0	0	0	2	2	2	0	0	0	0	0	0	0	2	2	2	6
SCH-I & II - TOTAL																							
	OTHERS																						
27	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
28	CHIMPANZEE	<i>Pan troglodytes</i>	E	1	5	0	6	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	6
29	DEER, BARKING-MUNTJAC (KAKKAR)	<i>Muntiacus muntjak</i>	III	24	39	15	78	0	0	1	0	0	0	0	0	0	2	0	0	27	44	6	77
30	DEER, HOG	<i>Axis porcinus</i>	III	6	17	17	40	0	0	7	0	0	0	0	0	0	4	0	15	16	12	43	
31	DEER, SAMBAR	<i>Cervus unicolor</i>	III	6	13	0	19	0	0	1	0	0	0	0	0	0	1	0	6	12	1	19	
32	I.DEER, SPOTTED/CHITAL(ZOO)	<i>Axis axis</i>	III	288	334	71	693	0	0	28	0	0	0	0	0	0	1	3	0	327	361	29	717
	II.DEER, SPOTTED/CHITAL(RBD)	<i>Axis axis</i>	III	244	119	0	363	55	45	0	0	0	0	0	0	0	0	0	0	299	164	0	463
33	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

34	HARE INDIAN	<i>Lepus nigricollis</i>	IV	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	
35	HIPPOPOTAMUS	<i>Hippopotamus amphibius</i>	E	2	6	4	12	0	0	3	0	0	0	0	0	0	0	1	0	2	5	7	14	
36	HYAENA, STRIPED	<i>Hyaena hyaena</i>	III	3	4	0	7	0	0	0	0	0	0	0	0	0	1	0	0	2	4	0	6	
37	GIANT FRUIT BAT	<i>Pteropus giganteus</i>	V	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	
38	JACKAL	<i>Canis aureus</i>	IV	1	2	1	4	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	3	
39	LION HYBRID	<i>Panthera leo</i>	E	4	4	0	8	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	8	
40	LION AFRICAN	<i>Panthera leo</i>	E	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
41	NILGAI-BLUE BULL	<i>Boselaphus tragocamelus</i>	III	4	15	2	21	0	0	0	0	0	0	0	0	0	1	3	0	3	12	2	17	
42	ORANG UTAN	<i>Pongo pygmaeus</i>	E	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
43	PIG WILD/WILD BOAR	<i>Sus scrofa</i>	III	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	
44	A. PORCUPINE INDIAN	<i>Hystrix indica</i>	IV	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4	
45	BLACK-TUFTED MARMOSET	<i>Callithrix penicillata</i>	E	1	3	0	4	0	0	2	0	0	0	0	0	0	2	0	1	1	2	4		
46	RED-HANDED TAMARIN	<i>Saguinus midas</i>	E	1	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	
47	TUFTED CAPUCHIN	<i>Sapajus apella</i>	E	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2	
48	COMMON SQUIRREL MONKEY	<i>Saimiri sciureus</i>	E	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2	
OTHERS - TOTAL					592	569	116	1277	55	45	42	2	2	0	0	0	0	7	15	0	697	639	65	1401
GRAND TOTAL MAMMALS					655	652	154	1461	57	45	71	8	5	0	0	0	0	17	25	2	772	727	104	1603
SCH-I & SCH-II (Wildlife Protection Act)																								
<u>REPTILES</u>				-	Stock as on 01.04.2019				Births			Acquisitions			Disposals			Deaths			Stock as on Dt-31.03.2020			

	Species	Scientific name		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
1	COBRA, KING	<i>Ophiophagus hannah</i>	II	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
2	COBRA, MONOCELLATE	<i>Naja naja kouthia</i>	II	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3
3	COBRA, BINOCELLATE	<i>Naja naja</i>	II	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
4	CROCODILE, LONG SNOURED / GHARIAL	<i>Gavialis gangeticus</i>	I	24	90	9	123	0	0	0	0	0	0	2	5	0	0	0	0	22	85	9	116
5	CROCODILE, MUGGER	<i>Crocodilus palustris</i>	I	4	6	11	21	0	0	0	0	0	0	0	0	0	0	0	0	4	6	11	21
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	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
8	MONITOR LIZARD, WATER	<i>Varanus salvator</i>	I	1	3	2	6	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	3
9	PYTHON, BURMESE ROCK	<i>Python molurus bivistatus</i>	I	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
10	PYTHON, INDIAN ROCK	<i>Python molurus molurus</i>	I	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
11	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
12	SNAKE, RAT	<i>Ptyas mucosus</i>	II	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
13	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
14	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
15	VIPER, RUSSEL'S	<i>Vipera ruselli</i>	II	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
16	INDIAN CHAMELEON	<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
SCH-I &II - TOTAL				65	142	28	235	0	0	0	0	0	0	2	5	0	1	1	1	63	135	27	225
	OTHERS																						

17	BOA, COMMON SAND	<i>Eryx johnii</i>	IV	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3		
18	BOA, RED SAND	<i>Eryx conicus</i>	IV	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2		
19	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		
20	CROCODILE, SIAMESE	<i>Crocodylus siamensis</i>	E	3	13	3	19	0	0	0	0	0	0	0	0	0	1	0	3	12	3	18			
21	CHITRA TURTLE	<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		
22	KRAIT BANDED	<i>Bungarus fasciatus</i>	IV	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2		
23	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		
24	TORTOISE STAR INDIAN	<i>Geochelone elegans</i>	IV	2	1	10	13	0	0	0	0	0	0	0	0	0	0	0	2	1	10	13			
25	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			
26	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	3	3			
27	I.GREEN IGUANA	<i>Iguana iguana</i>	E	1	2	0	3	0	0	0	0	0	0	0	0	1	0	0	0	2	0	2			
	II. RED IGUANA	<i>Iguana iguana</i>	E	1	2	0	3	0	0	0	0	0	0	0	0	0	1	0	1	1	0	2			
28	NILE CROCODILE	<i>Crocodylus niloticus</i>	E	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	3			
29	YELLOW ANACONDA	<i>Eunectes notaeus</i>	E	0	0	0	0	0	0	0	0	0	8	0	0	0	1	1	0	0	0	6	6		
OTHERS TOTAL																									
GRAND TOTAL - REPTILES				-	-	76	168	51	295	0	0	0	0	0	11	2	5	0	3	4	1	73	159	59	291
				Stock as on 01.04.2019				Births			Acquisitions			Disposals			Deaths			Stock as on Dt-31.03.2020					
SL	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	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	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	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	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	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	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 01.04.2019								Stock as on Dt-31.03.2020											
				M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
	Birds			376	585	779	1740	0	0	18	22	22	0	0	0	0	15	11	20	412	618	726	1756
	Mammal			655	652	154	1461	57	45	71	8	5	0	0	0	0	17	25	2	772	727	104	1603
	Reptiles			76	168	51	295	0	0	0	0	0	11	2	5	0	3	4	1	73	159	59	291
	Amphibians			0	0	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	21
	TOTAL			1107	1405	1005	3517	57	45	89	30	27	11	2	5	0	35	40	23	1257	1504	910	3671
				No. of Individuals				No. of species				No. of species				No. of Individuals							
	BIRDS - SCH I&II			11	11	36	58		10									10		10	11	36	57
	-OTHERS			365	574	743	1682		68									67		402	607	690	1699
	MAMMAL - SCH I & II			63	83	38	184		26									25		75	88	39	202
	-OTHERS			592	569	116	1277		20									21		697	639	65	1401
	REPTILE - SCH I & II			65	142	28	235		16									16		63	135	27	225
	-OTHERS			11	26	23	60		11									13		10	24	32	66

AMPHIBIANS SCH I &II			0	0	0	0		0								0		0	0	0	0
OTHERS			0	0	21	21		6								6		0	0	21	21
TOTAL			1107	1405	1005	3517		157								158		1257	1504	910	3671

**27. Mortality of animals:**ANNUAL REPORT ON DEATH OF CAPTIVE ANIMALS AT NANDANKANAN  
BIOLOGICAL PARK

(FROM 01.04.2019 TO 31.03.2020)

SL.NO.	DATE	ANIMAL	AGE	SEX	CAUSE OF DEATH
<b>MAMMALS</b>					
1	19.04.19	Red handed Tamarin	Adult	M	Acute Hepatitis
2	22.04.19	Barking Deer	Adult	M	Septicemia resulted from Infighting injuries.
3	29.05.19	Orangutan	About 41 yrs	F	Acute pneumonia and hepatitis
4	31.05.19	Nilgiri Langur	About 17 yrs	M	Necrotic hepatitis
5	03.06.19	Leopard Cat	Adult	M	Haemorrhagic enteritis
6	13.06.19	Jackal	About 2 yrs	M	Anaemia
7	15.06.19	Marmoset	About 2 yrs	F	Cardiac failure
8	24.06.19	Swamp deer	Adult	F	Old age associated with hepatitis
9	18.07.19	Nilgai	Adult	F	Senility associated with cirrhosis
10	28.07.19	Nilgai	Adult	F	Tumor in liver
11	04.08.19	Nilgai	Adult	F	Senility
12	10.08.19	Four horned Antelope	Adult	M	Infighting & internal haemorrhage
13	12.08.19	Normal Colour Tiger	19yrs 5 months	F	Debility and collapsed lungs associated with old age
14	14.08.19	Nilgiri langur	74 days	M	Debility & acute gastritis
15	17.08.19	Indian Grey Wolf	About 5 years	M	Debility, collapsed lungs & chronic enteritis
16	26.08.19	Elephant	About 10 yrs	F	EEHV infection
17	31.08.19	Swamp deer	Adult	F	Nasal tumor
18	14.09.19	Elephant	About 9 yrs	M	EEHV infection
19	22.09.19	Giant squirrel	Adult	F	Pneumonia and enteritis
20	23.09.19	Nilgiri Langur	About 17 yrs	F	Necrotic hepatitis
21	04.10.19	Hippopotamus	About 4 yrs	F	Acute pneumonia and haemorrhagic enteritis
22	05.10.19	Bonnet macaque	Adult	M	Septicemia
23	15.10.19	White tiger	5yr 2 mn	M	Haemorrhagic enteritis, hepatitis, jaundice and ascites
24	16.10.19	Nilgai	Adult	M	Debility and old age
25	21.10.19	Marmoset	Adult	F	Gastro enteritis



26	04.11.19	Sambar	Adult	F	Nasal tumor
27	05.12.19	Manipuri deer	--	M	Still birth
28	05.12.19	Manipuri deer	About 14 yrs	F	Internal haemorrhage and shock
29	08.12.19	Spotted deer	Adult	F	Pneumonia associated with old age
30	24.12.19	Spotted deer	Adult	M	Infighting
31	28.12.19	Asiatic lion	About 21 yrs	M	Emaciation, haemorrhagic gastro-enteritis associated with old age
32	30.12.19	Leopard	About 14 yrs	F	Rupture of wall of oro-pharynx with extensive haemorrhage leading to aspiration and respiratory failure associated with ascites and tumor in colon and uterus
33	04.01.20	Hyena, striped	About 4yrs	M	Haemorrhagic gastro-enteritis with acute Pneumonia
34	12.01.20	Barking deer	Adult	M	Cause of death couldn't be ascertained due to advanced putrefaction of carcass
35	11.02.20	Wild dog	About 5 yrs	F	Acute haemorrhagic gastro-enteritis
36	12.03.20	Hog deer	About 2 yrs	F	Haemorrhagic Myositis
37	12.03.20	Black buck	Adult	F	Pneumonia
38	13.03.20	Hog deer	About 3 years	F	Mixed infection of Haemorrhagic septicemia and Black Quarter
39	13.03.20	Hog deer	Adult	F	Mixed infection of Haemorrhagic septicemia and Black Quarter
40	14.03.20	Spotted deer	Adult	F	Mixed infection of Haemorrhagic septicemia and Black Quarter
41	14.03.20	Spotted deer	Adult	F	Mixed infection of Haemorrhagic septicemia and Black Quarter
42	17.03.20	Leopard	About 16 years	M	Hepatitis, haemorrhagic cystitis associated with aspiration food into trachea and bronchi
43	18.03.20	Hog deer	About 4 yrs	F	Septicemia
44	25.03.20	Black buck	Adult	M	Pneumonia

### **BIRDS**

1	16.04.19	Reeve's Pheasant	About 1yr	M	Pneumo-enteritis
2	18.04.19	Sun Conure	Adult	M	Traumatic injury
3	26.04.19	Swainson's Lorikeet	About 2 yr	F	Haemorrhagic enteritis
4	28.04.19	White Peafowl	Adult	M	Pneumo-enteritis
5	03.05.19	White Necked Stork	Adult	M	Trampled under the tree During cyclone
6	19.05.19	Night Heron	Adult	F	Traumatic injury
7	30.05.19	Sun Conure	Adult	M	Hepatitis and Nephritis
8	30.05.19	Sun Conure	Adult	F	Hepatitis and Nephritis
9	07.06.19	Violet Turaco	Adult	M	Haemorrhagic enteritis

10	07.06.19	Golden Pheasant	Adult	M	Enteritis
11	24.06.19	Golden Pheasant	Adult	M	Enteritis and hepatitis
12	26.06.19	Sun Conure	Adult	F	Pneumonia
13	26.06.19	Mandarin Duck	Adult	M	Tumor at Trachea
14	30.06.19	Black Swan	Adult	F	Acute Pneumoenteritis
15	12.07.19	Ring necked parakeet	Adult	M	Internal haemorrhage
16	16.07.19	Lady Amherst's pheasant	Adult	M	Enteritis
17	20.07.19	Sun conure	Adult	M	Haemorrhagic enteritis
18	22.07.19	Sun Conure	Adult	F	Haemorrhagic enteritis
19	01.08.19	Mandarin duck	Adult	F	Tumor in lungs
20	02.08.19	Mandarin duck	Adult	F	Predator bite
21	04.08.19	Pineapple conure	Adult	M	Hepatitis and nephritis
22	20.08.19	Barn owl	Adult	M	Infighting
23	24.08.19	Yellow sided conure	Adult	F	Snake devoured
24	30.08.19	Barbary dove	Adult	F	Senility and inanition
25	17.10.19	Swainson's lorikeet	About 2 yrs	F	Enteritis
26	18.11.19	Red munia	Adult	M	Debility with old age
27	27.11.19	Silver pheasant	About 2 yrs	M	Infighting
28	15.12.19	Ring necked Parakeet (Lutino)	Adult	M	Pneumonia & enteritis
29	15.12.19	Ring necked Parakeet (Lutino)	Adult	F	Pneumonia & enteritis
30	22.12.19	Mandarin duck	Adult	F	Hepatitis
31	30.12.19	Lovebird (Fischer)	Adult	F	Enteritis
32	31.12.19	Pineapple conure	Adult	F	Haemorrhagic enteritis
33	14.01.20	Barn Owl	Adult	M	Infighting
34	29.01.20	Sun conure	Adult	M	Enteritis
35	01.02.20	Mandarin duck	Adult	M	Tumor in lungs
36	04.02.20	Silver Pheasant	About 2 yrs	M	Infighting
37	04.02.20	Golden Pheasant	About 2 yrs	M	Infighting
38	07.02.20	Love bird Fischers	Adult	F	Enteritis
39	09.02.20	Barn Owl	Adult	F	Hepatitis associated with old age
40	24.02.20	Golden Pheasant	About 3 yrs	M	Infighting
41	14.03.20	Sun conure	Adult	F	Hepatitis & nephritis
42	14.03.20	Jandaya conure	Adult	F	Hepatitis & nephritis
43	18.03.20	Ring necked Parakeet (Lutino)	Adult	F	Devoured by snake
44	18.03.20	Ring necked	Adult	M	Mutilated, cause of death couldn't be

		Parakeet (Lutino)			ascertained
45	23.03.20	Jandaya conure	Adult	M	Hepatitis and enteritis
46	23.03.20	Jandaya conure	Adult	F	Hepatitis and enteritis

## REPTILES

1	06.08.19	Water monitor lizard	Adult	F	Septicemia
2	24.09.19	Siamese crocodile	About 5 yrs	F	Hepatitis
3	28.11.19	Yellow Anaconda	About 2 yrs	F	Acute hemorrhagic enteritis
4	30.11.19	Yellow Anaconda	About 4 yrs	M	Acute hemorrhagic enteritis
5	05.01.20	Water Monitor lizard	About 4yrs	M	Visceral Gout
6	19.01.20	Water Monitor lizard	Adult	M	Pneumonia
7	02.02.20	Green Iguana	About 5 yrs	M	Haemorrhage in lungs
8	10.03.20	Red Iguana	About 5 yrs	F	Egg bound condition

## ABSTARCT

Mammals	Birds	Reptiles	Total
44	46	08	98

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

<b>2018 EVALUATION COMPLIED SECTION</b>						
Sl.No.	Norm No	Condition stipulated	Time period to comply	Since when pending	Remarks	
					Status with regard to compliance of the conditions as submitted by the Officer-in-charge the zoo	Status with regard to compliance as noted physically by the evaluator during the visit.
1	2	3	4	5	6	7
<b>General requirement</b>						
1.	10.1(2)	The zoo operator should plant endemic trees in various animal enclosures to provide shade and shelter to the animals	One year	13.04.2018	Complied. Mass plantation drive after cyclone 'Phani' carried out.	Complied .
2.	10.1(3)	The herbivore enclosures where the visitors move in the front as well as back of the enclosure towards the lake side should have visitors access stopped/ blocked/ restrained from the lake side.	One year	13.04.2018	Complied	Complied .
<b>3.</b>	<b>Development and Planning</b>					

4.	10.3(3)	<p>The <i>pucca</i> buildings including the visitor facilities needs to be properly camouflaged and located in such a manner that the natural landscape of the zoo have not been masked and the cleanliness and hygiene of the zoo is not affected due to such animal enclosures/structures.</p>	Immediately	13.04.2018	Complied	Complied
5.	10.3(8)	<p>The zoo has been acquiring the rescued animals since around 20 years but they never informed the CZA in this regard. What they do is, they prepare a list of the rescued animals housed in the zoo for around 5 years and submit proposal to the CZA for their regularization. It should be stopped and statutory provisions in this regard be followed. It has happened three times in the past around 20</p>	Immediately	13.04.2018	Complied, List of rescue animals already communicated till January, 2020.	Complied

		years. It should be stopped and statutory provisions <i>in this regard</i> be followed.				
6.	10.3(8)	The zoo should submit information to the CZA about the rescued animal that pertains to an endangered species.	Immediately	13.04.2018	Complied	Complied
7.	10.4(2)	The old aviary near the rest house should be demolished and appropriately designed aviaries supporting the natural conditions of the birds should be constructed	One year	13.04.2018	Complied	Complied
8.	10.4(3)	The elephant should not be kept tethered at the zoo. The elephant should be left out for foraging in the enclosure during early hours and late hours for natural exercising, beside the controlled exercise as at present by Mahouts	One year	13.04.2018	Complied	Complied

9.	10.4(6)	The zoo should endeavor to simulate the conditions of the natural habitat of the animal in the enclosures as closely as possible. Appropriate species of plants, shrubs should be planted inside animal enclosure. The animal enclosures should also be provided various artefacts for enriching the environment of animal enclosures. The aviaries should be provided appropriate wooden logs for perching and roosting and nesting material to nest.	One year	13.04.2018	Complied and being updated periodically	Complied
10.	10.4(9)	All the animal enclosure should be provided with appropriate Stand-off barriers and adequate warning signs should be provided for keeping the visitors at a safe distance from the animals.	One year	13.04.2018	Complied	Complied
11.	10.4(9)	Green hedge needs to be replanted inside standoff	One year	13.04.2018	Complied	Complied

		barrier wherever destroyed! damaged.				
12.	10.4(10)	The signages are not being looked after and maintained properly after wear and tear due to natural process or visitor vandalism.	One year	13.04.2018	Complied	Complied
13.	<b>Upkeep and health care of Animals</b>					
14.	10.5(3)	The meat house should be made effectively fly proof.	Immediately	13.04.2018	Complied, provided with air curtain and mosquito nets	Complied
15.	10.5(3)	Zoo should have a sufficient size functioning freezer for storage of meat and to keep it cold until it is fed to the animals.	Immediately	13.04.2018	Stored meat is not supplied to our animals. However freezer is available to store other feed item other than meat.	Complied
16.	10.5(3)	The Store house for food should be made rodent proof and storage conditions of feed items need improvement to make it damp proof,.	Immediately	13.04.2018	Complied	Complied



17.	10.5(2)(3)	The zoo should have proper drainage system for Meat House Complex.	Immediately	13.04.2018	Complied	Complied
18.	10.5(10)	Animal Herd Sheets should be prepared for species housed at the zoo.	One year	13.04.2018	Herd sheet format is not available. Same is maintained using CZA prescribed studbook format to keep relevant information about the herd animals	Complied
19.	<b>Veterinary and infrastructure facilities.</b>					
20.	10.6(5)	The Zoo should have one qualified Lab Assistant to assist the veterinarian in healthcare of the Zoo animals.	Immediately	13.04.2018	Complied	Complied
21.	<b>Research Activities</b>					
22.	10.10	The zoo should implement a research plan and conduct research on the prioritized species and specific areas of	One year	13.04.2018	Research plan in Master plan is implemented. Detailed Research plan will also be included in	Complied

		concern.			the new Master Plan of the zoo.	
<b>23.</b>	<b>Visitors' Facilities</b>					
24.	10.12(1)	The zoo should provide neat and clean civic facilities for visitors. They should be made available to the physically disadvantaged person also at all existing places.	Immediately	13.04.2018	Complied	Complied
25.	10.12(3)	Appropriate arrangements should be made to provide access within the Zoo to physically disadvantaged visitors including those in the wheel chair at all enclosures and civic facilities.	Immediately	13.04.2018	Complied	Complied

**Details of non-compliance of the conditions of the evaluation year 2009, 2013 and 2018**

Sl.No.	Norm No	Condition stipulated	Time period to comply	Since when pending	Remarks	
					Status with regard to compliance of the conditions as submitted by the Officer-in-charge the zoo	Status with regard to compliance as noted physically by the evaluator during the visit.
1	2	3	4	5	6	7
<b>Yet to be complied- 2009 Evaluation</b>						
26.	36	The zoo has excess number of spotted deer in its collection. The zoo operator shall be responsible for ensuring that the number of animals of any species does not go beyond the holding capacity of the enclosures available in the zoo and housing standards are not compromise for keeping the excessive numbers.	With immediate effect	22.09.2009	Population control measures are being adopted to keep the population under control. Vasectomy and segregation of breeding males are carried out periodically.	The authorities now should try to send this population to different wildlife protected area in consultation with the concerned authorities
<b>Yet to be complied-2013 Evaluation</b>						
27.	10.4(3)	(i) Chain-link erected outside moat barrier on viewers side needs to be	Within three months	11.9.2013	Complied for many enclosure except the enclosure	The chain-link mesh beyond the standup barrier in carnivore

		removed.			housing carnivore considering visitor safety.	enclosures are provided as extra safety measures for small children
28.	10.9(9)	Excess number of spotted deer, sambar and hippopotamus need to be either exchanged or shifted out of display area.	Within 6 months	11.09.2013	Hippopotamus were given in exchange and donation. Population control measure carried out for deer species.	Efforts must be made to send the sambar, spotted deer to different wildlife protected area in consultation with the concerned authorities. Efforts should be made to send hippos (14 nos. as on 06.02.20020) to other zoos.
<b>Yet to be complied of 2018 Evaluation</b>						
29.	10.1(4)	The boundary wall is not effective since the stray dogs have entered in the zoo.	Immediately	13.04.2018	Boundary wall of zoo is intact.	Security persons need to more vigilant to prevent entry of stray dogs through gate.
30.	10.1(7)	The Zoo should provide a proper waste disposal system as per natural gradient of the area for treating both the solid and liquid wastes generated in the Zoo. There should be waste	Immediately	13.04.2018	Solid wastes are disposed properly. Waste disposal vehicle, bottle crusher, twig shredder, food material composting unit and vermicompost unit are operational in	The solid wastes should be disposed off at the earmarked 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

		disposal system having no adverse impact on the environment. The present system is not effective and out flow is not proper.			the zoo. Steps are being taken for liquid waste treatment plant.	released in the Kanjia lake.
<b>31.</b>	<b>1.</b>	<b>Administrative and Staffing Pattern</b>				
32.	10.2(1)	The Zoo Director's Office should be located within the premises of the zoo to make the daily attendance of the Director more visible and beneficial for the day to day management of the zoo.	One year	13.04.2018	It is not situated within the premises of the zoo, However, office of the Deputy Director is situated inside the zoo premises. Already Rs 7.00 crore is kept in the budget of Society for construction of Administrative Building	The authority should expedite the proposal to construct the administrative building including the chamber of the Director.

33.	10.2(2)	The zoo should post an official with Master's Degree in Wildlife Science/Zoology as full time Curator solely responsible for looking after the upkeep of animals and maintenance of animal enclosure.	One year	13.04.2018	Assistant Conservator of Forest of Sanctuary Management is declared as Curator by Government of Odisha.	Full time curator having Master's Degree in Wildlife Science/Zoology should be recruited.
<b>34.</b>	<b>2. Development and Planning</b>					
35.	10.4.(2)	Some reptiles in Reptile park have inadequate space with respect to prescribed CZA dimensions.	One year	13.04.2018	Five enclosures are renovated following the suggestion. Work is under progress for other reptile enclosure	There are a number of enclosures where the space is still 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.
36.	10.4(2)	Appropriately designed natural enclosure should be provided for all the primate species being displayed by the zoo.	One year	13.04.2018	Three new naturalistic enclosures have been constructed to house three species of primates. Enclosure	The enrichment of the enclosures of rhesus monkey and bonnet monkey and Hamadryas baboon should be increased.

					enrichments added to other primate enclosures	
37.	10.4(3)	(i) Chain-link erected outside moat barrier on viewers side needs to be removed.	One year	13.04.2018	Complied for many enclosure except the enclosure housing carnivore considering visitor safety.	The chain-link mesh beyond the standup barrier in carnivore enclosures are provided as extra safety measures for small children
38.	10.4(6)	The artificial shelters provided on the macaque islands should be made naturalistic so that it merges with the overall environment /landscape of the enclosure.	One year	13.04.2018	Work in progress	The speed of work should be enhanced to provide naturalness.
39.	10.4(8)	The zoo has constructed a Bear Safari which is not as per the laid down norms of the CZA.	One year	13.04.2018	Extension of Bear Safari is in progress. The plan and estimate will be submitted to CZA soon.	Extension of Bear Safari needs to be done as per CZA norms. The present area is 4.1ha.

40.	10.4(9)	The height of the stand-off barriers is not as per the CZA norms. Further, a chain-link mesh has been erected between the stand-off barriers and the moat wall obstructing visitors viewing area. It should be removed.	Immediately	13.04.2018	Provided considering visitors safety	There are number of enclosures where height of stand-off barrier is not as per CZA norms. It should be reduced in phase manner.
<b>41.</b>	<b>9.Acquisition and breeding of animals</b>					
42.	10.9(4)	The zoo should acquire mates for all single animals such as (Hill Myna, White Spoonbill, Long Billed Vulture, White Backed Vulture, Black Buck (Albino). Leopard Cat, Indian Small Civet, Salt Water Crocodile, two species of Python, Rat Snake, Ganges Soft-shelled Turtle, Russell's Viper, Sarus Crane, Large	Immediately	13.04.2018	Pairing done for Reticulated python, Painted Stork, Long Billed Vulture,  Pairing made for Giraffe, but male received from Alipore zoo died. Exchange proposal for a pair of giraffe with Mysore zoo was approved by CZA, but the zoo denied for the same later. Procurement procedure continuing for other animals.	Efforts should be made for pairing for animals such as Giraffe, Sarus crane, leopard cat, Asiatic lion, African lion, spoon bill, hill mynah.



		<p>Egret, Median  Egret, Black  Headed  Munia,  Spotted  Munia,  Oriental Scops  Owl, Blossom  Headed  Parakeet,  Adjutant Stork  (lesser),  Painted Stork,  White Neck  Stork, Indian  Porcupine,  Lesser Sulphur  Crested  Cockatoo,  White  Cockatoo, Star  Finch, Yellow  Backed Lorry,  Blue &amp; Yellow  Macaw,  Yellow Golden  Pheasant,  Mute Swan,  Giraffe,  Orangutan)  etc. on priority  basis.</p>				
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43.	10.9(12)	The hybrid lions need to be phased out of the zoo and replaced with pure breed of Asiatic lions.	Immediately	13.04.2018	No zoo is willing to take the hybrid lions and give Asiatic lion.	Efforts should be made to phase out this species
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The last evaluation of the zoo was carried out between 5<sup>th</sup> and 6<sup>th</sup> February 2020 by the Zoo Evaluation committee of CZA as per Recognition of Zoo Rules, 2009. The recommendations are yet to be received at our end.

**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 Poprcupine	<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
DACELOPIDAE			
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>Eudynamis scolopacea</i>	VC
27	Pied Cuckoo	<i>Clamator jacobinus</i>	R
28	Common hawk Cuckoo	<i>Hierococcyx 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 oedicnemus 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	Woolly-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