

# NORTH BENGAL WILD ANIMALS PARK

BENGAL SAFARI

Annual Report for the year  
2017-18



**North Bengal Wild Animals Park**  
**WEST BENGAL ZOO AUTHORITY**

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

The Annual Report for the year 2017-18 had been submitted to Central Zoo Authority but it has been in the new format sent by CZA. Hence the revised report is as follows:

## **2. History of the Zoo**

West Bengal is a rich State in wild life. It has 5 national parks and 15 wild life sanctuaries. This state exhibits varieties of forest types. It has tropical – semi ever green to mangrove scrub, moist bamboo brakes to Terai and Sal forest. Varied habitats provide home and shelter to wild animal like elephant, tiger, leopard, sloth bear, gaur, sambhar, barking deer, small cats, crocodile, gharial, jungle fowl and a number of terrestrial birds. Siliguri is situated in North Bengal and is gate way to North East India. This place is famous for wild life and varied habitat.

Bengal safari is situated 8 km from Siliguri and at present have tiger safari, mixed herbivore safari, Asiatic black bear safari and zoo. In the mixed herbivore safari one will enjoy different species of deer, wild boar and various different birds. In the black bear safari, one can see the Asiatic Black Bear. In the tiger safari, one will be fortunate to see the Royal Bengal Tiger.

One may opt for the combo 1 safari, which includes the tiger as well as the herbivore safari or the combo 2 safari, which includes the tiger, herbivore as well as the black bear safari or only the tiger safari. Bengal Safari also provides Elephant rides for visitors. One can also enjoy the view of different birds, cats and gharial on foot.

All the animal enclosures have been divided into 7 beats for proper management. It is proposed to display over 236 animals comprising of 26 species. The quality of animal care, exhibits and conversation education will be of higher level.

The whole safari has been divided into 8 sections viz animal, veterinary, sanitation & horticulture, security, commissary (store), construction & maintenance, education cum-research, and administration. Each section will be headed by a well qualified and professional incumbent who is in tune with the recommendation of expert committee on zoos.

A well equipped veterinary hospital with diagnosing and testing facilities, supported by adequate technical man power has been made. The veterinarian takes a daily round of the safari to observe the health, feeding and general hygienic condition of the animals.

The education cum-research wing enhances the knowledge and creates awareness among visitors through signages, published material, lectures and guided tours. It also conducts studies on behavior, growth and nutrition requirement of animals.

About 5 lakh visitors are expected to visit this place every year. This number is likely to increase in future. Efforts have been made to provide adequate facilities like cafeteria / kiosk, parking, toilets, shelters and drinking water points for the visitors for their smooth and rewarding visit.

In order to meet unforeseen incidents, a detailed disaster management plan and contingency plan have been incorporated. A plan to upgrade the skill of animal keepers and other staff, a capacity building plan has also been prepared. With the development in IT sector, e-governance is also being used in terms of stock upkeep and daily reporting. This will help to maintain the record and data of animals and related issues for easy interaction with national and international experts and

institutes.

The North Bengal Wild Animals Park, Siliguri will be one of the role model in terms of facilities, infrastructures and management practices. Moreover, it will showcase the rich biodiversity of state of West Bengal.

### **3. Vision**

The North Bengal Wild Animals Park, Siliguri, West Bengal is to provide a glimpse of wild animals and birds of the North Bengal plains to the general public for developing a healthy relationship between animals and human beings and to promote conservation of our invaluable faunal resources through display, care and awareness. The safari is an endeavour to breed the endangered species for display, exchange and rehabilitation in the wild. This safari is a showcase of rich biodiversity of the state of West Bengal.

### **4. Mission**

This Wild Animal Park, Siliguri intends to complement the national efforts in conservation of wildlife through breeding of endangered species of the region and to develop an empathy among visitors for wild animals.

### **5. Objectives**

A professionally run Park will serve a great variety of roles to benefit both the animals it displays and the visiting public. Breeding programmes can help propagate endangered species and continue gene pools for species whose habitats have been obliterated. Educational programmes can help foster the respect that wild animals deserve and familiarize the visitors with the important role these animals play in the ecosystem. Large scale habitat destruction has resulted in the extinction of many species. The park may have to serve as the last bastion for threatened and endangered species.

The park shall work for the conservation of the rich bio-diversity of the region to the following objectives:

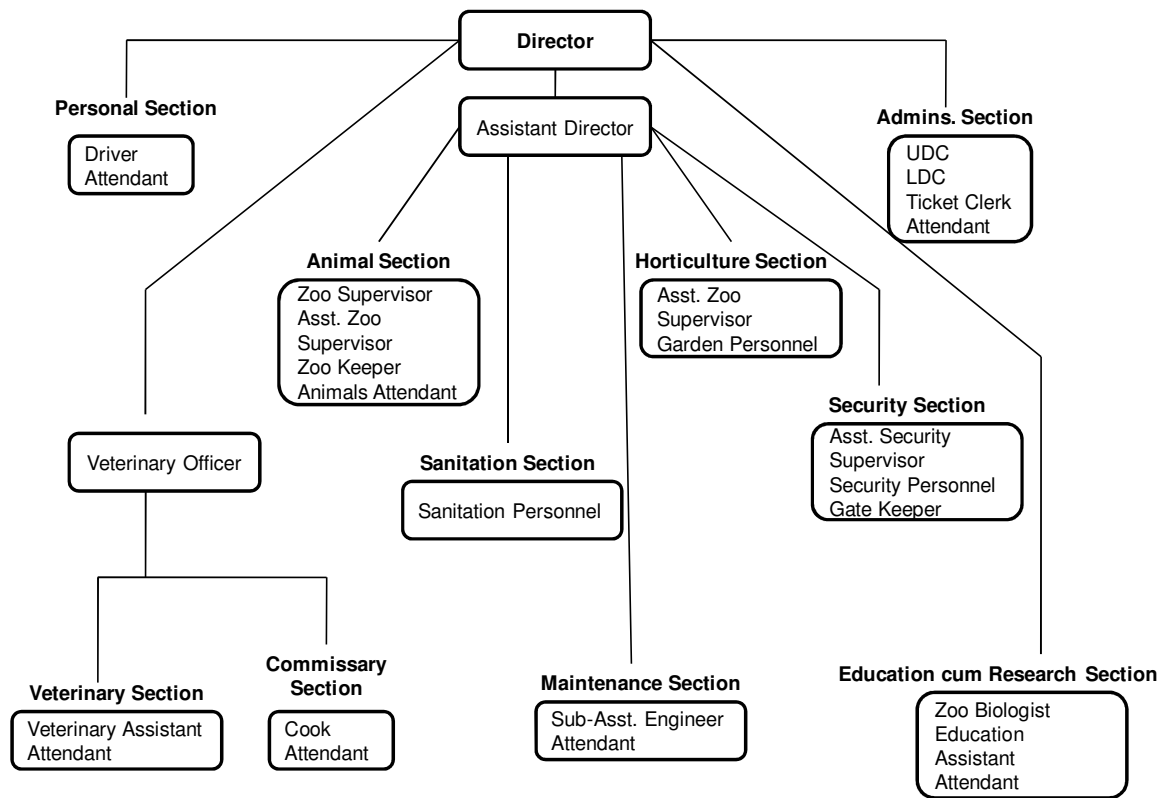
- The objective of the park shall be the conservation of the rich biodiversity of the region i.e. North Bengal, as the animal species displayed shall be from the North Bengal eco-system only.
- To reduce the tourist pressure on the National Parks/Protected Areas.
- To create amongst the visitors empathy towards wild animals through appreciation and better understanding.
- To collect and collate the scientific data on the biology, behaviour and health care of various species of wild animals displayed in the safari and use the same in future management of the safari park.
- Recreation for the purpose of providing wholesome, healthy and educational activity to a large number of people by utilizing the outdoor natural setting without detriment to any of the preceding objectives.

## 6. About us

S.No.	Particulars	Information
<b>Basic Information about the Zoo</b>		
1	Name of the Zoo	North Bengal Wild Animals Park
2	Year of Establishment	2015
3	Address of the Zoo	North Bengal Wild Animals Park, 5 <sup>th</sup> Mile, Sevoke Road, Salugara, Siliguri- 734008
4	State	West Bengal
5	Telephone Number	+91 9832042165 08231904905(IVR)
6	Fax Number	-
7	E-mail address	<a href="mailto:dirnbwap@gmail.com">dirnbwap@gmail.com</a> <a href="mailto:arun4202@gmail.com">arun4202@gmail.com</a>
8	Website	<a href="http://www.northbengalwildanimalspark.in">www.northbengalwildanimalspark.in</a>
9	Distance from nearest	Airport: Bagdogra
		Railway Station: New Jalpaiguri
		Bus Stand: Siliguri
10	Recognition Valid upto (Date)	27.09.2019
11	Category of zoo	Mini
12	Area (in Hectares)	297
13	Number of Visitors (Financial Year)	Total Visitors: 272250
14	Visitors' Facilities Available in Zoo	<ul style="list-style-type: none"> <li>• Cloak Room</li> <li>• Wheel Chair</li> <li>• Normal &amp; Chilled certified drinking water</li> <li>• Washroom</li> </ul>

S.No.	Particulars	Information
		<ul style="list-style-type: none"> <li>• Cafeteria &amp; Canteen</li> <li>• Children playing area</li> <li>• Sitting arrangement</li> <li>• First aid</li> <li>• Leaflets &amp; bag</li> <li>• Souvenir Shop</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. Arun Kr. Mukhopadhyay (IFS)
	Name of the Veterinary Officer	Dr. Nick Doley, DR. Subhash Das
	Name of the Curator	Mr. Ranjan Talukdar (WBFS)
	Name of the Biologist	Mr. Aditya Mitra
	Name of the Education Officer	Dr. Rajib Biswas
	Name of the Compounder/ Lab Assistant	
<b>Owner / Operator of the Zoo</b>		
17	Name of the Operator	Mr. V.K. Yadav, IFS, Member Secy
18	Address of the Operator	West Bengal Zoo Authority 2 <sup>nd</sup> Floor, Ban Unnayan Bhawan, KB-19, Sector-III, Salt Lake City, Kolkata, West Bengal 700098
19	Contact details/Phone number of Operator	+91 33 23355010
20	E-mail address of Operator	mswbza@gmail.com, wbzooauthority@yahoo.com

## 7. Organizational Chart



## 8. Human Resources

### Manpower of the Zoo

Sl.No	Designation	Number of Sanctioned Posts	Names of the incumbent
1.	Director	1	Arun Mukhopadhyay, IFS
2.	Asst. Director	0	Ranjan Taukdar, WBFS
3.	Veterinary Officer	1	Dr Nick Doley Dr Suvash Das, Retd-
4.	Asst. Engineer	-	Sri Tuhin Nag Biswas
5.	Zoo Biologist	1	Shri Aditya Mitra
6.	Zoo Educator	-	
7.	Sub Assistant Engineer (Civil)	1	



8.	Sub Assistant Engineer (Elec.)	-	
9.	Kitchen Supervisor (Dietician )	-	
10.	Zoo Supervisor	1	Shri Narayan Ch. Roy(Retd ADFO)
11.	Garden Supervisor	-	
12.	Sanitary Supervisor	--	
13.	Research Assistant	-	
14.	Education Assistant	1	
15.	Library Assistant	---	
16.	Taxidermist	-	
17.	Laboratory Assistant	-	
18.	Veterinary Assistant	1	
19.	Asst. Zoo Supervisor	2	Shri Tarun Mahalanabish (Retd RO)
			Sri Tarun Mandal (Retd)- Vehicle Section
20.	Asst. Estate/ Security Supervisor	1	
21.	Asst. Garden Supervisor	--	
22.	Asst. Security Supervisor	1	Shri Bir Bahadur Tamang
23.	Gate Keeper	1	
24.	Driver	1 +5	Shri Kusang Tamang
			Shri Prakash Majhi
			Shri Brishlal Saibo
			Shri Tilak Bh Ale (Ex Army)
			Shri Manik Roy
			Shri Utpal Debnath

25.	Zoo Keeper	10	Ranjit Thapa(Deputed from PNHZP)
			Aditya Tamang(Deputed from PNHZP)
26.	Mahut	-	5 nos
27.	Cook	0	
28.	Head Clerk	-	
29.	Accountant	1	Sm. Swarnali Dutta Roy
30.	P.A.	-	
31.	Store-keeper	-	
32.	UDC /OA/TA	1	
33.	LDC	1	Shri Pappu Shah
34.	Ticket Clerk	1	Sm. Manila Thapa
35.	Support Staff (On Contract) :		
	a) Security	12 +12	1. Shri Anil Shaibo
			2. Shri Karan Marandi
			3. Shri Rakesh Majhi
			4. Shri Sudesh Barik
			5. Smt. Krishna Thapa
			6. Shri Raj Thapa
			7. Shri Ashik Thawas
			8. Shri Manish Gajmer
			9. Shri Rajesh

			Lal Saibo
			10. Shri Kalyan Sharma
			11. Shri Chandra Kr. Chetri
			12. Shri Biswajit Karjee
			13. Shri Ranjit Saibo
			14. Shri Asit Kr. Bhujel
			15. Shri Bikram Malpahary
			16. Shri Hemant Pradhan
			17. Aminur Rahman
			18. Shri Himu Barman
			19. Shri Gopal Chettri (Ex Serviceman)
			20. Rambahadur Khawas Arm-Guard
			21. Sm Tripti Sarkar Lady-Guard
			22. Sm Shila Saibo Lady-Guard
			23. Sm Dina Lama Lady-Guard
			24. Sri Biken Sunwar (Ex Service)
	b) Sanitation Attendant	6	1. Shri Ravi

			Paswan
			2. Shri Sanjib Hela
			3. Shri Sukul Hela
			4. Shri Suraj Paswan
			5. Shri Manish Lal Saibo
	c) Garden Attendant	6	1. Shri Indra Bh. Thapa
			2. Shri Krisna Adhikary
			3. Shri Dhanesh Roy
			4. Sri Joyjit Barman
			5. Sri Kalyan Barman
			6. Shri Subal Pradhan
	d) Attendant	7	1. Shri Asit Narjinary
			2. Shri Raju Saibo
			3. Shri Rinku Roy
			4. Pavitra Chetri
			5. Sri Binod Rai (Ex Service)
			6. Shri Subas Thapa Chettri
	e) Animal Attendant	10	1. Shri Kumar Chetri
			2. Shri Unish Saibo

			3. Shri Avinash Chetri
			4. Shri Hem Kr. Mahapatra
			5. Shri Ajit Roy
			6. Shri Gopal Biswakarma
			7. Shri Subal Pradhan
			8. Sri Rahin Saiboo
37.	Range Officer	0	Deepak Rasaily, FR

#### 9. Capacity Building of zoo personnel

Sl.No.	Name and designation of the zoo personnel	Subject matter of Training	Period of Training	Name of the Institution where the Training attended
1	Sri Aditya Mitra Zoo Biologist	Enrichment of Animals Enclosures in Zoos	30.01.2018, 31.01.2018	Zoological Garden, Alipore
2	Dr. Subhash Das, VO, Sri Tarun Mahalanabish, Asst. Zoo Supervisor, Sri Sujoy Dutta, Veterinary Asst., Sri Raj Thapa, Security Personnel	Tranquilization Training		Zoological Garden, Alipore

#### 10. Zoo Advisory Committee –

##### a. Date of Constitution

The Governing Body of the Authority (**Govt. Notification No. 10036-for/11M-27/2002, dt. 23.12.2009**) consists of following 14 members.

## b. Members

The Chief Secretary to the Govt. of West Bengal	Chairman
Addl. Chief/Principal Secretary to the Govt. of West Bengal, Dept. of Forests	Vice-Chairman
Secretary, West Bengal Zoo Authority	Member-Secretary
Secretary to the Govt. of West Bengal, Dept of Finance	Member
Principal Chief Conservator of Forests & HOFF, West Bengal	Member
Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, West Bengal	Member
Member Secretary, Central Zoo Authority, New Delhi	Member
Director, Animal Husbandry & Vet. Services, W.B	Member
Director, Padmaja Naidu Himalayan Zoological Park, Darjeeling	Member
Director, Zoological Garden, Alipore, Kolkata	Member
Shri Debasish Paramanik, Raigunj Panchayet Samiti, Uttardinaipur	Member
Shri Sankar Dhar, People's for Animals, Alipurduar	Member
Sk. Johar Ali, President , All Backward Class Relief & Development Mission	Member
Smt. Debolina Biswas, Councilor, Kolkata Minicipal Corporation, Ward No. 74	Member

## c. Dates on which Meetings held during the year

14th GB Meeting: 16-05-2017

## 11. Health Advisory Committee–

### a. Date of Constitution

The Health Advisory Committee constitutes the Technical Committee of the West Bengal Zoo Authority. The Governing Body of the West Bengal Zoo Authority in its 4th meeting decided to constitute a Technical Committee (the composition and terms of reference again ammended in the 10th GB meeting) for assisting the West Bengal Zoo Authority on the technical matter. The composition of the Technical Committee is as follows:

### b. Members

PCCF (WL) & CWLW, WB	Chairman.
Dr B R Sharma, IFS	Zoo Expert
Director	Animal Husbandary and Veterinary Services West Bengal
Director	Zoological Garden, Alipore (Kolkata)
Director	Padmaja Naidu Himalayan Zoological Park, Darjeeling
Member-secretary	West Bengal Zoo Authority-Convenor.

## c. Dates on which Meetings held during the year

16th Technical Committee Meeting: 08/03/2018

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

Plan Budget: 8.39 Cr

Non Plan Budget: 3.22 Cr

Revenue: 2.08 Cr

(\*Unaudited figure)

## 13. Daily feed Schedule of animals

No.	Animals	No. of Individuals	Items	QUANTITY (Approx)	DRY WT (WET WEIGHT)	Time
1	Sambar	27				
2	Spotted Deer	353	Grams	70KG	168.650KG	
3	Barking Deer	27	Wheat Bran	32KG	(300KG)	
			Crushed maize	32KG		
			Moong Dal	16KG		
4	Hog Deer	04	Masoor Dal	16KG		Early morning(8.45am-9.30am)
			Salt	2.5KG		
			Turmaric	150G		
			Green fodder	Yes		
5	Wild Boar	07	Salt lick with added vitamins, minarals	Yes		
6	Indian Rhino	01	Corn	100 NOS		
			Green fodder	80 KG	116 KG	Morning (10am)
			Carrot	2 KG		Evening(4pm)
7	Bengal Tiger	Female 01 Male 02	Chicken	(OFF DAY)		
			Beef/Buffalo w/b	2-3KG /TIGER		
			Buffalo /Beef boneless	7 KG	23KG	Evening(6pm)
			With Vitamin A, Calcium	8 KG		
8	Indian Palm Civet	03	Chicken	4 KG	4KG	Evening(5.30pm)

9	Jungle Cat	03				
10	Fishing Cat	02				
11	Birds & Pheasants	114	Grams Crushed Maize Moong dal Masur Dal Wheat Carrot Cabbage Watermelon Chilly Guava Apple Musambi Onion Groundnut Banana Maize Seasonal Fruits	1KG 1KG 150G 150G 1.5KG 500G 1.5KG 1PC 250G 500G 500G 500G 300G 2.5KG 3 DOZON 30NOS	23.85KG (29.4KG)	Morning(7am-9am) & Afternoon (4pm-5pm)
12	Asiatic Black Bear	2	Rice Grams Egg Milk Sattu Roti Molasses Fruits(seasonal) Vegetables (Seasonal) Watermelon Soup	500G 500G 4NOS 1 LITRE 300G 500G 600G 1KG 2KG 1 4LITRE	11.5KG (15KG)	Morning(7am-9am) Afternoon (4pm-5pm)



			Beaf/Buffalow	500G		
			Honey	AS REQUIRED		
13	Elephant	02	Rice	8KG	11 KG+	Morning Afternoon (5pm-6pm) Night (fodder)
			Dal	2KG		
			Mollasses (Winter)	1KG		
			Salt	100G		
			Banana plants	10PCS		
			Turmeric Powder	SMAAL QUANTITY		
			Green Fodder	SUFFICIENT QUANTITY		
14	Lesser Adjutant Stork	02				
			Small Fish	1.5KG	1.5KG	Early Morning(7am-9.30am)
15	Indian Pond Heron	01				
16	Gharial	05	Live fish	10KG	10KG	Early Morning (Thrice a week)
17	Turtles and Tortoise	58	Fish	1KG		
			Chicken	0.5KG	1 kg	Mid-day(9-10am)
			Carrot	0.25KG	2 kg	
			Cabbage	0.20KG		

#### 14. Vaccination Schedule of animals

Sl.No.	Species	Disease vaccinated for	Name of the Vaccine and dosage/ quantity used	Periodicity	Remarks
1	Tiger	Calcivirus, Rhino-tracheitis, Panleukopenia	Feligen 1ml	Annually	
2	Tiger	Rabies	Raksharab 1ml	Annually	

3	Asiatic Elephant	FMD, Haemorrhagic Scepticaemia, Black quarter	Triovac 3ml	Annually	
4	Asiatic Elephant	Rabies	Raksharab 1 dose	Annually	
5	Asiatic Elephant	tetanus	Tetanus toxoid 1dose	Annually	
6	Asiatic Elephant	anthrax	Anthrax spore vaccine 1 dose	Annually	
7	Jungle Cat	Calcivirus ,rhinotracheitis panleukopenia	Feligen 1dose	annually	
8	Jungle Cat	Rabies	Raksharab 1 dose	annually	
9	Fishing Cat	Calcivirus ,rhinotracheitis panleukopenia	Feligen 1 dose	annually	
10	Fishing Cat	Rabies	Raksharab 1 dose	Annually	
11	Asiatic Black Bear	Rabies	Rabigen 1 dose	Annually	

### 15. De-worming Schedule of animals

Sl.No.	Species	Drug used	Month
1	Tiger	Fenbendazole, Oxfendazole, Ivermectin, Pyrental, Praziquantel, Febantel	6 months interval
2	Asiatic Black Bear	Fenbendazole, Albendazole, Oxfendazole	6 months interval
3	Barking Deer	Fenbendazole, Albendazole, Oxfendazole	6 months interval
4	Spotted Deer	Fenbendazole, Albendazole, Oxfendazole	6 months interval
5	Sambar	Fenbendazole, Albendazole, Oxfendazole	6 months interval
6	Hog Deer	Fenbendazole, Albendazole, Oxfendazole	6 months interval
7	Indian One Horned Rhinoceros	Fenbendazole, Albendazole	6 months interval
8	Exotic Birds	Fenbendazole, Albendazole, Oxfendazole, Piperazine, Pyrental embonate, Febantel	6 months interval
9	Palm Civet	Fenbendazole, Albendazole, Oxfendazole, Pyrental embonate, Febantel	6 months interval
10	Asiatic Elephant	Fenbendazole, Albendazole, Oxfendazole	6 months interval

11	Peafowl	Fenbendazole, Albendazole, Oxfendazole, Piperazine, Pyrental embonate, Febantel	6 months interval
12	Indigenous Birds	Fenbendazole, Albendazole, Oxfendazole, Piperazine, Pyrental embonate, Febantel	6 months interval
13	Jungle Cat	Fenbendazole, Oxfendazole, Ivermectin, Pyrental, Praziquantel, Febantel	6 months interval
14	Fishing Cat	Fenbendazole, Oxfendazole, Ivermectin, Pyrental, Praziquantel, Febantel	6 months interval

## 16. Disinfection Schedule

Sl.No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
1	Tiger	Night Shelter	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
2	Asiatic Black Bear	Night Shelter	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
3	Barking Deer	Safari area	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
4	Spotted Deer	Safari area	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
5	Sambar	Safari area	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
6	Hog Deer	Safari area	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
7	Indian One Horned Rhinoceros	Safari area	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
8	Exotic Birds	Aviary	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
9	Palm Civet	Night Shelter	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
10	Asiatic Elephant	Night Shelter	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
11	Peafowl	Aviary	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
12	Indigenous	Aviary	Kohrsolin, Potassium	Twice a

	Birds		permanganate, burning, spraying, fumigation,	month
13	Jungle Cat	Night Shelter	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month
14	Fishing Cat	Night Shelter	Kohrsolin, Potassium permanganate, burning, spraying, fumigation,	Twice a month

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

Sl.No.	Name	Designation	Date of Health Check up	Findings of Health Check up
1	Rakesh Karjee	Animal Attendant	02.08.2017	Nil for Zoonotic diseases
2	Hem Kumar Mahapatra	Animal Attendant	02.08.2017	Nil for Zoonotic diseases
3	Avinash Chettri	Animal Attendant	02.08.2017	Nil for Zoonotic diseases
4	Krishna Adhikari	Animal Attendant	02.08.2017	Nil for Zoonotic diseases
5	Aditya Tamang	Zoo Keeper	02.08.2017	Nil for Zoonotic diseases
6	Ranjit Thapa	Zoo Keeper	02.08.2017	Nil for Zoonotic diseases
7	Unish Lal Saibo	Animal Attendant	02.08.2017	Nil for Zoonotic diseases
8	Kumar Chettri	Animal Attendant	02.08.2017	Nil for Zoonotic diseases
9	Subol Pradhan	Animal Attendant	02.08.2017	Nil for Zoonotic diseases

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

#### AVIARY ENCLOSURE

Enclosure: 4nos

#### LESSER CAT ENCLOSURE

Fishing Cat Enclosure  
Civet Enclosure

### **BLACK BEAR ENCLOSURE**

Enclosure: 2146.65m  
Safari road: 2804.9m  
Night Shelter: 1nos.

### **LEOPARD ENCLOSURE**

Enclosure: 1814m  
Safari road: 2000m

### **BUILDINGS**

Post Mortem Room: 1nos.  
Barrack cum quarter: 3nos  
Group C quarters: 3nos  
NIC: 1 nos  
Elephant Riding Tower: 1nos

### **ROAD**

Cement Road: 873.5m  
Paver Block: 956.49m

### **REPTILE ENCLOSURE**

Gharial Enclosure: 217.87m  
Crocodile enclosure: 116.12m

### **VISITOR AMENITIES**

Visitor Sheds: 6nos  
Parking Sheds: 2nos  
Children Playing items: 5nos  
RCC Bench: 20nos  
Drinking Water: 2nos  
Cloak room, Mother Care shade-1nos  
Braille boards- 20nos

### **OTHERS**

Borewell: 5 nos  
Vermicompost Unit: 5nos  
Nursery -1unit

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

<b>NATURE EDUCATION AND AWARENESS PROGRAMMES</b>			
<b>Sl. No.</b>	<b>Date</b>	<b>Occasion</b>	<b>Event</b>
1	09.05.2017	Rabindra Jayanti	Im-promptu Sit and Draw

		Celebration	Competition for visitor kids
2	05.06.2017	World environment day Celebration	Sit and draw Competition on "Connecting People to Nature"
3	14.11.2017	Children's Day Celebration	Wildlife Documentary and Quiz
4	02.12.2017	National Pollution Control Day	Seminar on the Flora and Flora of the Park and specimen collection for Herbarium
5	25.12.2017	Christmas Celebration	Documentary on wildlife and Quiz
	12.01.2018-21.01.2018	National Youth Day-Bengal Safari Foundation Day	Selfie Contest
6	23.01.2018	Netaji Birthday Celebration	Children paid tribute to the national hero
7	08.02.2018	Chocolate Day	Chocolate distribution to visitors
8	10.02.2018	Teddy Day	Asiatic Black Bear Mask distribution to visitors
9	14.02.2018	Valentine's Day	Animals printed Greetings Card distribution to visitors
10	03.02.2018	World Wildlife Day Celebration	Poster making Competition on "Wildlife: Threats and Conservation"

### **SCHOOL AND INSTITUTION VISITS DURING THE YEAR 2017-18**

<b>Sl.No</b>	<b>Date</b>	<b>Name Of Institution</b>	<b>No Of Teachers</b>	<b>No Of Students</b>
39	01.04.2017	HRDD, Govt. Of Sikkim	05	124
40	06.04.2017	Bathkumar Junior School	06	188
41	11.04.2017	St. Michael's School	04	65
42	11.04.2017	Netaji Girls' High School, siliguri	03	20
43	11.04.2017	DR. I.B. Thapa Nepali Vidyapith	03	37
44	22.04.2017	Pokhriabong High school, Kalimpong	02	24
45	27.04.2017	Forestry Training Centre, Rajabhatkhawa	02	26
46	07.05.2017	Piku Public School	20	81
47	11.05.2017	Lamahatta H.S. School	02	15
48	11.05.2017	Nepali H. School (H.S.)	02	15
49	17.05.2017	B.S.V.C. High School	06	20
50	18.05.2017	Little Laureates, Dabgram	03	33
51	19.05.2017	Shyamdrum Jote High School (H.S.)	04	101
52	24.05.2017	Marigold English School	12	62
53	25.05.2017	Caesar School	03	32
54	30.05.2017	Ambari High School	03	103
55	12.06.2017	Kidzee Siliguri	14	24

56	20.06.2017	SFTS, Hijli, Kharagpur	02	46
57	21.06.2017	Purbanchal High School (H.S.)	09	104
28	21.07.2017	Hararandar High School	03	20
29	21.07.2017	Nadati High School	04	28
30	22.07.2017	Phansidewa Govt. Spcl A.T. High School for Girls	13	30
31	28.07.2017	Thakurganj Shishu Vidyaniketan, Kishanganj	03	55
32	02.08.2017	St. Paul's School, Darjeeling	20	97
33	24.08.2017	St. Paul's School, Darjeeling	20	230
34	24.08.2017	Phansidewa Govt. Spcl A.T. High School for Girls	05	195
35	30.08.2017	Narayana Schools	07	55
36	15.09.2017	Bairatigen High School, Dhupguri	04	56
37	21.09.2017	Ghogomali High School	05	52
38	24.09.2017	Bidhannagar Santoshini Vidyachara High School	221	27
1	24.10.17	K.V BSF Baikunthapur	05	86
2	01.11.17	New St John's High School	04	27
3	01.11.17	Bright Academy	05	70
4	03.11.17	Fulbari High School	04	27
5	04.11.17	North Bengal St Xaviers College	04	32
6	07.11.17	Little Angels School, Siliguri	10	100
7	08.11.17	Little Angels School, Siliguri	10	100
8	09.11.17	St Maria Gorethi Girls School, Demdima	07	190
9	14.11.17	Nepali Girls School, Naxalbari	14	67
10	14.11.17	Kid Zee , Bhaktinagar (N.J.P)	03	13
11	14.11.17	Indranagar Primary School	02	17
12	14.11.17	Grace English School	13	83
13	14.11.17	Sahyogi Group/Hsnhhrf	04	19
14	14.11.17	Woodridge International School, Siliguri	10	60
15	15.11.17	St Michael's School, Siliguri	10	130
16	16.11.17	St Michael's School, Siliguri	11	192
17	17.11.17	Azalea Academy, Siliguri	13	75

18	25.11.17	Glermore International School, Mirik	06	26
19	28.11.17	Jermel's Academy	06	198
20	30.11.17	Jermel's Academy	10	115
21	1.12.17	Dewdrops Kindergarten School	5	25
22	06.12.17	R.I.Bs Mbj	12	19
23	08.12.17	Army Pre Primary School, Sevoke Mlt Station	13	280
24	10.12.17	Saraswati Vidya Mandir, Islampur	20	65
25	12.12.17	Selpara High School, Uttar Selpara, Dinajpur	03	20
26	17.12.17	Step By Step School, Kadamtala	06	20
27	24.12.17	Central Academy For State Forest Service, Burminar, Assam	01	31
28	30.01.2018	Little Flowers' English School (Nepal)	03	117
29	30.01.2018	Victoria Public School, Siliguri	13	112
30	02.02.2018	Orchid Montessori House	30	70
31	02.02.2018	Sacred Heart School	03	65
32	03.02.2018	Sacred Heart School	03	89
33	04.02.2018	Modi Public School	04	85
34	09.02.2018	Mahbert High School	05	119
35	13.02.2018	St. Joseph's High School	08	105
36	16.02.2018	Birla Divya Jyoti School	07	130
37	17.02.2018	Caesar School Mal	06	130
38	21.02.2018	Hakimpara Balika Vidyalay	03	30
39	23.02.2018	Purbanchal High School	06	119
40	23.02.2018	Ksheti High School	07	40
41	28.02.2018	Dr. I.B. Thapa Nepali Vidyalaya, Siliguri	02	34
42	08.03.2018	Rabindranath H.S. School	04	26
43	08.03.2018	Goti High School	09	22
44	10.03.2018	St. Maria gorethi Girls' high School	06	153
45	21.03.2018	Himali Boarding School, Kurseong	10	44

<b>CAMPS ORGANIZED</b>			
<b>Sl. No.</b>	<b>Date</b>	<b>Camp</b>	<b>Venue</b>
1	14.12.2017	Free Foot & Mouth Disease	Toribari Forest Village



	Vaccination Camp	
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## 20. Important Events and happenings

### Zoo Evaluation

The Central Zoo Authority evaluated the North Bengal Wild Animals Park, Siliguri on 13<sup>th</sup> April, 2017. The evaluating officer present at the time of evaluation was Mr. Bipul Chakraborty, Director, Tata Steel Zoological Park. He had suggested few necessary changes regarding animal upkeep and veterinary aspects, which are being followed and necessary action being taken.



### Inauguration of Enclosures by the Hon'ble MIC, Forest Department, West Bengal

The hon'ble MIC, Dept. Of Forest, Govt. Of West Bengal, Sri. Binay Krishna Barman along with forest officials inaugurated different enclosures of the Park, such as the Peafowl enclosure, exotic birds enclosure, mixed flying birds enclosure and the civet enclosure on 3<sup>rd</sup> May, 2017.

### Rabindra Jayanti Celebration

The Park celebrated its first Rabindra Jayanti on 9<sup>th</sup> May, 2017, by organising an impromptu sit and draw competition for the children visiting the Park. Around twenty students of different age groups participated in the competition. Since it was an impromptu event, the theme was kept open. However the first, second and third prizes were bagged by Ms. Deepa Sarkar, Mr. Anup Roy and Ms. Alisha Firdous respectively. All the participants were taken for a free Safari ride later.

### Training On Tranquilization at Zoological Garden, Alipore

A two days training was organised at Zoological Garden, Alipore (ZGA) by the West Bengal Zoo Authority (WBZA) for all the eleven Zoos/ Deer Parks/ Safaris under its control. The training mainly focused on the operational mechanisms of the newly acquired tranquilization gun by the WBZA as well as hands on training and chemical restraining doses. The training panel consisted of Mr. V.K Yadav, Member Secretary, WBZA, Mr Ujjal Bhattacharjee, Administrative Officer, WBZA, Dr. Shivaji Bhattacharjee, Veterinary Officer, ZGA, Dr. S.C. Samanta, Senior Veterinary Officer, ZSI and the owner of Helpro. Dr. Subhash Ch. Das, Veterinary Officer, Mr. Sujoy Kr. Dutta, Asst. Veterinary Officer, Mr. Tarun Mahalanabish, Asst. Supervisor, Mr. Aditya Mitra, Biologist and Mr. Raj Thapa, Security Personnel represented North Bengal Wild Animals Park at the training.



## **World Environment Day Celebration**

On the occasion of World Environment Day, a Sit & Draw Competition was organised at the park. More than hundred students from different schools around Siliguri participated. The theme was “Connecting People to Nature”. The event was conducted by the Research and Veterinary Section of the Park. The participants were divided into three groups, i.e. Classes I – IV in Group C, Classes V –

VII in Group B and Class VIII and above in Group A. After the felicitation, all the participants and their parents/teachers were then provided with lunch and also taken for a Safari ride.

## **Free Eye Check-Up Camp for Staff and Villagers**

On 4<sup>th</sup> June, 2017, The Greater Lion’s Club in an event to honour its members organised a free eye check-up camp in collaboration with North Bengal Wild Animals Park, at the Park premises. Around hundred fifty local villagers and Park staff visited the camp for a check up.



## **Event Organised By West Bengal Pollution Control Board**

The West Bengal Pollution Control Board, Dept. Of Environment, Govt. Of West Bengal in collaboration with North Bengal Wild Animals Park celebrated World Environment Day at the Park. The chief guest of honour at the event was Sri. Gautam Deb, MIC, Dept. Of Tourism, Govt. Of West Bengal. Different school students had participated. The main speakers were who emphasized on why and how we can save nature.



### Animals and Bird Acquisition

The Park added a number of rescued animals and birds to its collection, such as Spotted Deer, Barking Deer, Palm Civet, Chinese Pangolin, Monitor Lizards, Geckos, Turtles, Lesser Adjutant Stork, Blue Gold Macaw, Scarlet Macaw, African Grey Parrot, Galah Parrot, Yellow Headed Amazon, Sulphur Crested Cockatoo, Salmon Crested Cockatoo, Peafowl, Munia, Parakeets, Budgerigars and Helmet Pigeons, and different species of Snakes. While the snakes were released in the wild, most of the birds have been kept for display to the visitors. The Park has also added a number of rescued animals and birds to its collection, such as Gharial, Common Palm Civet, Bengal Monitor, Water Monitor, Gangetic Soft Shelled Turtle, Indian Peafowl, White Peafowl, Sulphur Crested Cockatoo, Salmon Crested Cockatoo, Cockatiels, Parakeets, Hill Myna and Munias. The Park acquired also a pair of Asiatic Black Bear and a Fishing Cat from Padmaja Naidu Himalayan Zoological Park, Darjeeling, Indian Peafowl from Adina Deer Park, Parakeets, Gecko, Munia, Cockatiels, Love Birds, Spotted Pond Turtle and Bulbul from Wild Animal Rescue and Transit Facility Centre, Salt Lake, Sambar Deer from National Zoological Park, New Delhi and Royal Bengal Tiger, Spotted Deer and Hog Deer from Tata steel Zoological Society, Tatanagar.



### Elephant Safari

The Hon'bl MIC, Dept. Of Tourism, Govt. Of West Bengal, Sri Gautam Deb and the Hon'bl MIC, Dept. Of Forest, Govt. Of West Bengal, Sri Binay Krishna Barman along with forest officials inaugurated the Elephant Safari at North Bengal Wild Animals Park on 25<sup>th</sup> September, 2017. The elephant safari has proved to be a major craze among visitors as previously only Jaldapara Wildlife Sanctuary and Gorumara National Park in North Bengal had

such facilities. The safari allows visitors to tour the herbivorous area and see the animals in their natural habitat. Two elephants Urmila and Laxmi have been brought

to the park for this purpose. Urmila, who is approximately 43 years was bought from Sonpur Mela in 1987 and was a member of the Buxa Tiger Reserve family. Laxmi, who is around 54 years, was a departmental captive elephant at Jaldapara Wildlife Sanctuary. Both the elephants are now members of the Bengal Safari family.

At present each elephant is doing five trips per day, which may vary depending upon the health conditions of the individuals. Tickets are available both online and offline.

### **Inauguration Of White Peafowl Enclosure And Souvenir Shop**

On the same day as the inauguration of the Elephant Safari, Sri Gautam Deb and Sri Binay Krishna Barman also inaugurated the white peafowl enclosure and the souvenir shop. The Park had recently acquired 2 pairs of leucisistic (white) peafowl from Alipore Zoo, Kolkata. While the males are pure white in colour, both the females are described as Oaten. Among the four, two have been donated by Sri Arpan Mitra, animal lover.

The Souvenir Shop, which is funded by the Dept. Of Tourism, has been attracting tourists for its different Banaja (Non Forest Timber Produce) and local handmade items.

### **Tourist Boom**

On the eve of Christmas Day celebration, Bengal Safari witnessed a huge crowd of visitors hailing from different parts of the state and country. On account of these two days being public holidays, the total revenue generated from the visitors on 25.12.17 and 31.12.17 was Rs 1,85,310 and Rs 2,08,430 respectively. Visitor belonging to varied age groups were seen enjoying the scenic beauty and beautification of the park including the Aviary trails, Jungle Cat and Civet enclosures, exotic bird mixed flying bird aviaries and Peafowl aviaries. Most of the



visitors gathering were observed near the newly established attractions, i.e, the Fishing Cat enclosure and White Peafowl Aviary. Combo Safari and Tiger Safari were thoroughly enjoyed by the visitors as the sights of four types of Deer, One horned Rhinoceros, Royal Bengal Tiger and various colourful free living birds were a visual delight to them. People from various communities were seen appraising the signages of the Medicinal Plant Garden and Bonsai Garden as very informative and appealing. Children were found amused by the newly set up swings, trampoline and slides with animal signages put on them.

Bengal Safari discourages the use of plastic and plastic products and hence visitors were requested not to carry any plastic products in the Bengal Safari premises. The visitors whole heartedly supported the “NO USE OF PLASTIC” effort and effectively carried their food materials and accessories in paper bags and Sal leave plates provided by the park authority. Hence the visitors’ influx towards Bengal Safari is significantly showcasing their inclination towards nature and its diverse flora and fauna.



### **Children's Day Celebration**

Bengal Safari celebrated Children's Day with toddlers of Kidzee and Kidz Academy by showing an informative cartoon documentary on wildlife and the need to save trees, where the children were taught about different animals of the Himalayan Flood Plains and their respective sounds as well as different uses of trees. The documentary was made keeping in mind the attraction of kids

towards cartoons, where they not only enjoyed the show but also participated in a random quiz competition, where they got a chance to learn as well as earn prizes for themselves.

### **National Pollution Control Day Celebration**

Each year National Pollution Control Day marks the commemoration of Bhopal Gas Tragedy of 1984. The Park felt the need to educate today's youth about the adversity of pollution on nature and wildlife. The Park had invited graduate students of Botany Hons. And Pass of Siliguri College for a brief lecture on the flora and fauna of the Park as well as a nature walk, where the students were taught about different plants and their uses. The students also collected sample specimens for herbarium. The walk was followed by lunch at the Cafeteria.



### **Christmas Celebration**

Bengal Safari had invited a children's club of the park adjacent village, Toribari to celebrate Christmas and the coming New Year, where students of different schools participated for a Safari tour and a documentary on wildlife. The children also participated in an impromptu quiz competition, where they got a chance to win exciting prizes from the Park. The quiz was followed by lunch and later on they felicitated the Director along with the staff of the Research Section.



### Free Animal Check-up Camp

The Veterinary Section of the Park organised a Free Animals check-up Camp on 14<sup>th</sup> December, 2017 to celebrate National Energy Conservation Day. The staff provided FMD vaccines at 16 houses in the Park adjoining villages. The Camp was attended by 36 village members and around 200 cattle. Patients were given free treatment and on-spot medications.

### Inauguration of Asiatic Black Bear safari and Fishing Cat Enclosure

Bengal Safari added another feather to her hat by opening the Asiatic Black Bear Safari for visitors. The safari was inaugurated by Hon'ble MIC, Department of Forests, WB, Sri Binay Krishna Barman and Hon'ble MIC, Department of tourism, WB, Sri Gautam Deb on 11<sup>th</sup> January, 2018 along the Forest Secretary and PCCFs. The Hon'ble ministers also inaugurated the Fishing Cat enclosure on the same day.



### Selfie Contest

12<sup>th</sup> January is celebrated as the birth anniversary of Swami Vivekananda as well as National Youth Day. Bengal Safari had organised a Selfie contest from 12<sup>th</sup> to 21<sup>st</sup> January for visitors. In the age of selfies the park encouraged

people to click selfies inside the park premises, except with or in front of animals and upload the same on her facebook page. The contest ended on 21<sup>st</sup> January which marks the foundation day of the park. The selfies with maximum likes were declared winners on 22<sup>nd</sup> January. Ms. Atasi Mandal of Kolkata bagged the 1<sup>st</sup> prize, while Mr. Anikesh Baishya and Mr. Dipankar Paul were declared 2<sup>nd</sup> and 3<sup>rd</sup> respectively.

### Netaji Birth Anniversary Celebration

Bengal Safari commemorated the national hero Subhas Chandra Bose by celebrating his birth anniversary on 23<sup>rd</sup> January, 2018 with kids of visitors. The event was presided by our very own Gambe daju (Security Supervisor), who enlightened the kids on the many braveries of Bose and his struggle for independence. Children felicitated the hero with flowers and garlands and later on the park provided them with tiffin.



### Workshops

The West Bengal Zoo Authority had organised a 2 day workshop on "Enrichment Of Animal Enclosures in Zoos" on 30th and 31st January, 2018 at Zoological Garden, Alipore. The Chief Guests of honour included, Dr. D.N. Singh, Member Secretary, CZA, Mr. V.K.Yadav, Member Secretary, WBZA, Dr. Sushant Chowdhury, Ex-Senior Professor, WII and Dr. B.K Gupta, Evaluating & Monitoring Officer, CZA. The workshop include Directors,

DFOs, ADFOs and Biologists of Zoological Garden Alipore, Padmaja Naidu Himalayan Zoological Park, North Bengal Wild Animals Park, Junglehal Zoological Park, Bardhaman Zoological Park, Sundarban Wild Animals Park, Rasikbeel Mini Zoo, Surulia Mini Zoo, Garchumuk Deer Park, South Khairbari Rescue Centre, New Town Deer Parkas as participants.



### **Dignitary Visits**

The Evaluating and Monitoring Officer, Central Zoo Authority, Dr B.K. Gupta and the Member Secretary, WBZA, Mr. V.K. Yadav along with Smt Alka Yadav visited the park on 3<sup>rd</sup> February, 2018. The dignitaries praised the signages and upkeep of the park while suggesting few minor changes for the betterment.

### **Valentine's Week Celebration**

The Park celebrated valentine's week with different events. On 8<sup>th</sup> February, visitors were given chocolates to celebrate Chocolate Day, 10<sup>th</sup> February which is known as Teddy Day was celebrated by distributing Black Bear masks to visitors in a bid to conserve the Asiatic Black Bear. On 14<sup>th</sup> February, i.e. on Valentine's Day, Greeting cards were distributed among visitors. The cards had animals printed on them with a distinct message to protect nature and wildlife against climate change. Even the heart on the card was kept green to symbolise love for nature.





## Word Wildlife Day Celebration

Bengal Safari celebrated World Wildlife Day on 3<sup>rd</sup> March, 2018 with different college students of Siliguri, by organising a poster making competition themed on Wildlife , threats and conservation. Around 20 students participated in the competition and Ms. Pallavi Bhowmick of Pragati College was selected to be the winner. Later on the students were taken around the park for nature identification and safari.



## 21. Seasonal special arrangements for upkeep of animals

- Covering of aviaries of birds to protect them from sun and rain
- Cooler, fans and blowers in night shelters of tiger and bear during summers and winters.
- Seasonal fruits in diets

- Seasonal enrichments

## 22. Research Work carried out and publications

The total area of the Park is about 297 ha of which 151.72 ha shall come under the different Safaris. The area is largely plain with thick to sparse vegetation providing ideal habitat for the wildlife. To know the present status of free living fauna and flora of the park, the technical committee of West Bengal Zoo Authority had agreed and recommended a project “Status Survey of Free Living Flora and Fauna of North Bengal Wild Animals Park”, for a total cost of Rs. 3.96 lakhs for one year. Research Scholars, Ms. Namrata Ghosh and Mr. Rajib Biswas working on the project had submitted the final report for phase I in December, 2017. The project will be extended for phase II for another one year. The summary of the Phase I of the report has been provided below:

- **Summary of Project Report**

The Darjeeling Himalaya is part of the Himalaya Biodiversity Hotspot (Das, 2011). The region is extremely rich in flora and fauna with high level of endemism. The climatic and edaphic isolation of the sub-Himalayan region have resulted in the high percentage of endemism. The natural beauty and the rich biological resources of Darjeeling and its adjoining foothill areas has attracted general tourists, nature lovers, botanists and beauty hunters almost from all parts of the world at least for the last three centuries (Das 1995, 2004). To be too beautiful has been proved as not too good for existence neither in nature nor in the society. Her beauty is gathering huge revenue in one side but she is getting naked on the other. The beauty of biological resources of these areas are facing threats due to almost uncontrolled increase in anthropogenic activities leading to rapid habitat destruction and excessive fragmentation, spread of invasive exotic species etc.

Mc Neely *et al* (1990) recognizes 12 countries including India those contribute 70 % of the world’s flora as the mega diversity countries (Groombridge 1992). Myers (1989, 1990) brought in the concept of ‘Hotspot’ based on the total endemics and the rate of natural habitat loss. Now there are 35 Hotspots recognized world-wide (Conservation International, 2012). The mountains of the Himalayas including the Eastern Himalaya are globally important so far as the biodiversity is concerned. The whole of the Himalayas has now been included among the 35 biodiversity hotspots over the globe (Myers *et al* 2000; IUCN 2010), this includes several eco-regions (Olson & Dinerstein 1998), two Endemic Bird Areas and several protected centres for plant diversity (IUCN 1995).

North Bengal Wild Animals Park, popularly known as Bengal Safari is a newly established Safari Park cum Zoo in the foothills of Darjeeling. This area lies between 26°47'23" N to 26° 48'39"N Latitude and 88°25'56"E to 88°27'08"E longitude. Elevation varies 140 to 167 m. Bengal Safari covers a small patch of Baikunthapur Forest Division amidst Sal dominated deciduous vegetation of Terai and Duars showcasing the wild beauty of Himalayan Hotspot.

The geological formations normally encountered in this tract are one of sub-recent to recent origin and comprise of the *Alluvial Formation* and *Bhabar Formation*. Except during monsoon, the formation is apparently devoid of water and the streams carrying volume of water disappear within the porous structure of the formation and

reappear towards south in the form of springs. The slope of the land is gentle, from north to south. The soil is sandy loam with top loose to hard below and it does not vary in the whole area. The area is composed of alternate layers of clay and sand.

Bengal Safari lies in the moist tropical zone where the climatic condition is very much suitable for the diversification of flora as well as fauna. Four distinct climatic conditions are recognized in this region, but the summer, monsoon and winter are prominent. South West Monsoon is the main source of precipitation and rainfall. Maximum rainfall occurs in mid-June to September, July and August are usually considered as the wettest months. Maximum Relative Humidity varies between 85 % - 95 %, seldom below 75 %, with a maximum during June to September and minimum during December to February. The average day temperature varies from 8° C to 25° C from November to February, between 25° C to 30° C during May to September and between 22° C to 27° C during the rest of the year. The annual average humidity also remain quite high, i.e. 90.52 % in the morning and 74.27 % in the afternoon.

In comparison with higher plants and larger animals, the inventory of insects in the Himalayan landscape is still fragmentary and incomplete. In order to know how and where to protect biodiversity, it is imperative that we learn more about the diversity of terrestrial arthropods, which may constitute 80 % or more of the global diversity but have too often been neglected by resource managers and conservation planners.

The study area is situated in the cradle of Mahananda Wild Life Sanctuary and on the Mahananda river valley up to the elevation of 167 m. This is mainly characterized by the broad-leaved deciduous forests. The fauna and flora of West Bengal possess the combined characteristics of the Himalayan and sub Himalayan tract. Biodiversity is shaped by the diverse habitats and vegetation designated with eight different forest types (Champion & Sheth 1968). These diverse ecosystems have resulted in rich faunal diversity of the state and consist of 10,013 species out of a total of 89,451 species of animals present in our country, thus representing 11.19% of our countries fauna. The floral diversity of the state is also enriched by 4,622 species out of a total of 44,594 floral species in India, and 10.36 % of our countries flora.

The study area of Bengal safari comprising 297 hectares was surveyed during the project duration period, i.e. year 2016 to 2017. Based on the few available literature regarding Baikunthapur Forest and Mahananda Wild Life Sanctuary, records, publications on the status of flora and fauna, it can be conferred that the study area is very rich with varied floral and faunal biodiversity. After thorough consultation with officials of forest department and local people efforts were made to recognize dense niches in deep forests in all parts of the Bengal Safari. During the survey, the plant samples were collected in duplicates or triplicates and kept in air-tight polythene bags. Collections of specimens were done with their reproductive structures intact, (flowers and fruits) but in many cases sterile specimens were also collected. Herbaceous plants were generally collected in full with roots. The methodology as suggested by Jain and Rao (1977) was followed in general for this work. During the field survey, specimens were photographed for capturing the unique characteristics. For Faunal diversity, Sample collection in Bengal Safari was carried out in three different seasons from the year 2016 to 2017. Different methodologies were followed during the survey, collection, identification and preservation of different categories of

faunal specimens. In general, the specimens were collected using standard survey methods with the aid of field photographs and GPS location of sighted areas. Morphological features along with some unique characteristics of the collected specimens were noted in the field note book with collection date and numbers. Specimens, which were collected in field, were temporarily preserved in airtight container, killing jars in the field and processing along with identification was done with the available, accepted published books, journals, identification keys and monographs. For preservation, 10 % formaldehyde aqueous solution was used for vertebrate specimens, for invertebrates, 70 % alcohol was used. For insects, dry specimens were preserved in envelope containing naphthalene, pinned and some specimens were preserved in 70 % alcohol solution, nematodes were preserved in 5 % formaldehyde with a little drop of Glycerine.

The present research work in the study area of Bengal Safari dealt with the record of 88 Angiospermic families, 1 Gymnospermic family, 14 Pteridophytic families, 3 Bryophytic families, 4 Algal families and 15 Fungi families. The Angiosperm families comprises 391 species under 297 genera. The present survey recorded 29 species of Pteridophytes belonging to 22 genera under 14 families. Macro Fungal diversity was observed to be very interesting, a total of 28 Fungi species has been recorded under 22 genera of 15 families. Out of recorded 391 species of Angiosperms, 332 species were recorded as Terrestrial species, 5 are Epiphytic species, 14 Aquatic species, 40 are Wet lowland or Marshland species. A total of 64 species of Tree, 63 species of Shrubs, 7 species of Lianas, 52 climbing species and 205 Herbaceous species under Angiospermic elements were recorded during this one year survey based research work. A total of 29 species of Pteridophytic species were recorded under 14 families during one year research period. Pteridacea presented maximum species, *i.e.* 7 species. The present research work of Bengal Safari dealt with record of 88 Angiospermic families, 1 Gymnospermic family, 14 Pteridophytic families, 3 Bryophytic families, 4 Algal families and 15 Fungi families. The Angiosperm families comprised 391 species under 297 genera. 29 species of Pteridophytes belonging to 22 genera under 14 families. In total, 28 Fungi species were recorded under 22 genera of 15 families. From this huge diversity of floristic elements, 307 species were found as Not Assessed (NA) in the IUCN Red List. Only one species is listed as Vulnerable (VU), 72 species under Least Concern (LC), 3 species under Lower Risk (LR) and 2 species fall in the Data Deficit (DD) category.

The present faunal survey recorded 496 species under 422 genera comprising 201 families. All of these comprise mainly macro fauna and natural inhabitant of this area. This short time research work dealt with 312 species of arthropods belonging to 276 families and 95 species of birds representing 75 families. Ichthyofaunal diversity comprised 33 species under 12 families, Molluscs comprised 20 species covering 11 families, reptiles and amphibians comprised 23 species. 12 species of mammals were recorded. Under Phylum Annelida, 2 species from 2 families of 2 different order were recorded. 312 species of arthropods were recorded which covered 276 genera and 103 families. Lepidoptera presented maximum number of species, followed by Coleoptera 40 species covering 14 families, Odonata 33 species covering 5 families, Orthoptera 28 species under 9 families, Hymenoptera 25 species of 11 families.

106 species of Lepidoptera were recorded in the present research work, comprising 89 genera and 21 families. This short time research also dealt with 18 species of insects under 11 families of order Diptera and 13 species under 10 families of order Hemiptera.

The freshwater bodies of Bengal safari like Singhijhora and Shyamjhora are very rich in benthic faunal diversity. The present survey recorded the fresh water ichthyofauna comprising 30 species under 20 genera of 12 families and 6 orders. Out of 30 species of fishes recorded from Singijhora of Bengal Safari, 2 species are listed as Near Threatened, 25 species are Least Concerned, 3 species as Not Evaluated (Table: 5.2.28). According to National Bureau of Fish Genetics and Research, Conservation Action and Management Plan (NBFGR, CAMP) Conservation Status, 1998, 2 species are listed as Endangered (EN), 7 species as Vulnerable (VU), 10 species in Least Concern category, 8 species under Low Risk Near threatened (LrNT) and 3 species as Not Evaluated (NE).

Out of 12 recorded species of reptiles, *Chrysopelea ornate* has been identified as Near Threatened species (NT), *Python molurus* as Vulnerable species (VU) and *Varanus benghalensis* is listed under Least Concern category (LC) as per IUCN Red List status. 11 species of Amphibia under 7 genera covering 5 families were recorded in this one year research work.

This one year Research work dealt with 95 species of Birds under 75 genera comprising 48 families. 15 orders were recorded representing 48 families. Table 5.2.35 represents order wise species distribution of the avifaunal species surveyed. Order Passeriformes comprises maximum species (48 species) under 34 genera of 24 families, followed by Coraciiformes, Pelecaniformes, Piciformes etc.

The present research work of Bengal Safari dealt with the record of 391 Angiospermic species, 1 Gymnosperm, 28 species of Pteridophytes and 27 Fungi species. From this data, it can be conferred that the diversity of floristic elements is very rich in 297 hectare area of Bengal Safari. The floristic elements present here hold a great significance from the traditional, ecological and socio-economic point of view. The fodder intake or consumption among wild fauna varies in different seasons of Bengal Safari. Three different combination of species consumption has noticed in this one year research study. From this present study, pre monsoon, monsoon, and post monsoon feed plants species has recorded. A total of 65 species of plants were recorded during this one year research in which 6 species recorded whose fruits were also consumed by Spotted Deer and Barking Deer. 7 species were identified whose bark is consumed by Spotted Deer and Sambar Deer during grazing. In Total, 30 species of Herbs, 9 species of shrubs, 2 lianas, 14 trees and 10 specie climber were recorded during this study period which were consumed by the ungulates (Deer) in different seasons (Table:5.1.21). 21 species were recorded to be consumed by them throughout the year. During monsoon, only 9 species were recorded to be consumed by ungulates.

Human beings use both the terrestrial ecosystems and aquatic ecosystems for various purposes for their fooding, livelihood, fishing (being most common activity). For this vegetation cover is cleared, land is being used for cultivation, use of insecticides to yield better crops, Such anthropogenic disturbances lead to habitat fragmentation and habitat destruction. Hunting of birds with indigenous weapons also pose a major threat leading to decline in avifaunal diversity. One of the major

threats to be highlighted nowadays are unethical approaches while birding such as in the name of photographing a species, the ecology and ethology of the species is being disturbed. Construction of roads, poaching, mining and quarrying activities, road accidents, electrocution are several other anthropogenic threats eliminating a major portion of faunal diversity.

Invertebrates as well as vertebrates play a significant role in various basic functions of ecosystems such as pollination, decomposition, biological control, source of food, medicinal value, source of recreation, sustainable development etc. Lepidopterans and Odonates serve a significant role as pollinators and bio indicator. Another growing demand is for live pupae for butterfly parks and research activities abroad. Ecotourism is nowadays a popular venture for this set up of butterfly parks with host plants attract tourists and generate revenue.

Awareness is critical to appraise young minds and season them towards harmonious coexistence between man and nature. At academic level certain prominent prospects such as simplified identification manuals for basic floral and faunal identification, insects lifecycle, basic diversity in fauna, their role in ecosystem services, threats faced by faunal diversity, preparations of biological models and posters briefing about conservation and habitat restoration approaches that could be taken to conserve biodiversity etc.

Since the North Bengal Wild Animals Park (Bengal Safari) is visited by a number of tourists, dissemination of information pertaining to the flora and faunal diversity can be undertaken using posters, audio visual presentations, concise field guides, booklets on the locally seen flora and fauna, souvenir shops, conducting environment and wildlife awareness programmes, nature walks, interactive workshops can pique one's interest in knowing about biodiversity and associated concepts.

### 23. Conservation Breeding Programme of the Zoo

The Park is not involved in any Conservation breeding programmes yet but breeding has occurred in herbivores and pheasants

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

#### ANIMALS ACQUIRED IN THE YEAR 2017-18

SI No.	Date	Animals	Sex ratio			Acquired From
			M	F	U	
1	05.02.2018	Spotted Deer	7	10	0	Tata Steel Zoological Society, Tatanagar
2	04.02.2018	Spotted Deer	9	17	0	Tata Steel Zoological Society
3	05.01.2018	Fishing Cat	1	0	0	Wild Animals Rescue & Transit Facility Centre, Salt Lake, Kolkata
4	13.12.2017	Fishing Cat	0	1	0	Padmaja Naidu Himalayan Zoological Park, Darjeeling
5	27.11.2017	Spotted Deer	10	12	0	Tata Steel Zoological Society, Tatanagar

6	24.11.2017	Spotted Deer	8	11	0	Tata Steel Zoological Society, Tatanagar
7	24.11.2017	Royal Bengal Tiger	1	0	0	Tata Steel Zoological Society, Tatanagar
8	23.11.2017	Spotted Deer	6	14	0	Tata Steel Zoological Society, Tatanagar
9	23.11.2017	Hog Deer	2	3	0	Tata Steel Zoological Society, Tatanagar
10	22.11.2017	Sambar Deer	3	6	0	National Zoological Park, New Delhi
11	24.10.2017	Asiatic Black Bear	1	1	0	Padmaja Naidu Himalayan Zoological Park, Darjeeling
12	21.09.2017	Elephant	0	1	0	Jaldapara Wildlife Sanctuary
13	18.09.2017	Elephant	0	1	0	Buxa Tiger Reserve
14	15.09.2017	White Peafowl	3	1	0	Zoological Garden, Alipore
15	15.09.2018	Salmon Crested Cockatoo	0	0	4	Zoological Garden, Alipore
16	15.09.2017	African Grey Parrot	0	0	6	Zoological Garden, Alipore
17	08.09.2017	Asian Pal Civet	4	2	4	Wild Animals Rescue & Transit Facility Centre, Salt Lake, Kolkata
18	08.09.2017	Hill Myna	1	1	0	Wild Animals Rescue & Transit Facility Centre, Salt Lake, Kolkata
19	08.09.2017	Rose Ringed Parakeet	0	0	20	Wild Animals Rescue & Transit Facility Centre, Salt Lake, Kolkata
20	08.09.2017	Gangetic Soft Shelled Turtle	0	0	4	Baikunthapur Wildlife Division
21	31.07.2017	Gharial	0	0	3	Belacoba Wildlife Division
22	28.05.2017	Wild Boar	0	2	0	Kurseong Wildlife Division
23	10.05.2017	Indian Black Pond Turtle	0	0	50	Wild Animals Rescue & Transit Facility Centre, Salt Lake, Kolkata
24	04.05.2017	Lesser Adjutant Stork	0	1	0	Sukna Wildlife Division
25	13.04.2017	Rose Ringed Parakeet	0	0	20	Bibhutibhusan Wildlife Sanctuary
26	13.04.2017	Lesser Adjutant Stork	1	0	0	Bibhutibhusan Wildlife Sanctuary
27	13.04.2017	Indian Peafowl	3	0	0	Bibhutibhusan Wildlife Sanctuary
28	13.04.2017	Scarlet Macaw	0	0	1	Bibhutibhusan Wildlife Sanctuary

29	13.04.2017	Blue and Gold Macaw	0	0	7	Bibhutibhusan Wildlife Sanctuary
30	13.04.2017	African Grey Parrot	0	0	7	Bibhutibhusan Wildlife Sanctuary
31	13.04.2017	Sulphur Crested Cockatoo	0	0	7	Bibhutibhusan Wildlife Sanctuary
32	13.04.2017	White Cockatoo	0	0	2	Bibhutibhusan Wildlife Sanctuary

### **ANIMALS DISPOSED IN THE YEAR 2017-18**

<b>Sl No.</b>	<b>Date</b>	<b>Animals</b>	<b>Sex ratio</b>	<b>Acquired From</b>
1	21.03.2018	Blue and Yellow Macaw	0:0:2	Padmaja Naidu Himalayan Zoological Park
2	23.03.2018	Sambar	1:0:0	Padmaja Naidu Himalayan Zoological Park

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

As per the instruction of the Hon'ble Chief Minister, West Bengal and subsequent order by the PCCF & Chief Wildlife Warden of West Bengal to local DFOs a complete list has been provided with corresponding order/permission from the CWLW for your reference (**PCCF & CWLW letter No.: O.O.No.141/WL/2W-266/2018 dt: 07.06.2018**)

<b>S. No.</b>	<b>Species</b>	<b>No. of Animal Acquired</b>	<b>No. of Animals Disposed</b>	<b>Reference</b>	<b>Acquired from &amp; date</b>	<b>Disposed to &amp; date</b>
1	Cat Fishing	1		PCCF & CWLW letter No. 5439/WL/2W-16/2017 dt: 20.12.2017 Vide Challan: WB/198082	Wild Animals & Transit Facility Centre, Salt Lake, Kolkata 05.01.2018	
	Cat Fishing	1		Verbal Order of Director, PNHZP	Padmaja Naidu Himalayan Zoological Park, Darjeeling 13.12.2017	
2	Civet Common Palm-cat	10		As per direction of CWLW, West Bengal	Wild Animals & Transit Facility	



	Toddy				Centre, Salt Lake, Kolkata 08.09.2017	
	Civet Common Palm-cat Toddy		2			Released in the Buffer Zone inside the Park
3	Crocodile Long Snouted (Gharial)	3		Chief Judicial Magistrate letter No. CR332/17 dt: 31.07.2017	Seized by Belacoba Range Officer and handed over to NBWAP 08.09.2017	
4	Deer Sambar		1	Verbal Order of Director, PNHZP Our letter No. 573/23-7/NBWAP/2017-18 dt: 23.03.2018		Padmaja Naidu Himalayan Zoological Park, Darjeeling 23.03.2018
5	Elephant Indian	1		PCCF & CWLW letter No. 3949(3)/WL/2W-638/2016(Pt-VIII) dt: 22.08.2017 WBZA letter No. 462/WBZA/T-4/17-18 Dt: 18.09.2017 Buxa Tiger Reserve Letter No. 2792/23-1 dt: 14.09.2017	Buxa Tiger Reserve 18.09.2017	
	Elephant Indian	1		PCCF & CWLW letter No. 3949(3)/WL/2W-638/2016(Pt-VIII) dt: 22.08.2017 Vide Challan No.: 9717/98	Jaldapara East Range 21.09.2017	
6	Myna Hill	2		As per direction of CWLW	Wild Animals & Transit Facility	

					Centre, Salt Lake, Kolkata 08.09.2017	
7	Parakeet Rose Ring	20		As per direction of CWLW	Wild Animals & Transit Facility Centre, Salt Lake, Kolkata 13.05.2016	
	Parakeet Rose Ring	20		As per direction of CWLW	Wild Animals & Transit Facility Centre, Salt Lake, Kolkata 08.09.2017	
8	Peafowl	3		Vide Challan: 22/2174 dt: 13.04.2017	Bibhutibhusan Wildlife Sanctuary 13.04.2017	
9	Pig Wild- Wild Boar	1		Vide Challan: 148/014794 dt: 28.05.2017 DFO letter No.: 1025/26-2 dt: 22.05.2017	Kurseong Range 28.05.2017	
	Pig Wild- Wild Boar	1		Vide Challan: 55/005459 dt: 09.04.2017	Sarugara Range 09.04.2017	
10	Stork adjutant (lesser)	1		Vide Challan: 22/2174 dt: 13.04.2017	Bibhutibhusan Wildlife Sanctuary 13.04.2017	
	Stork adjutant (lesser)	1		As per direction of CWLW, West Bengal	Sukna Range 04.05.2017	
11	Turtle Ganges Soft- shelled	4		CJM Jalpaiguri letter No. 6/ANI dt: 08.09.2017	Seized by Baikunthapur Division 08.09.2017	
12	Turtle Indian Black	50		As per direction of CWLW, West Bengal	Wild Animals & Transit Facility Centre, Salt Lake, Kolkata 13.05.2016	

## 26. Annual Inventory of animals

### PART- A

Inventory Report for the Year : 2017-18

S.No.	SPECIE S NAME	ANIMAL NAME	SCIENTIFIC NAME	OPENIN G STOCK	BIRTHS	ACQUI SITION S	DISPO SALS	DEAT HS	CLOSING STOCK
				M   F   U   T	M   F   U	M   F   U	M   F   U	M   F   U	M   F   U   T
<b>Endangered Species (Schedule I and II )</b>									
1	Bird	Peafowl	<i>Pavo cristatus</i>	0   1   0   1	0   0   0	3   0   0	0   0   0	0   0   0	3   1   0   4
2	Bird	Peafowl White	<i>Pavo cristatus</i>	0   0   0   0	0   0   0	3   1   0	0   0   0	0   0   0	3   1   0   4
3	Bird	Hill Myna	<i>Gracula religiosa</i>	0   0   0   0	0   0   0	1   1   0	0   0   0	0   0   0	1   1   0   2
<b>Total Birds</b>				<b>0   1   0   1</b>	<b>0   0   0</b>	<b>7   2   0</b>	<b>0   0   0</b>	<b>0   0   0</b>	<b>7   3   0   10</b>
1	Mammal	Bear Himalayan Black	<i>Ursus thibetanus</i>	0   0   0   0	0   0   0	1   1   0	0   0   0	0   0   0	1   1   0   2
2	Mammal	Cat Fishing	<i>Prionailurus viverrinus</i>	0   0   0   0	0   0   0	1   1   0	0   0   0	0   0   0	1   1   0   2
3	Mammal	Cat Jungle	<i>Felis chaus</i>	3   0   0   3	0   0   0	0   0   0	0   0   0	0   0   0	3   0   0   3
4	Mammal	Civet Common Palm - Cat Toddy	<i>Paradoxurus hermaphroditus</i>	0   0   0   0	0   0   0	4   2   4	0   0   2	3   1   1	1   1   1   3

5	Mammal	Elephant Indian	<i>Elephas maximus</i>	0   0   0   0	0   0   0	0   2   0	0   0   0	0   0   0	0   2   0   2
6	Mammal	Rhinoceros Indian One Horned	<i>Rhinoceros unicornis</i>	1   0   0   1	0   0   0	0   0   0	0   0   0	0   0   0	1   0   0   1
7	Mammal	Tiger Bengal	<i>Panthera tigris tigris</i>	1   1   0   2	0   0   0	1   0   0	0   0   0	0   0   0	2   1   0   3
<b>Total Mammals</b>				<b>5   1   0   6</b>	<b>0   0   0</b>	<b>7   6   4</b>	<b>0   0   2</b>	<b>3   1   1</b>	<b>9   6   1   16</b>
1	Reptile	Crocodile Long Snouted (Gharial)	<i>Gavialis gangeticus</i>	2   3   0   5	0   0   0	0   0   3	0   0   0	0   0   0	2   3   3   8
2	Reptile	Turtle Ganges Soft-shelled	<i>Nilssonia gangetica</i>	0   0   0   0	0   0   0	0   0   4	0   0   0	0   0   0	0   0   4   4
3	Reptile	Turtle Indian Black	<i>Melanochelys trijuga</i>	0   0   0   0	0   0   0	0   0   50	0   0   0	0   0   0	0   0   50   50
<b>Total Reptiles</b>				<b>2   3   0   5</b>	<b>0   0   0</b>	<b>0   0   57</b>	<b>0   0   0</b>	<b>0   0   0</b>	<b>2   3   57   62</b>
			<b>Total of Endangered Species</b>	<b>7   5   0   12</b>	<b>0   0   0</b>	<b>14   8   61</b>	<b>0   0   2</b>	<b>3   1   1</b>	<b>18   12   58   88</b>

## PART- B

Inventory Report for the Year : 2017-18

S.No.	SPECIE S NAME	ANIMAL NAME	SCIENTIFIC NAME	OPENIN G STOCK	BIRTHS	ACQUI SITION S	DISPO SALS	DEAT HS	CLOSING STOCK
				M   F   U   T	M   F   U	M   F   U	M   F   U	M   F   U	M   F   U   T
<b>Other than Endangered Species</b>									
1	Bird	Fowl Jungle Red	<i>Gallus gallus</i>	3   3   2   8	0   0   4	0   0   0	0   0   0	0   0   3	5   4   0   9
2	Bird	Heron Pond	<i>Ardeola grayii</i>	0   0   1   1	0   0   0	0   0   0	0   0   0	0   0   0	0   0   1   1
3	Bird	Parakeet Rose Ring	<i>Psittacula krameri</i>	0   0   0   0	0   0   0	0   0   40	0   0   0	0   0   0	0   0   40   40
4	Bird	Stork Adjutant (lesser)	<i>Leptoptilos javanicus</i>	0   0   0   0	0   0   0	1   0   1	0   0   0	0   0   0	1   1   0   2
5	Bird	Cockatoo Medium Sulpher Crested	<i>Cacatua galerita eleonora</i>	0   0   0   0	0   0   0	0   0   7	0   0   0	0   0   0	0   0   7   7
6	Bird	Cockatoo Moluccan/Sal mon-crested	<i>Cacatua moluccensis</i>	0   0   0   0	0   0   0	0   0   4	0   0   0	0   0   0	0   0   4   4
7	Bird	Cockatoo White	<i>Cacatua alba</i>	0   0   0   0	0   0   0	0   0   2	0   0   0	0   0   0	0   0   2   2
8	Bird	Macaw Blue & Yellow	<i>Ara ararauna</i>	0   0   0   0	0   0   0	0   0   7	0   0   2	0   0   0	0   0   5   5
9	Bird	Macaw Scarlet	<i>Ara macao</i>	0   0   0   0	0   0   0	0   0   1	0   0   0	0   0   0	0   0   1   1

10	Bird	Parakeet African Grey	<i>Psittacus erithacus</i>	0   0   0   0	0   0   0	0   0   13	0   0   0	0   0   1	0   0   12   12
11	Bird	Pheasant Golden	<i>Chrysolophus pictus</i>	3   3   0   6	0   0   0	0   0   0	0   0   0	1   1   0	2   2   0   4
12	Bird	Pheasant Silver	<i>Lophura nycthemera</i>	1   2   0   3	0   0   0	0   0   0	0   0   0	0   1   0	1   1   0   2
<b>Total Birds</b>				<b>7   8   3   18</b>	<b>0   0   4</b>	<b>1   0   75</b>	<b>0   0   2</b>	<b>1   2   4</b>	<b>9   8   72   89</b>
1	Mammal	Deer Barking (Kakar)	<i>Muntiacus muntjak</i>	10   6   7   23	0   0   4	0   0   0	0   0   0	0   0   0	10   6   11   27
2	Mammal	Deer Hog	<i>Axis porcinus</i>	0   0   0   0	0   0   0	2   3   0	0   0   0	1   0   0	1   3   0   4
3	Mammal	Deer Sambar	<i>Rusa unicolor</i>	7   9   4   20	0   0   1	3   6   0	1   0   0	0   2   0	9   13   5   27
4	Mammal	Deer Spotted (Chital)	<i>Axis axis</i>	79   108   15   202	8   16   46	40   65   0	0   0   0	12   12   0	115   177   61   353
5	Mammal	Pig Wild - Wild Boar	<i>Sus scrofa</i>	0   0   0   0	0   0   5	0   2   0	0   0   0	0   0   0	0   2   5   7
<b>Total Mammals</b>				<b>96   123   26   245</b>	<b>8   16   56</b>	<b>45   76   0</b>	<b>1   0   0</b>	<b>13   14   0</b>	<b>135   201   82   418</b>
<b>Total of Other than Endangered Species</b>				<b>103   131   29   253</b>	<b>8   16   60</b>	<b>46   76   75</b>	<b>1   0   2</b>	<b>14   16   4</b>	<b>144   209   154   507</b>
<b>Grand Total</b>				<b>110   136   29   275</b>	<b>8   16   60</b>	<b>60   84   136</b>	<b>1   0   4</b>	<b>17   17   5</b>	<b>162   221   212   595</b>

## 27. Mortality of animals

S. No.	Animal Name	Scientific Name	Sex	Date of Death	Reason of Death
1	Spotted Deer	<i>Axis axis</i>	M	21.03.2018	Due to Pulpy Kidney Disease
2	Spotted Deer	<i>Axis axis</i>	M	21.03.2018	Due to Pulpy Kidney Disease
3	Spotted Deer	<i>Axis axis</i>	F	20.03.2018	Due to Pulpy Kidney Disease
4	Spotted Deer	<i>Axis axis</i>	F	20.03.2018	Due to Pulpy Kidney Disease
5	Spotted Deer	<i>Axis axis</i>	F	20.03.2018	Due to Pulpy Kidney Disease
6	Spotted Deer	<i>Axis axis</i>	M	14.03.2018	Due to Multiorgan Failure
7	Spotted Deer	<i>Axis axis</i>	M	01.03.2018	Due to Haemorrhagic Enteritis
8	Spotted Deer	<i>Axis axis</i>	M	21.02.2018	Due to Starvation
9	Spotted Deer	<i>Axis axis</i>	F	05.02.2018	Due to capture Myopathy
10	Sambar	<i>Rusa unicolor</i>	F	23.01.2018	Due to Pneumonia
11	Spotted Deer	<i>Axis axis</i>	F	13.01.2018	Due to Catarrhal Enteritis
12	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	M	11.01.2018	Due to Pneumonia
13	Spotted Deer	<i>Axis axis</i>	F	10.01.2018	Due to Anaemia
14	Spotted Deer	<i>Axis axis</i>	M	08.01.2018	Due to Pleurisy
15	Spotted Deer	<i>Axis axis</i>	M	07.01.2018	Due to Urolithiasis
16	Spotted Deer	<i>Axis axis</i>	M	07.01.2018	Due to Acute Tympanitis
17	Spotted Deer	<i>Axis axis</i>	F	06.01.2018	Due to Anaemia
18	Golden Pheasant	<i>Chrysolophus pictus</i>	M	05.01.2018	Due to Haemorrhagic Anaemia
19	Silver Pheasant	<i>Lophura nycthemera</i>	F	03.01.2018	Due to Salpingitis
20	Golden Pheasant	<i>Chrysolophus pictus</i>	F	03.01.2018	Due to Retention of Yolk
21	African Grey Parrot	<i>Psittacus erithacus</i>	U	01.01.2018	Due to Respiratory Failure
22	Spotted Deer	<i>Axis axis</i>	F	29.12.2017	Due to Respiratory Failure

23	Hog Deer	<i>Axis porcinus</i>	M	12.12.2017	Due to Heart Failure
24	Spotted Deer	<i>Axis axis</i>	F	05.12.2017	Due to Heart Failure
25	Spotted Deer	<i>Axis axis</i>	F	04.12.2017	Due to Haemorrhagic Shock
26	Spotted Deer	<i>Axis axis</i>	F	04.12.2017	Due to Captive Myopathy
27	Spotted Deer	<i>Axis axis</i>	M	02.12.2017	Due to Transit Tetany
28	Spotted Deer	<i>Axis axis</i>	F	02.12.2017	due to Pregnancy Toxaemia
29	Sambar	<i>Rusa unicolor</i>	F	02.12.2017	Due to Hepatitis
30	Spotted Deer	<i>Axis axis</i>	M	19.11.2017	Due to Haemorrhagic Shock
31	Red Junglefowl	<i>Gallus gallus</i>	U	14.11.2017	Due to Respiratory Failure
32	Spotted Deer	<i>Axis axis</i>	M	07.11.2017	Due to Haemorrhagic Shock
33	Red Junglefowl	<i>Gallus gallus</i>	U	02.11.2017	Due to Respiratory Failure
34	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	F	01.11.2017	Due to Haemorrhagic Enteritis
35	Red Junglefowl	<i>Gallus gallus</i>	U	25.10.2017	Due to Respiratory Failure
36	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	M	23.10.2017	Due to Haemorrhagic Shock
37	Spotted Deer	<i>Axis axis</i>	M	18.10.2017	Due to Hepatitis
38	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	U	15.10.2017	Due to Infectious Anaemia
39	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	M	15.10.2017	Due to Infectious Anaemia
40	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	M	23.05.2017	Due to Infectious Anaemia
41	Asian Palm Civet	<i>Paradoxurus hermaphroditus</i>	U	19.05.2017	Due to Haemorrhagic Anaemia

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

### Observations of CZA and Action Taken Report F NO 22-64/2004-CZA (461)(VOL III)(AK)/1891/2017 DT 20/11/2017

Sl. No.	Norm No.	Condition	Time period to comply	Reply
<b>1.General Requirements</b>				



1	10.1(4)	<p>a) It was observed that a portion of the perimeter fence fencing the Sevoke Road had tilted and could collapse. The same may be strengthened and its structural stability ensured.</p> <p>b) It was observed that the iron flats used as binders to chain-link have just been fixed through welding. This may give way due to weathering. It is advised that additionally the flats may be bind together by used of nut &amp; bolt, to provide strength to the fence.</p>	Immediately	<p>Repaired immediately</p> <p>Regular checking been made in fencing. However additional protection will be made where required</p>
2	10.1(5)	The Zoo operator should construct 2 meters high masonry wall along the perimeter to allay all possible further threats to the zoo animals.	Two years	The fence shall be upgraded with a 2m high wall within the given time period. Proposal already sent to GB for approval
3	10.1(7)	The Zoo should put in place appropriate mechanism to dispose off all solid wastes generated in the zoo.	Three months	Solid biodegradable waste made to vermi-compost. STP also working
<b>2.Administrative &amp; Staffing Pattern</b>				
4	10.2(2)	The Zoo operator should appoint a full-time Curator and an Education officer as the zoo aspires to become a medium category zoo.	Three months	The zoo service & recruitment rules have been soon been finalized and accordingly recruitment of Education officer shall be done. At present Asst Director working as curator.
<b>3.Development and planning</b>				
5	10.3(5)	<p>a) A parking plaza having designated areas/sheds for two wheelers and four wheeler should be provided at the entrance. The plaza may also consist of a one toilet complex for (gents &amp; ladies each), a baby care room for nursing mothers, a medical inspection room for first aid etc. and a cloak room for luggage.</p> <p>b) The bonsai pavilion currently located</p>	One Year	<p>Parking area for car &amp; two wheeler is present. Separate toilet, drinking water facility in parking area.</p> <p>Baby care room, Cloak Room also made</p> <p>Bonsai pavilion will</p>

		near the gate may also be shifted to the parking plaza. The above facilities should be provided with medium change in the landscape.		be shifted in due course
6	10.3(6)	The Zoo operator should submit revised Animal Collection Plan for approval of the Central Zoo Authority as it is found to be vague in nature and has included all free ranging animals found in the geography. It should be revised having focus on conservation of endangered fauna of Riverine Grassland, River Mahananda and Tropical Forests of Eastern Himalayan foothills. Similar plan may be prepared for conservation of flora in the proposed Biodiversity Park.	Six months	Will be submitted
7	10.3(7)	The Zoo should construct Isolation cum quarantine enclosure near the Veterinary hospital campus. All newly arriving animals shall be subjected to quarantine before admitting them in to the safari/display enclosure.	Four months	One Isolation enclosure made near vet hospital
<b>4. Animal housing, display of animals and animal enclosure</b>				
8	10.4(3)	(a)Currently the sliding gates opening into the safari are operated from outside the night shelter complex. This may become difficult to operate in inclement weather. The zoo authorities may explore providing drop down gates with gears, which are safe and can be operated from inside the night shelter. (b)Rain shelter should be provided for Safari gate operators.	With immediate effect	Safe handle of sliding gate been made.  Complied
9	10.4(6)	Thick wooden platforms should be provided inside the feeding and retiring cubicles of tiger. They should also be cleaned on daily basis and disinfected.	Immediately	Complied
<b>5. Upkeep and healthcare of animals</b>				
10	10.5(2)	Meat inspection and processing room is located within the zoo commissary complex. It is advised that the farthest	Three months	Farthest room in the commissary is closer to the veterinary

		room in the commissary which is closer to the veterinary hospital be converted into a meat inspection and processing room. Separate entrance should be provided to the room and its access from the store and kitchen should be closed. The room should be made fly-proof and provided with necessary granite table and deep freezer. All washouts from the room should be disposed off in a hygienic manner through soak pits.		hospital & it is meat inspection and processing room .Separate entrance to meat inspection Room been made with deep freezer & fly proof
11	10.5(5)	Concentrate feed to be herbivores in safari is being provided on the ground. This is unhygienic and prone to bacterial and fungal infestation. It is advised that the same may be provided on raised concrete platforms. Suitable shade may also be provided on top of the platforms for protection of the food from rain. These platforms should be created away from visitors' view and waterholes and the entire structure should merge with the forest environment.	Six months	complied
12	10.5(5)	(a)All the feeding cells should be disinfected and cleaned on day to day basis. Disinfectants like Khorsoline should be used to clean the floors. The cells should also be blow lamped once every week and cleaned food hot water. (b)Leftover food should be disposed of in a manner that it has no adverse impact on the immediate environment and the landscape surrounding the centre. Meat leftovers should be incinerated.	Immediately	Disinfectants like Khorsoline is used to clean the floors. Feeding cells regularly cleaned. Leftover food is properly disposed off
13	10.5(9)	All staff involved in upkeep & healthcare of animals should be subjected to annual health check-up to avoid spread of Zoonotic diseases.	Once in a year	complied
<b>6.Veterinary and Infrastructure Facilities</b>				
14	10.6(3)	The zoo should have Post-mortem Room, Isolation and Quarantine Ward, animal restraining and tranquilizing equipment.	Three months	During evaluation post mortem room was under construction and now it is completed

				& most of Vet equipments purchased and will be purchased based on requirement including tranquilizing equipment.
15	10.6(5)	A Lab Assistant should be appointed to help the Veterinarian in day to day investigation.	Three months	Will be complied
16	10.6(6)	The zoo should enter into a written agreement with the veterinary college for Round the year veterinary support, Training of zoo personnel and Veterinary internship.	Immediately	Complied
<b>7. Post-mortem and disposal of carcass of animals</b>				
17	10.7(3)	In the event the Post-mortem being inconclusive and no specific reason for death is identified, the authorities should send sample of tissues, organs, blood & viscera etc. for further examination to the nearest veterinary laboratory having adequate specialization for further investigation. Samples may also be sent to the Indian Veterinary Research Institute being the National Referral Centre.	As and when need arises.	Will be followed when need arises
18	10.7(4)	An incinerator may be installed near the post-mortem room for safe disposal of animal carcasses and other bio-wastes. Carcasses of all large cats shall be disposed of by burning in presence of the Director of the zoo or any officer, in next rank to him and authorized by him in this regards.	Immediately	Proposal sent to higher authority
<b>9. Acquisition and breeding of animals</b>				
19	10.9(9)	Effective population control measures should be put in place to have a check on the prolifically breeding species like Chital.	With immediate effect	Will be complied
20	10.9(10)	Effective safeguards should be put in place to retrieve animals escaping accidentally from the safari park.	Immediately	QRT team with nets, tranquilizing equipments, walkie

		Action taken be reported to the CZA immediately.		talkie, CCTV support & others with public addressing system been arranged
<b>10. Research activities</b>				
21	10.10	The zoo authorities should engage graduate/postgraduate students in studying the behavioural changes of animals which are replaced from small enclosure to near nature large open enclosure, which will aid in better management by entering into an agreement with nearby institutions such as the North Bengal University & local College.	One Year	Will be complied
<b>11. Education and outreach activities</b>				
22	10.11(1)	The zoo is constructing a Nature Information Centre (NIC). The plan shared during the evaluation revealed creating an amphitheatre for closed projection and an open-air theatre. It is advised that a detailed proposal for utility of Centre may be prepared period to its commissioning. Similarly , the entrance to the Centre may be designed accordingly to accommodate smooth entry and exit of visitors on a crowded day	Immediately	Will be complied
<b>12. Visitors' facilities</b>				
23	10.12(2)	The zoo should provide anti-venom and first aid kits in the zoo campus.	With immediate effect	Anti venom procured and stored in zoo hospital
24	10.12(3)	The Safari bus should be made disabled friendly both in terms of embarkation/ disembarkation and seating.	Three months	Exploring the possibilities

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

As per the short term research project titled "Survey of free living Flora and Fauna of North Bengal Wild Animals Park", the following result in the Phase I of the report has been prepared of the biodiversity of the Park:

## Flora:

### Distribution of Floristic elements in Bengal Safari

Categories	Angiosperms	Gymnosperms	Pteridophytes	Bryophytes	Algae	Fungi
Families	88	1	14	3	4	15
Genera	297	1	22	3	4	22
Species	391	1	29	3	4	28

### Habit Distribution of Angiospermic elements in Bengal Safari

Habit	No. of Species
Tree	64
Shrubs	63
Liana	7
Climbers	52
Herbs	205
<b>Total =</b>	<b>391</b>

### Niche Distribution of the Floristic elements in Bengal Safari

Habitat	Angiosperms	Gymnosperms	Pteridophytes	Bryophytes	Algae	Fungi
Aquatic	14		6		4	
Terrestrial	332	1	18	3		
Epiphytic	5		5			
Amphibian	40					
Saprophytes & Paracytes						28

## Fauna:

### Faunal Diversity of Bengal Safari

Categories	No. of Family	No of Genera	No of Species
Nematoda	2	2	2
Arthropoda	103	279	312
Mollusca	11	17	20
Fishes	12	20	30
Amphibia	5	7	11
Reptiles	8	12	13
Aves	48	75	95
Mammals	9	12	12

## Arthropods of Bengal Safari

<b>Class</b>	<b>Order</b>	<b>Family</b>	<b>Genera</b>	<b>Species</b>
Arachnida	Araneae	16	32	39
Chilopoda	Scolopendramorpha	1	1	1
Chilopoda	Scutigermorpha	1	1	1
Chilopoda	Spirostreptida	1	1	1
Crustacea	Decapoda	1	2	2
Insecta	Hymenoptera	7	22	25
Insecta	Diptera	11	16	16
Insecta	Hemiptera	10	12	13
Insecta	Coleoptera	14	40	40
Insecta	Lepidoptera	21	89	106
Insecta	Odonata	5	28	33
Insecta	Orthoptera	9	28	28
Insecta	Embioptera	1	1	1
Insecta	Mantodea	1	2	2
Insecta	Neuroptera	1	1	1
Insecta	Phasmatodae	1	1	1
Insecta	Psocodea	1	1	1
Insecta	Thysanoptera	1	1	1
Class = 4	<b>Total</b>	<b>103</b>	<b>279</b>	<b>312</b>

## Distribution of Phylum Molluscs in Bengal Safari

<b>Order</b>	<b>Family</b>	<b>Genera</b>	<b>Species</b>
4	11	17	20

## Ichthyofaunal Diversity of Bengal Safari

<b>Category</b>	<b>No.</b>
Order	6
Families	12
Genera	20
Species	30

## Family wise species distribution of Fishes

<b>Families</b>	<b>No. of genera</b>	<b>No. of Species</b>
Anguillidae	1	1
Cyprinidae	1	1
Balitoridae	2	2
Cobitidae	3	3
Cyprinidae	6	8
Channidae	1	7

Badidae	1	1
Gobidae	1	1
Bagridae	1	3
Heteropneustidae	1	1
Mastacambalidae	1	1
Synbranchidae	1	1
<b>Total</b>	<b>20</b>	<b>30</b>

#### Amphibian Diversity in Bengal Safari

Order	Family	Genera	Species
1	6	7	11

#### Reptilian Diversity of Bengal Safari

Order	Family	Genera	Species
Squamata	Agamidae	1	1
	Colubridae	4	4
	Elapidae	2	2
	Gekkonidae	1	2
	Pythonidae	1	1
	Scincidae	1	1
	Varanidae	1	1
	Viperidae	1	1

#### Avian diversity in Bengal Safari

Order	Family	Genera	Species
15	48	75	95

#### Species wise distribution of Aves in Bengal Safari

Order	Family	Genera	Species
Accipitriformes	1	2	2
Bucerotiformes	1	3	3
Charadriiformes	3	3	4
Columbiformes	1	4	4
Coraciiformes	4	5	7
Cuculiformes	1	4	4
Falconiformes	1	1	1
Galliformes	1	2	2
Gruiformes	1	1	1
Passeriformes	24	34	48
Pelecaniformes	3	6	6
Piciformes	4	5	6



Psittaciformes	1	1	3
Strigiformes	1	3	3
Suliformes	1	1	1

Mammalian diversity in Bengal Safari

<b>Order</b>	<b>Family</b>	<b>Genera</b>	<b>Species</b>
7	9	12	12