



**BRIHANMUMBAI MAHANAGARPALIKA**  
**VEERMATA JIJABAI BHOSALE UDYAN & ZOO**  
**BYCULLA, MUMBAI**



**ANNUAL REPORT FOR THE YEAR 2017- 18**



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

### **From Director's Desk**

*Veermata Jijabai Bhosale Udyan & Zoo, Byculla Mumbai has witnessed monumental changes this year in all sections like upgraded visitor amenities, upkeep of gardens and exhibits, improvisation of pathways and roads, strengthened security surveillance, animal health care, and many other operational changes required on field. The Zoo has progressively emerged as a favourite destination and vibrant centre of attraction for visitors. As a Medium Zoo, recognition up to March 2020 has been awarded from CZA supplemented by improvised public amenities along with animal housing and health care to the captive wild animals. In collaboration with CZA, New Delhi, the zoo recently organised Interactive session on Zoological Information & Management Systems (ZIMS) for data entry in the software.*

*To bring changes, requires a strong will power & support. With the constant support & motivation of MCGM administration, assistance from the colleagues & staff and with channelised efforts we have seen significant developments in this year. All the areas have flourished combining economical growth due to increase in fees along with public awareness through various educational drives, up gradation of visitor facilities and last but not the least the animal upkeep is kept upright by way of enhanced medical facilities and sincere efforts of staff.*

*The Humboldt penguins are now settled here during a year and have already selected pairs amongst each other. The pairs have selected their nesting areas for egg laying and the birds are happy in their cosy habitat.*

*The internal gardens at 63 plots give a green, serene view and lawns/gardens are being maintained by an agency specially appointed for the upkeep and beautification of internal gardens, pathways, lawns and pocket gardens inside the zoo. A specialized housekeeping agency has been working diligently for overall hygiene & cleanliness of the zoo premises including upright roads and pathways, cleansed toilets and water fountains along with polished statues and heritage structures.*

*The zoo has developed various public amenities like Child care centres, Rain shelters, drinking water fountains, toilets and has also assured the cleanliness factor for all these structures. The response of visitors is overwhelming and increase in visitor footfall shows a figure of more than 1.7 million visitors fetching revenue of Rs.4.37 Crores annually during 2017-18.*

*The animal health care is mainly handled by veterinarians and animal keepers working round the clock. There has been a substantial improvement in the field of animal health care and the zoo hospital is well equipped with veterinary, medical & surgical instruments/equipments required in hand for better health care, treatment and well being of zoo animals.*

*Education is another field, Veermata Jijabai Bhosale Udyan & Zoo takes up positively in order to create awareness amongst general visitors on the conservation of environment and wild animals. We take up regular education programmes for school children and college students visiting the zoo. Awareness programmes for the visitors, school teachers are taken*



*up by way of nature trails and various competitions held with the help of zoo volunteers. Cafeteria will be functional soon nearing Diwali and auditorium will be ready with well equipped audio-visual appliances. CCTV network with more than 250 cameras is installed by which the security aspect of the zoo is reassured.*

*In the upcoming phase of modernisation project, the upgraded animal exhibits (17 nos.) with naturalistic environment, acrylic glass panelled walls, signages, landscapes, etc. will be in shape and within a couple of years new animals will be displayed. The animal facilities are being constructed keeping in the immersive environment approach while persuading the modern concept of animal display.*

*Best Wishes to the accomplishments in future endeavors !!!*

*Dr. Sanjaykumar A. Tripathi*

***Director (Zoo)***

## 2. History of the Zoo

*Triple Arched Entrance Gate of Veermata Jijabai Bhosale Udyan & Zoo*



Veermata Jijabai Bhosale Udyan & Zoo is one of the oldest zoos in the country & was established in 1862. This area was under the control of Agri-Horticultural Society of Western India. The management of this Udyan & Zoo was handed over to MCGM by the then state govt in 1873. The total area of this Udyan & Zoo is approx. of 53 acres and is declared as “Heritage Grade II (B)” site. This Udyan & Zoo has been given recognition as “Medium Zoo” by Central Zoo Authority, New Delhi.

### 3. Vision

Veer mata Jijabai Bhosale Udyan and Zoo is one of the oldest zoos in the country and was established in the year 1862. The total area of the Udyan and the Zoo is approximately 53 acres and is declared as Heritage Grade II (B) site. This Udyan and Zoo as been given recognition as “Medium Zoo” by the Central Zoo Authority, New Delhi

Considering the small area of this zoo and a great footfall (around 10 to 15 thousand visitors on an average per day) it is felt that this zoo should work more in educating the people for creating love, interest, empathy and awareness among general visitors, school students/teachers group, college students and representative of various organisations. Various event days related to wildlife, Nature and Environment shall be organised for the purpose in the interpretation centre newly constructed at this zoo having the facilities such as a 200 seater auditorium and exhibition areas which are under development. These facilities can be used for conducting various training programme, seminars, workshops, exhibition, wildlife weeks, essay/drawing/elocution competitions and similar other activities including various audiovisual shows, wildlife movies and power point presentation etc.

Most of the New Animal Enclosures will be open and spacious (as per the area norms prescribed for Indian Animals by the Central Zoo Authority, New Delhi). The Natural environment, as per the natural habitat of the respective animals will be created. This will satisfy the basic needs of the animals and provide them comfort and security. These exhibits will also be helpful in educating the visitors about the natural habitats of the animals. There will be visitors viewing areas with the acrylic glass panels, which would not only serve the purpose of a barrier in between the animals and visitors but also shall facilitate the visitor's viewing.



*Glass viewing*      *Entrance Lobby of Zoo Interpretation Centre*

*Humboldt Penguin Exhibit-*



#### 4. Mission

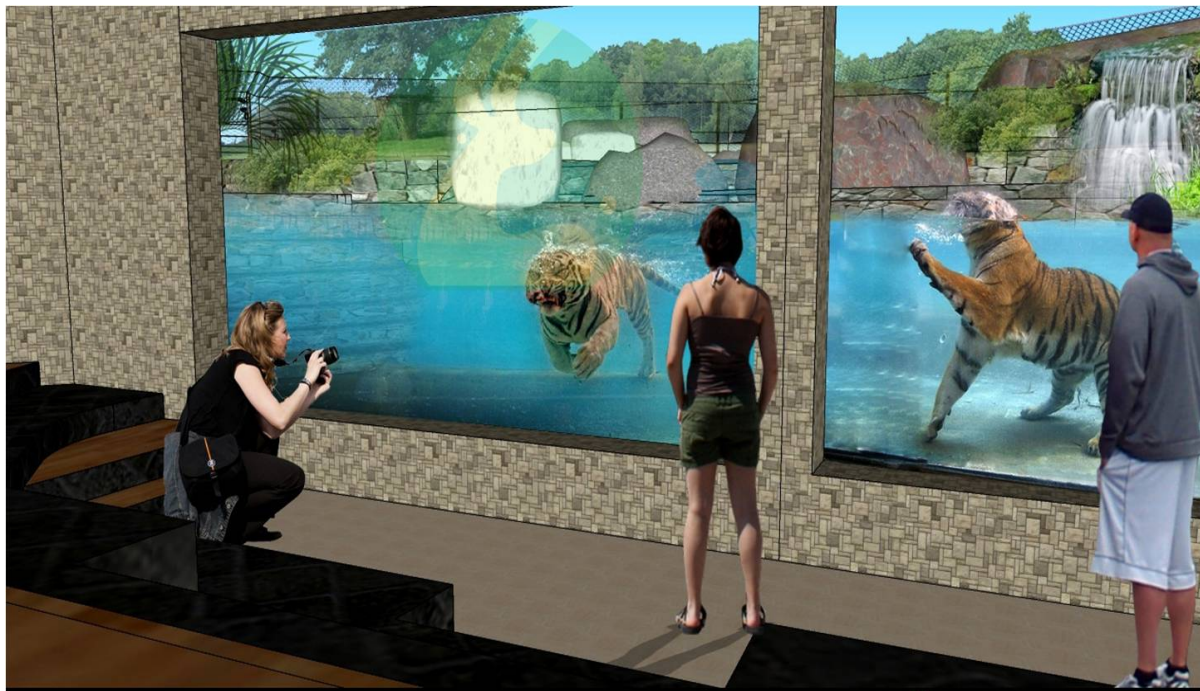
##### **“To engender a respect for wildlife and inspire conservation action”**

The zoo aims to create an ambiance that will create awareness about wildlife and inculcate a healthy attitude towards animals. By providing naturalistic, immersion exhibits that display animals in their “wild” surroundings and by imparting information through engaging signage, the zoo aims to become a learning centre, albeit in a relaxed and leisurely manner.

The future objective of the zoo is to meet world standards for animal care and husbandry, for environmental education and to be a truly memorable visitor experience.

As part of its mission, the zoo aims to help the visitor be a good zoo steward. Caring for the collection is a primary responsibility of the zoo and the visitor has an important role to play in ensuring the health and well-being of the collection. Visitors shall be briefed on what behaviours are acceptable in the zoo, how their behaviour has an impact on animal health and the quality of their own experience and the reasons why respectful conduct is important. Visitor action, both at the zoo and at their home, should serve as an example to others to respect wildlife and to protect the environment on which all life depends.

It is important to educate the visitors about extinction and remind them of our losses, like the dodo, the Indian Cheetah, the Pink headed duck which were all lost due to man’s fault. Remembering our losses is important so that we may learn not to commit the same grave mistakes again and help species that are already on the brink of extinction and thus inspire conservation action amongst them.



*Royal Bengal Tiger Exhibit designed with new concept of Underwater viewing*

## 5. Objective

The objective of the V.J.B udyan and Zoo is to develop in to one of the best Zoos in the country as well as abroad , by providing best facilities to the Zoo inmates as well as the visitors. Such as a well equipped Zoo hospital, cafeteria, food kiosks, drinking water fountains, beautiful internal gardens, rain water shelters, high class Toilets etc. It aims to perform as one of the best nature Interpretation centre for creating interest and awareness about the role of a Zoo in particular and also about Nature, Wildlife and Environment in general, in the minds of people, especially school/college students and teachers. The Zoo interpretation centre having facilities such as an auditorium for conducting various educational activities and the exhibition area are under development, which will be functional in near future.



*Zoo hospital building*



*Interior view of Operation theater in Zoo hospital*





*Beautification of Rose Circle Garden on the Central Axis of the Zoo*



*Drinking water fountains*



*Public Toilet Facility*



*Ticketing Complex at Entry Plaza*

*Baggage counter*





*Selfie Point at the Entry Plaza*

*Artificial waterfall Selfie Point at Entry Plaza*

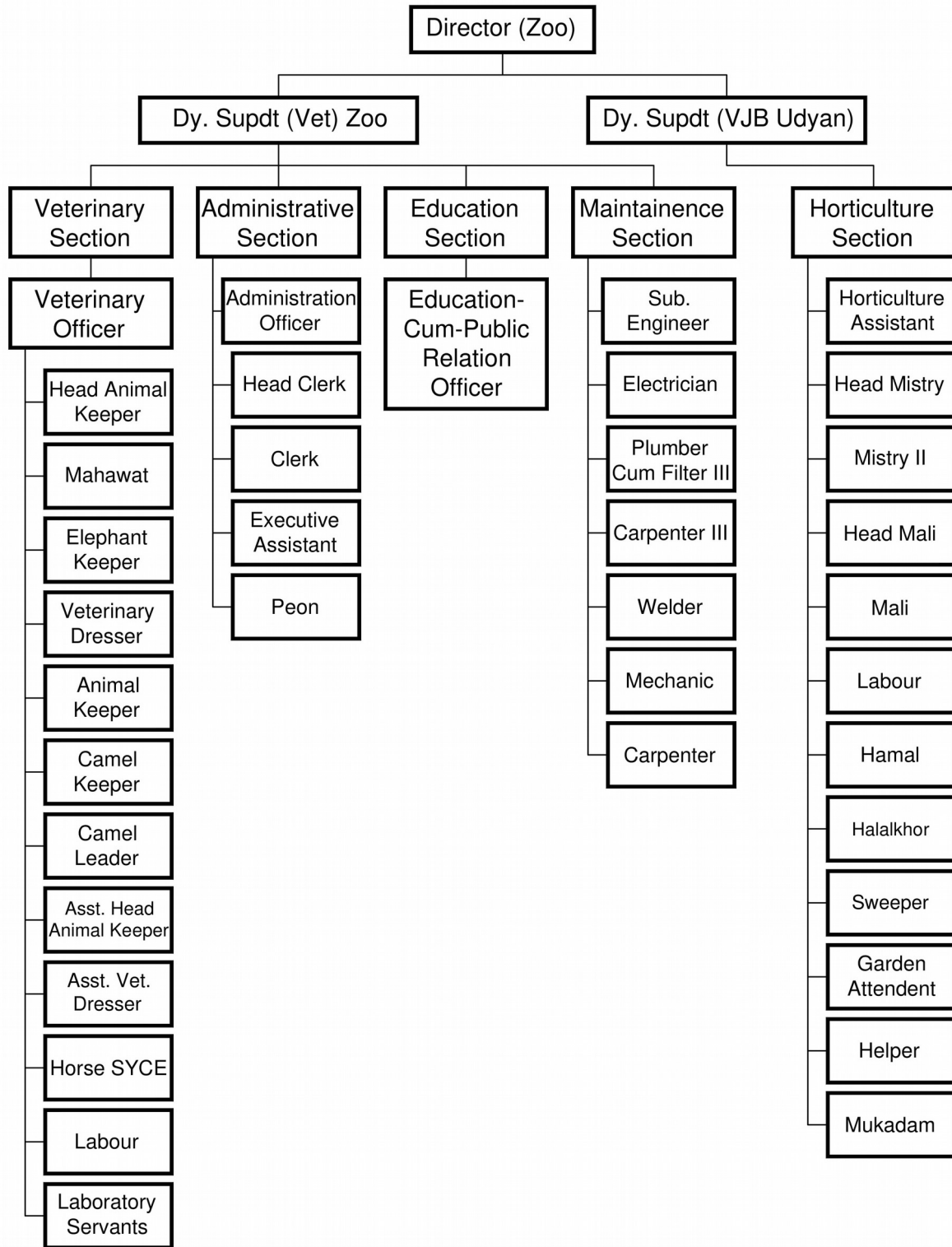
## 6. About us

S.No.	Particulars	Information
<b>Basic Information about the Zoo</b>		
1	Name of the Zoo	<b><u>Veermata Jijabai Bhosale Udyan &amp; Zoo</u></b>
2	Year of Establishment	<b>1862</b>
3	Address of the Zoo	<b>Dr. Babadaheb Ambedkar Rd., Byculla (East), Mumbai- 400 027</b>
4	State	<b>Maharashtra</b>
5	Telephone Number	<b>022-223772414</b>
6	Fax Number	—
7	E-mail address	<b><a href="mailto:vjbudyanzoo@yahoo.co.in">vjbudyanzoo@yahoo.co.in</a></b> <b><a href="mailto:dirzoo01@mcgm.gov.in">dirzoo01@mcgm.gov.in</a></b>

<b>S.No.</b>	<b>Particulars</b>	<b>Information</b>
8	Website	–
9	Distance from nearest	Airport: <b>16 km (Approx)</b>
		Railway Station: <b>From Byculla Station: 550 m (Approx)</b> <b>Reay Road Station: 700 m(Approx)</b>
10	Recognition Valid upto (Date)	<b>22/03/2020</b>
11	Category of zoo	<b>Medium</b>
12	Area (in Hectares)	<b>21.4483 Hectares (Approx)</b>
13	Number of Visitors (Financial Year)	Adult : <b><u>1371669</u></b>
		Children : <b><u>383836</u></b>
		Total Indian : <b><u>1755505</u></b>
		Total Foreigners : <b><u>1607</u></b> Date 01.08.2017 to 31.03.2018
		Total Visitors: <b><u>1757112</u></b>
14	Visitors' Facilities Available in Zoo	<b>1. Ticket house with baggage counter souvenir shop and public toilet. 2. Drinking water fountains 3. Rain water shelters 4. Interpretation Center. 5. Public Toilets.</b>
15	Weekly Closure Day of the Zoo	<b>Wednesday</b>
<b>Management Personnel of the zoo</b>		
16	Name with designation of the Officer in-charge	<b>Dr. Sanjaykumar A. Tripathi</b> <b>Director (Zoo) I/C</b>

<b>S.No.</b>	<b>Particulars</b>	<b>Information</b>
	Name of the Veterinary Officer	<b>Dr. Komal Raul</b>
	Name of the Curator	–
	Name of the Biologist	–
	Name of the Education Officer	<b>Shri. Anil L. Paranjpe</b>
	Name of the Compounder/ Lab Assistant	<b>Shri. Gurunath Narvekar</b>
<b>Owner / Operator of the Zoo</b>		
17	*Name of the Operator	<b>Municipal Commissioner. Municipal Corporation of Greater Mumbai</b>
18	Address of the Operator	<b>2<sup>nd</sup> Floor, Municipal Head Office, Mumbai- 400 001.</b>
19	Contact details/Phone number of Operator	<b>022- 22620251 022-22620525</b>
20	E-mail address of Operator	<b><a href="mailto:mc@mcgm.gov.in">mc@mcgm.gov.in</a></b>

7. Organizational chart



## 8. Human Resources

<b>Sr. No.</b>	<b>Designation</b>	<b>Number of Sanctioned Posts</b>	<b>Names of the incumbent</b>
1	Director of Zoo	1	0
2	Deputy Superintendent (Vet) of Zoo/ Director of Zoo (I/C)	1	1
3	Deputy Superintendent of Garden	1	1
4	Veterinary Officer	1	1
5	Education -Public Relation Officer	1	1
6	Administrative Officer	1	1
7	Head Clerk	1	0
8	Horticultural Assistant	4	3
9	Clerk	3	3
10	Executive Assistant	2	2
11	Clerk (Store)	1	1
12	Peon	2	2
13	Tracer	1	0
14	Draftsman	1	0
15	Mechanic	1	0
16	Mistry I	1	0
17	Welder	1	0
18	Helper	1	0
19	Carpenter II	1	0
20	Painter	2	0
21	Head Mali	1	0
22	Plumber cum Fitter -III	1	0
23	Garden Attendants	3	2

24	Carpenter- III	1	0
25	Mukadam	5	0
26	Mistry II	4	2
27	Mali	81	31
28	Sweeper	14	12
29	HalalKhor	1	0
30	Store Attendant	1	0
31	Garden Labourer	15	4
32	Hamal	2	0
33	Cart Driver	2	0
34	Head Animal Keeper	1	0
35	Mahawat	3	1
36	Elephant Keeper	1	1
37	Camel Keeper	2	0
38	Camel Leader	1	0
39	Assistant Head Animal Keeper	2	0
40	Veterinary Dresser	1	1
41	Animal Keeper	25	16
42	Assistant Veterinary dresser	1	1
43	Horse Syse	2	0
44	Zoo Labourer	14	10
45	Laboratory Servants	2	1
	<b>TOTAL</b>	<b>214</b>	<b>98</b>

### **9. Capacity building of zoo personnel**

<b>Sr. 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. S. A. Tripathi, Director (Zoo)	Annual Conference of Indian Zoos on the topic "VISION 2030	18-21st Dec 2017.	Sri Chamarajendra Zoological Gardens, Mysuru
2.	Dr. Komal V. Raul, V.O.	Capacity Building of Indian Zoo Veterinarians on Animal Health Management in Captivity	11-14 <sup>th</sup> Sept 2017	National Zoological Park, New Delhi
3	Mr. Anil Paranjpe, E.P.R.O	Middle level Zoo officials Training programme	11-14 <sup>th</sup> Dec 2017	Sanjay Gandhi Biological Park, Patna, Bihar.
4	Mr. Mahesh Chaugule	Enrichment Workshop for Zoo Keepers	5-6 <sup>th</sup> June 2017	Rajiv Gandhi Zoological Park, Katraj, Pune.
5	Mr. Raju Irranna Bhandari	Enrichment Workshop for Zoo Keepers	5-6 <sup>th</sup> June 2017	Rajiv Gandhi Zoological Park, Katraj, Pune.
4.	Mr. Amol Shinde	Zoo Keeper Training	19 <sup>th</sup> -25 <sup>th</sup> Feb 2018.	Sakkarbaug Zoo

**10. Zoo Advisory Committee – NIL**

**11. Health Advisory Committee-**

**a. Date of Constitution-** 05.07.2011

**b. Members**

1.) Dr. D. U. Lokhande

Professor, Dept. of Surgery & Radiology

2.) Dr. D.G. Dighe

Asst. Professor, Dept. of Medicine

3.) Dr. G.M. Gadegaonkar

Asst. Professor, Dept. of Animal Nutrition

4.) Dr. P.V. Meshram

Asst. Professor, Dept. of Pathology

5.) Dr. P. E. Awari

Asst. Professor, Dept. of Poultry Science,

**c. Dates on which meetings held during the year- NIL**



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

<b>Financial Year 2017-18</b>			
<b>Annual Revenue (Rs.) Entry fees</b>		43753000	
<b>Annual Expenditure (Rs.)</b>			
Allotted Revenue Budget	Consumed Revenue Expdt.	Allotted Capital Budget	Consumed Capital Expdt
205300000	9518000	329100000	100000000

## **13. Daily Feed Schedule of animals**

<b>Sr. No.</b>	<b>Species</b>	<b>Feed item</b>	<b>Quantity</b>		<b>Day of fasting</b>
			<b>Winter</b>	<b>Summer</b>	
1.	Elephant	a). Hay	20 kg.	5 % less feed	None
		b). Rice Straw	10 kg.		
		c). Lucern grass	55 kg.		
		d). Banana	1 Dozen		
		e). Carrots	15 kg.		
		f). Sugar Cane	25 kg.		
		g). Pony pellets + wheat bran + oil cake	5 kg. + 5 kg. + 0.8 kg.		
		h). Jaggery			
		i). Garlic+pepper+ sesame seeds+	500gm		

		turmeric+ methi +linseed+ karli	1.5kg		
2.	Hippopotamus	a). Soaked Gram + Maize b). Wheat Bran c). Lucern grass	6 Kg. 10 Kg. 30 Kg.	5 % less feed	None
3.	Sambar, Nilgai	a). Soaked gram + maize b). Wheat bran + Oil cake c). Carrots d). Lucern Grass e). Hay f). Cattle Feed g). Bananas h). Rock salt	½ Kg. ½ Kg.+100gm ¼ Kg. 2 Kg. 1 Kg. ½ Kg 4-5 nos.	5 % less feed	None
4.	Black Buck, Spotted Deer, Barking Deer	a). Soaked Gram + Maize b). Wheat Bran c). Carrots d). Lucern Grass e). Hay f). Cattle Feed	½ Kg. ½ Kg. ¼ Kg. 1 Kg. 1 Kg. ¼ Kg	5 % less feed	None
5.	Monkey	a). Groundnuts with cover b). Socked gram + Maize c). Carrots d). Banana e). Ladies finger, Beet, Tomato, Cucumber f). Other vegetables and Fruits (apple, guava, seasonal fruit)	100 gms. 100 gms. 50 gms. 4 No. }80 gms. }1 Kg.	5 % less feed	None

		g). Water Melon	100 gms	5 % less feed	
6.	Hyaena	a). Chicken b). Liver c). Rock Salt	4 Kg. 200 gms. Always avail	4 Kg. 200 gms. Always avail	Wednesday.
7.	Crocodile	a). Chicken b). Fish	3 Kg. 3 Kg.	3 Kg. 3 Kg.	Sunday, Monday, Wednesday, Thursday, Saturday
8.	Gharial	a). Fish	6 Kg.	6 Kg.	Wednesday to Monday
9.	Snakes	a). Mice	1 No.	1 No.	Depending on the size
10.	Pied Horn Bill	a). Plantain (Banana) b). Papaya c). Minced meat d). Seasonal fruits	4 Nos. 100 gms. 30 gms. 50gms	4 Nos. 100 gms. 30 gms. 50gms	None
11.	Adjutant stork/ Painted Stork	a). Fish	500 gms.	500 gms.	None
12.	Pelican	a). Fish	2 Kg.	2 Kg.	None
13.	Macaw (per pair)	a). Apple, Chickoo b). Groundnuts with cover c). Sugar cane d). Guava e). Sunflower seed f). Paddy g). Cuttle fish Bone h). Corn Cobs i). Green peas	300 gms. 200 gms. 200 gms. 100 gms. 100 gms. 50 gms. Always avail. In season In season	300 gms. 200 gms. 200 gms. 100 gms. 100 gms. 50 gms. Always avail. In season In season	None
14.	Parrot	a). Apple, Chickoo	100 gms.	100 gms.	None

	(per pair)	b). Groundnuts with cover c). Sugar cane d). Guava e). Sunflower seed f). Paddy g). Cuttle fish Bone h). Corn Cobs i). Green peas	100 gms. 100 gms. 100 gms. 60 gms. 30 gms. Always avail. In season In season	100 gms. 100 gms. 100 gms. 60 gms. 30 gms. Always avail. In season In season	
15.	Budgerigar (per pair)	a). Kang (Khursani) b). Fruits c). Coriander Leafy Veg. d). Cuttle Fish Bone	300 gms. 100 gms. 200 gms. Always available	300 gms. 100 gms. 200 gms. Always available	None
16.	Crane	a). Mixed Grain. b). Fish c). Mixed Leafy vegetables	250 gms. 200 gms. 50 gms.	250 gms. 200 gms. 50 gms.	None
17.	Cockatiel (Per pair)	a). Kang b). Sunflower seed c). Mixed vegetables d). Mash (chonga) e). Cuttle Fish Bone	50 gms. 50 gms. 100 gms. 50 gms. Always avail.	50 gms. 50 gms. 100 gms. 50 gms. Always avail.	None
18.	Red Crown Crane	a). Fish b). Mixed Grain c). Mixed vegetables d). Mixed Fruits	300 gms. 250 gms. 100 gms. 100 gms.	300 gms. 250 gms. 100 gms. 100 gms.	None
19.	Emu	a). Mixed Grains (crushed ) c). Mix-Leafy	250 gms.	250 gms.	None

		vegetables	100 gms.	100 gms.	
		c). Mix Fruits			
		d). Soaked Gram	200 gms.	200 gms.	
		e). Boiled Eggs	50 gms.	50 gms.	
		f). Lucern Grass	1/2 Egg	1/2 Egg	
		g). Bird Feed	200 gms.	200 gms.	
			250 gms	250 gms	
20.	Wild Boar	a). Wheat bran + Oil cake	½ Kg.+100gm	½ Kg.+100gm	None
		b). Carrots	2kg	2kg	
		c). Lucern Grass	2 Kg.	2 Kg.	
		d). Hay	1 Kg.	1 Kg.	
		e). Bananas	4-5 nos.	4-5 nos.	
		f). Rock salt			
		g). sweet potato	1 kg	1 kg	
		h). sugar cane	750 gms	750 gms	
		i). palak	1kg	1kg	
		j). cucumber	300gms	300gms	
21.	Humboldt Penguins	Sardine/Eel/ Bombay Duck/ Mackerel/ Indian Salmon/ Anchovies	700-800 gms	700-800 gms	Sunday

#### **14. Vaccination Schedule of Animals**

<b>Sr. no.</b>	<b>Species</b>	<b>Disease vaccinated for</b>	<b>Name of the vaccine and dosage/ quantity used</b>	<b>Periodicity</b>	<b>Remarks</b>
1.	Hyaena	a) Canine Distemper b) Canine Leptospira- canicola, pomona grippotyphosa, and icterohaemorrhagica	7 in 1 vaccine	Annually	Intramuscular

		c) Canine Adenovirus type 2 d) Canine Parainfluenza e) Canine Parvovirus			
		a) Canine Rabies	Anti-Rabies vaccine	Annually	
		a) Canine Corona virus	Carona vaccine	Annually	
2.	Elephant	a) Rabies	Anti-Rabies vaccine	Annually	Intramuscular
		b) Tetanus	Tetanus toxoid vaccine (T.T.)	Annually	
3.	All birds	a) Ranikhet disease	Lasota vaccine/ Ranikhet vaccine	Biannually	Drinking water

### **15. Deworming Schedule of Animals**

<b>Sr. no.</b>	<b>Class of animals</b>	<b>Species</b>	<b>Drug used</b>	<b>Month</b>
1.	Carnivores	Hyaena	Fenbendazole	May, September, January
2.	Omnivores	Monkeys	Ivermectin	May, September, October, January
3.	Herbivores	Elephants	Ivermectin	May, September, October, January
		Hippopotamus	Fenbendazole	
		Deer	Fenbendazole	
		Antelope	Fenbendazole	
		Nilgai	Fenbendazole	
		Wild Boar	Fenbendazole	
4.	Birds	Pheasant	Ivermectin/ Fenbendazole	May, September,

		Parakeet Macaw Cockatoo Cockateil Budgerigar Parrot Emu Crane Stork Heron Pelican <i>etc.</i>	Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole Ivermectin/ Fenbendazole	October, January
5.	Reptiles	Crocodile Snake Turtle	Fenbendazole Fenbendazole Fenbendazole	May, September, January

### **16. Disinfection Schedule**

Disinfectants in the form of sprays, solutions, powders eg. Potassium permanganate, Dettol, Aseptic, Kohrsoline, Bleaching powder are used to maintain hygiene in and around animal enclosures.

<b>Sr. No.</b>	<b>Class of animals</b>	<b>Species</b>	<b>Type of enclosure</b>	<b>Disinfectant used and method</b>	<b>Frequency of disinfection</b>
1.	Carnivores	Hyaena	Feed House	KMno4, Kohrsoline, Virkon	Daily with water and once a week with disinfectant
2.	Omnivores	Monkeys	Feed House	KMno4, Kohrsoline, Virkon	Daily with water and once a week with disinfectant
3.	Herbivores	Elephants Hippopotamus	Feed House and water body	KMno4, Kohrsoline, Virkon	Water body cleaned once a week.

		Deer Antelope Nilgai Wild Boar			
4.	Birds	Pheasant Parakeet Macaw Cockatoo Cockateil Budgerigar Parrot Emu Crane Stork Heron Pelican <i>etc.</i>	Enclosure and water body	KMno4, Kohrsoline, Virkon	Water body cleaned once a week.

### **17. Health check -up of employees for zoonotic diseases**

Animal keepers in batches of 2-3 keepers are sent each year for annual T.B. Testing at Balaji Hospital, Byculla.

Sl. no.	Name	Designation	Date of Health check-up	Findings of Health Check up
1.	Arun Laxman Bhagane	Animal Keeper	26.07.2017	Negative
2.	Amol Rajendra Shinde	Animal Keeper	01.08.2017	Negative
3.	Sachin Sudhakar Satam	Animal Keeper	01.08.2017	Negative
4.	Naushad Ali Salamat Ali	Animal Keeper	01.08.2017	Negative
5.	Balu Sopan Waghmare	Animal Keeper	01.08.2017	Negative
6.	Ravindra Gangaram Nivate	Animal Keeper	05.08.2017	Negative



7	Albert Solomon Kuruvalli	Animal Keeper	05.08.2017	Negative
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## 18. Developmental Works carried out in the zoo during the year

This Udyan & Zoo is under complete revamping and the development works are being undertaken phase wise. Under Phase I the following works are completed.

- Humboldt penguin indoor exhibit facility – The only penguin exhibit in India, an indoor exhibit including water pool, rock work, quarantine area, holding area, kitchen, etc. The exhibit has This facility is ready & functional as per international standards and is being visited by a large number of visitors being an exclusive facility in the country.
- Entry Plaza – The facility comprises of Ticket Room, Souvenir shop, Cloak room with an electronic ticketing scanner and turnstile gate allowing one person to pass at a time
- Internal pocket gardens - Rose Garden, Japanese Garden, small pocket gardens have been developed and the greenery inside the garden is enhanced.
- Internal road network – beautification of internal pathways & roads
- Installation of CCTV system – The entire premises of this Udyan & Zoo is being covered with approx. 150 CCTV cameras to strengthen the security surveillance
- Public amenities – Toilets (3 nos.), Rain shelters (1 no), Pyau – Filtered and cold water filters (8 nos.), Child Care Centres (1 no.), etc.
- Many other public amenities like directional & information boards, tree name boards are also installed.
- Various selfie points (7 nos.) are erected for the visitors – Giant panda, Chimpanzee, Goofie, Mickey mouse, Doraemon, etc. A selfie point with a waterfall featuring Crocodile & other birds is made attractive for visitors.
- To maintain the overall cleanliness and hygiene inside the zoo premises, a full-fledged house keeping agency is appointed.
- Under the second phase of the revamping project, 17 animal enclosures will be constructed. The construction works have already started and accordingly various animals including Lion, Tiger, Leopard, Otter, Swamp deer, Sloth bear, Giraffe, Zebra, etc. will be displayed at this zoo.
- The overall impact of the revamping project is overwhelming which can be seen with increase in the no. Of visitors visiting this zoo. The number of visitors in the year 2016-17 was 13,80,271 and at the end of 2017-18 in all 17,22,656 visitors have visited this Udyan & Zoo.



Beautification of internal pathways & roads



Giant Panda Selfie point



*Mushroom & Cuscutila Selfie Point*

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

### **Celebration of “World Earth Day” (22<sup>nd</sup> April 2017)**

The World Earth Day was celebrated at this Udyan & Zoo on 22<sup>nd</sup> April 2017. 32 students from S.I.E.S. College, Sion, Mumbai, participated in the said programme.

Initially an introductory lecture, which included information about the modern concepts of the Zoos in India, was conducted. This was followed by the Trail inside the premises for observing different Zoo animals, Free-ranging animals, and some rare trees.

Thereafter the students interacted with the general visitors, for imparting information about the important issues such as “SAVE WATER” and “HAZARDOUS EFFECTS OF PLASTIC” with the help of the posters prepared by them.

### **Celebration of “World Environment Day” (5<sup>th</sup> June 2017)**

The World Environment Day was celebrated at Veermata Jijabai Bhosle Udyan & Zoo on 5<sup>th</sup> June 2017. This event was conducted in collaboration with the “Mumbai Vidnyaln Adhyapak Mandal”. The event was celebrated in presence of Shri Vishwanath Mahadeshwar, Hon. Mayor of Mumbai, Dr. Sanjay Tripathi, director Zoo I/C, Shri Anil Paranjpe, Education -Cum- P.R.O., V.J.B. Udyan & Zoo, all office-holders, members, trustees, advisers of Mumbai Vidnyaln Adhyapak Mandal, school students & parents.

In the beginning the Education-Cum-P.R.O., V.J.B. Udyan & Zoo welcomed the participants and briefed them about the modern concepts of zoos in India as per the National Zoo Policy, adopted by Central Zoo Authority, New Delhi. He mentioned that the main objective of zoo is not entertainment but protection and conservation of Wild fauna, especially endangered species and their re-establishment in the wild and educating the general visitors, school students, and teaches from creating empathy, interest and awareness in their minds about the wildlife, nature and environment. Further E.P.R.O. briefed about the various educational activities being conducted at this Udyan & Zoo. The introductory lecture was followed by Nature Trail inside the premises of this Udyan & Zoo. The participants were told to observe different Zoo animals/birds, free ranging animals and some rare trees. An appropriate information about the flora and fauna in the premises was given to them during the said trail.



Thereafter in a function was arranged in the Interpretation Centre at this Udyan & Zoo. The Honourable Mayor of Mumbai, Shri Vishwanath Mahadeshwar graced the occasion as a guest of honour. Other dignitaries who remained present were on Shri Shrikant Shingare, President, Mumbai Vidnyan Adhyapak Mandal, Shri Arvind Kadam, Secretary, Mumbai Vidnyan Adhyapak Mandal, Dr. Sanjay Tripathi, Director (Zoo) I/C and Shri Anil Paranjpe, Education -Cum- P.R.O., V.J.B. Udyan & Zoo and others. Shri. Kailas Chavan welcomed the guests and participants. Shri Arvind Kadam, Secretary, Mumbai Vidnyan Adhyapak Mandal, gave an oath for protection of environment to the participants. This was followed by a speech delivered by Shri Anil Paranjpe, Education -Cum- P.R.O. about the proposed educational activities at this zoo. It was decided to initiate a project based on the curriculum of the school students studying in 1<sup>st</sup> to 10<sup>th</sup> STDs with the help of science teachers of Mumbai Vidnyan Adhyapak Mandal & also the Education Department of MCGM. The yearly magazine “UTPRERAK” was published at the hands of Hon. Mayor of Mumbai. In his speech the Hon. Mayor expressed that “we should protect our mother Nature & save the Earth”. The participation certificates were distributed at the hands of the dignitaries. A tree saplings was planted in the premises of VJB Udyan & Zoo at the hands of Hon. Mayor of Mumbai.



*Hon. Mayor of Mumbai, Shri Vishwanath Mahadeshwar while addressing the participants*



*Shri. A L Paranjpe, Education cum P.R.O while delivering the lecture*



*he participants taking oath for protection of environment*



*Tree plantation at the hands of Shri Vishwanath Mahadeshwar, the Hon. Mayor of Mumbai.*

### **Celebration of “Wildlife week -2017” (1<sup>st</sup> to 7<sup>th</sup> of October)**

The Wildlife Week was celebrated by conducting various activities and programmes at V.J.B. Udyan and Zoo.

In all, three Volunteer Training Programmes were conducted for 20 College Students from S.I.E.S. College, Sion, Mumbai in order to train them for conducting various activities during Wildlife Week 2017.

On 1st October 2017 the event was inaugurated at the hands of Director (Zoo) I/C Dr. Sanjay Kumar Tripathi.

The primary school students from Sharadashram Vidya Mandir, Dadar performed a short play based on the topic related to "Animals in the Zoo". An oath for protection and conservation of environment was taken by the participants. Thereafter a presentation on "Environmental Activities" to be conducted during the wildlife week was given by Dr. Komal Powar, Veterinary Officer, V.J.B Udyan and Zoo. This was followed by the presentation on Modern Concepts of Zoo Keeping and Educational activities being conducted at V.J.B Udyan and Zoo by Shri Anil Paranjpe, Education -Cum- P.R.O., V.J.B. Udyan & Zoo.

Further zoo guided tours were conducted for the participants. An oath in Marathi, Hindi and English languages were also displayed at the main entrance gate of the V.J.B Udyan and Zoo.

The Annual Report 2016-17 and the Pamphlets on Humboldt Penguins were published at hands of Dr. Sanjay Kumar Tripathi, Director (Zoo) I/C, V.J.B Udyan and Zoo.

On 2<sup>nd</sup> October 2017, the Environmental Enrichment Activity was started at various Animal Enclosures such as Monkeys, Deer, Military Macaw and African Grey Parrot. The Veterinary College students from BVC, Parel participated in the activity under the guidance of the Veterinary Officer and Animal Keepers of the Zoo. This activity was conducted throughout the Wildlife Week.

The Volunteers from S.I.E.S College, Sion conducted Zoo guided tours in the premises of this Zoo for the general visitors this activity was continued further during the entire Wildlife Week.

A guest lecture was organized in the evening on the topic 'Leopards in Sanjay Gandhi National Park, Borivali' by Shri Nikit Surve, Research Consultant, Wildlife Conservation Society-India Program.

On 3<sup>rd</sup> October 2017, a workshop began for developing Information Signages in more attractive and pictorial form. In all 30 Students and 2 professors from the Kala Vidya Sankul, Girgaon, Mumbai, participated in the said workshop. This workshop was further conducted for the entire Wildlife Week. Thereafter Shri Issac Kehimkar Chairman & Director iNaturewatch Foundation delivered a powerpoint presentation-cum-lecture on the topic "Butterflies of India".

On 4<sup>th</sup> October 2017, a "Zoo Awareness programme" was organized and conducted by Shri Anil Paranjpe Education- cum- P.R.O, V.J.B Udyan and Zoo for the Security guards working at Veermata Jijabai Bhosale Udyan and Zoo. The said programme included an introductory lecture, Zoo guided tour and question-answer session. Dr. Sanjay Tripathi Zoo Director (I/C) and Assistant Security Officer, V.J.B Udyan and Zoo, also interacted with the participants, to make them aware about their responsibilities while working at the Zoo. In the evening session Shri Varun Satose M.Sc. Zoology, MBA delivered a lecture on "Snakes of India."

On 5<sup>th</sup> October 2017, a "Zoo Awareness Programme" by Shri A. L Paranjpe Education- cum- P.R.O, V.J.B Udyan and Zoo was conducted for the teachers from Private Primary Aided School(Hindi medium).In all 24 Teachers participated in the said programme.

A lecture on "Hyena" was delivered by Dr. Percy Awari from Bombay Veterinary College; Parel.

On 6<sup>th</sup> October 2017, Zoo Awareness Programme was conducted for another group of teachers

from Private Primary Aided School(Hindi medium).In all 24 Teachers participated in the said programme.

Shri Saurabh Sawant, Coordinator Mumbai Bird Watchers Club delivered a lecture on “Birds Of Mumbai” in the evening session.

On 7<sup>th</sup> October 2017, a painting competition was organized for Municipal School Students (30 students) from Poorva Byculla Municipal School. The students were divided into 3 groups. Each group was given a separate “topic” such as Animals at V.J.B Udyan and Zoo, “Trees inside the premises of V.J.B Udyan and Zoo” and “Historical monuments and Statues.” The competition was judged by Shri Dinesh Rikame Patil from Sangeet and Kala Academy of M.C.G.M

A lecture on “Wildlife Conservation” was delivered by Shri Bibhas Aamonkar.

The Wildlife week was concluded with the Prize and Certificate distribution ceremony.



*Introductory lecture by Shri. A.L Paranjpe, Education cum P.R.O, V.J.B Udyan & Zoo.*



*Dr. Komal Raul, Veterinary Officer, V.J. B Udyan & Zoo and volunteers while performing the environment enrichment activity*

### **Animal welfare Fortnightly Programmes**

In all six Animal welfare Fortnightly Programmes were organised for the Municipal School Students in E-Ward during the second fortnight of January 2018. The programmes such as introductory lecture, Penguin exhibit visit, Zoo guided tour and question-answer sessions were conducted for the participants

#### **Wildlife Day (3<sup>rd</sup> March 2018)**

The Wildlife Day was celebrated on 3<sup>rd</sup> March 2018. A lecture and presentation on “Big Cats” was delivered by Shri A. L Paranjpe Education- cum- P.R.O, V.J.B Udyan and Zoo to the Municipal School Students and also for children from Gadchiroli district.

#### **World Sparrow Day (20<sup>th</sup> March 2018)**

A programme for Mumbai D.T. Aide College Students (30 Students) and 3 accompanying professors was organised and conducted by Shri A. L Paranjpe Education- cum- P.R.O, V.J.B Udyan and Zoo to make them aware about the causes for decrease in the number of House Sparrows from the urban areas.

#### **Children's Day Programme (14<sup>th</sup> November 2017)**

A Zoo Trip was organised by Smt. Sindhu Masurkar, President, Bal Kalayan Samiti on 14<sup>th</sup> November 2017 to celebrate the Children's Day. In all 250 school children participated in the said



programme. The activities such as an Introductory lecture, Zoo guided tour were conducted for the participants.

### **Programme for Multiple Disabled Children from “SWAYAM” Organisation, Thane.**

A Zoo Visit was organized on 25<sup>th</sup> March 2018 by the SWAYAM Organisation, Thane for 20 multiple disabled children who were accompanied by their parents.

The session included educational tour and introductory lecture and sessions on facts about animals in zoo led by Shri Anil Paranjpe, Education-cum-P.R.O, V.J.B Udyan and Zoo.

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### **Zoo Awareness Programme**

An Educational Programme was conducted for school students of Swadhyay Bhavan School on 16<sup>th</sup> February 2018. In all 137 students along with 7 teachers and 2 peons participated in this activity.

The programme included an Introductory lecture, a Zoo-guided tour and question-answer sessions. The Lecture was delivered by Shri Anil Paranjpe, Education-Cum-P.R.O, V.J.B Udyan and Zoo. The aim of the activity was to make the students aware about the importance of the Zoo and its animals.

In all 18 Zoo Awareness Programs were conducted during the period under report for the Aided Primary School teachers as well as for teachers from Private schools

The “Zoo Awareness Programme (ZAP)” is a day’s programme wherein the participants are made aware about the modern concept of Zoos as per the National Zoo Policy (1998) adopted by the Central Zoo Authority. An emphasis is given to inform the participant about the role of today’s Zoos is Wildlife Conservation and Education and not merely entertainment. The ZAP contains introductory lectures; Zoo guided tours and Question-Answer sessions. The participants are awarded Participation Certificates.



*Shri. A.L Paranjpe, Education cum P.R.O, V.J.B Udyan & Zoo delivering an Introductory lecture to the Municipal school teacher group, in presence of Shri. Sanjay Thakre, Member Secretary, M.S Zoo Authority, Nagpur and Dr. Sanjay Tripathi, Director (Zoo) I/C, V.J.B Udyan & Zoo.*



*Shri. A.L Paranjpe, Education cum P.R.O, V.J.B Udyan & Zoo while conducting guided tour for the Municipal school teacher group, in presence of Shri. Sanjay Thakre, Member Secretary, M.S Zoo Authority, Nagpur and Dr. Sanjay Tripathi, Director (Zoo) I/C, V.J.B Udyan & Zoo.*

### **Programmes for celebration of Birth Anniversary of ShivSena Supremo Late Shri Balasaheb Thackeray organised by Municipal Councillor (ShivSena) at VJB Udyan & Zoo**

In all four trips were organised by Municipal Councillor ShivSena for celebration of Birth Anniversary of Shiv Sena Supremo Late Shri Balasaheb Thackeray at V.J.B. Udyan and Zoo for the school students. Various educational activities such as an Introductory lectures, Zoo guided tours question-answer sessions were conducted for these school Students and accompanying teachers and volunteers by Shri Anil Paranjpe Education- cum- P.R.O, V.J.B Udyan and Zoo.

1. In the programme organised by Smt. Kishori Pednekar on 19<sup>th</sup> November 2017 around 600 school children along with their volunteers had participated. The participants were given an introductory lecture and the guided tours were conducted with the help of the volunteers.

2. Smt. Urmila Ulhas Panchal, Municipal Councillor (Zone no. 200), organised a Zoo visits for the Schools students of Dr. D.V. Kulkarni Primary School, Naigaon, Dadar and NavBharat Vidyalay, Parel. A Zoo Awareness Program was conducted on 21<sup>st</sup> January 2018 at VJB Udyan & Zoo so as to train the teachers. Then on 22<sup>nd</sup> January 2018, The session was conducted for the school students from both the above mentioned schools. The programme included an Introductory lecture, Zoo Guided Tour and Question Answers sessions by Shri A. L Paranjpe Education- cum- P.R.O, V.J.B Udyan and Zoo.

3. Shri Sachin Devdas Padwal, Shivsena Councillor, (Zone No. 206), organised a Zoo trip on 24<sup>th</sup> January 2018 for the students of Sewri B.D.D Urdu School, Sewri Koliwada School, Zakeria Bundar Urdu School. The programme included a Zoo-guided tour for educational purpose.

4. Shri Datta Rambhau Pongde, Municipal Councillor, (Zone No. 205) organised a Zoo trip on 3<sup>rd</sup> February 2018 for the students of Abhyudayanagar Brihanmumbai Municipal School.

The programme included an educational tour in the Zoo premises.

### **Story Express Festival**

In all 50 students along with their teachers participated in the Story Express Festival conducted by Akshara Children's Library and Aseema Charitable Trust on 20<sup>th</sup> February 2018. It was an exclusive event for the students of 8-14 years age group organised by The Story Express NGO. The session started with an introductory lecture by Shri Anil Paranjpe, Education -cum- P.R.O, V.J.B Udyan and Zoo. It was followed by story telling session conducted by Smt. Indira of the said organisation. These session were held near the respective animal enclosure at this zoo. The event was concluded with an interactive question-answer session.

### **Programme for Multiple Disabled Children from "SWAYAM" Organisation, Thane.**

A Zoo Visit was organized on 25<sup>th</sup> March 2018 by the SWAYAM Organisation, Thane for 20 multiple disabled children who were accompanied by their parents.

The session included educational tour and introductory lecture and sessions on facts about animals in zoo led by Shri Anil Paranjpe, Education-cum-P.R.O, V.J.B Udyan and Zoo.

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the activity was to make the students aware about the importance of the Zoo and its animals.

In all 18 Zoo Awareness Programs were conducted during the period under report for the Aided Primary School teachers as well as for teachers from Private schools

The “Zoo Awareness Programme (ZAP)” is a day’s programme wherein the participants are made aware about the modern concept of Zoos as per the National Zoo Policy (1998) adopted by the Central Zoo Authority. An emphasis is given to inform the participant about the role of today’s Zoos is Wildlife Conservation and Education and not merely entertainment. The ZAP contains introductory lectures; Zoo guided tours and Question-Answer sessions. The participants are awarded Participation Certificates.

## **20. Important events and happenings:-**

### **Death Anniversary of Veermata Jijabai Bhosale (as per date)**

The Death Anniversary of Veermata Jijabai Bhosale, as per date was observed on Friday, the 17<sup>th</sup> June 2017. Dr. Sanjay Tripathi, Director (Zoo) I/c paid homage to Jijamata by offering garlands to the statue of Veermata Jijabai Bhosale and Bal Shivaji at V.J.B.Udyan & Zoo other officials from V.J.B.Udyan & Zoo remained present at the occasion.

### **Death Anniversary of Veermata Jijabai Bhosale (as per the Solar Calender)**

The 343<sup>rd</sup> Death Anniversary of Veermata Jijabai Bhosale, as per the Solar Calender was observed on Friday, the 18<sup>th</sup> June 2017.

The Hon. Mayor of Mumbai, Shri. Vishwanath Mahadeshwar, Shri. Ramakant Rahate, Local Corporator and Shri. Sudhir Naik, Dy. Commissioner (General Administration), paid homage to Jijamata by offering garlands to the statue of Veermata Jijabai Bhosale and Bal Shivaji at V.J.B.Udyan & Zoo. The Director (Zoo) I/c & other officials remained present at the occasion.

### **Celebration of Birth Anniversary of Veermata Jijabai Bhosale at V.J.B. Udyan & Zoo (12<sup>th</sup> January 2018)**

The Birth Anniversary of Veermata Jijabai Bhosale was celebrated by offering garlands to the statues of Veermata Jijabai Bhosale & Balshivaji at the hands of Shri. Vishwanath Mahadeshwar, Hon. Mayor of Mumbai on 12<sup>th</sup> January 2018 at Veermata Jijabai Bhosale Udyan-Zoo, Smt. Sanvi Tandel, Market and Garden Committee, Shri. Ramakant Rahate, Local Corporator, Shri. Sudhir Naik, Dy. Commissioner (General Administration), Dr. Sanjay Tripathi, Director (Zoo)I/c & other officials remained present to grace the occasion.

Veermata Jijabai Bhosale Udyan & Zoo was selected as the host zoo for conducting



the Interactive session on Zoological Information Management System (ZIMS) & software data entry training from 12<sup>th</sup> to 13<sup>th</sup> March 2018. The training was organized for five zoos and the respective Officials were appointed for the said training which are as listed below:

**ZIMS Trainings conducted in V J B Udyan & Zoo**

Sr.No.	Name of Zoo	Place	Name of person deputed	Designation
1.	Kamla Nehru Prani Sangrahalay	Indore	Dr. Nehar Parulekar	Veterinary Officer
2.	Aurangabad Municipal Zoo	Aurangabad	Mr. Rohit Deshmane	Computer Operator
3.	Van Vihar National Park Zoo	Bhopal	Dr. Atul Shrivastav	Veterinary Officer
4.	Rajiv Gandhi Zoological Park	Pune	Dr. Nighot	Veterinary Officer
5.	Veermata Jijabai Bhosale Udyan & Zoo	Mumbai	Dr. Komal Raul	Veterinary Officer
6.	ZIMS- Species 360		Mr. Moin	Trainer

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

**Summer:**

1.) **Feed enrichment:** Whole fruits like watermelon and seasonal fruits, whole tender coconuts, ice lollies and ice fruit cakes made out of cut seasonal fruits and sweetened water with jaggery syrup are offered to monkeys and elephants. Whole watermelons and pumpkins are also provided to the hippopotamus.

2.) **Enclosure enrichment:**

Wet mud patches in the enclosures are provided for the deer to cool off in the Summer.

Small water pools are provided for the monkeys in the enclosures.

Roofs of the bird enclosures are covered with palm leaves.

**Monsoon:**

- Animal enclosure roofs are covered with Tarpaulin sheets.
- Dry hay is provided in all animal houses and sheds of deer enclosures to keep the deer dry and warm during the rains. Similarly, jute gunny bags are provided to monkeys and hyaenas.

**Winter:**

Dry hay is provided in all deer animal houses and sheds to keep the deer warm during Winter. Similarly, jute gunny bags are provided to monkeys and hyaenas.



*Feed Enrichment done during Summer season*



*Enclosure enrichment in Aviary*

### **Humboldt Penguin Enrichment at V.J.B. Udyan & Zoo**

Penguins are pelagic birds and have an aquatic lifestyle. In wild, most of the time is spent in water foraging for aquatic prey. Enrichment plays an important role in the physical and mental well being of captive animals. Enrichment helps in enhancing the bird's natural behaviour. A few uses of enrichment, which we observed for the penguins at V.J.B. Udyan & Zoo, are as follows:

It enables them to spend maximum time in water. This reduces the occurrence of stereotypic behavior, foot and feather issues in these birds. Enrichment plays key role in utilization of the enclosure. Humboldt penguins are shy and generally require time to adapt to a new enclosure. On shifting of the penguins from quarantine to the exhibit area, the same enrichment program as in the quarantine, was followed. Initially, the birds would understandably be reluctant to explore certain corners of the exhibit, as well as their nesting areas. Use of a variety of enrichment activities enabled us to not only make the birds comfortable with the keeper and doctor staff, but also with their new surroundings.



**Enrichment Strategies:**

A daily protocol for enrichment of Humboldt penguins at V.J.B. Udyan & Zoo is followed, as listed in the table 1. Use of more than one type of enrichment method is carried out. Maximum amount of time is spent with these birds during the enrichment activities. This not only helps in understanding their normal behaviour, but also helps in observing any health abnormalities, if present.

**Table 1: Schedule of enrichment activities and their uses.**

<b>Sr. no.</b>	<b>Type of enrichment</b>	<b>Observations</b>
1	Use of mirror reflection	Penguins seem to get attracted to bright lights and hence this type of enrichment is used when the birds need to get used to newly added objects into the exhibit. E.g.: Nest boxes, Crates, weight check.
2	Use of Laser Pointer	The Pointer is a green coloured light. Its purpose is same as that of the mirror reflection, however it can be utilised in the absence of sunlight.
3	Use of soap bubbles	It allows birds to spend Maximum time in and out of water. The birds like to chase the bubbles, and this increases their active time.
4	Fish ice cakes	This type of feed enrichment helps the birds in bringing out their natural foraging behaviour. The birds have to wait till the ice melts and the quantity of fish that is consumed daily is given in this Ice-cake form.
5	Use of slides, rings and balls	Rings: These are used as tools. Penguins use their body in such a way that the ring passes down their body. Slides: The birds maintain body balance and slide through. Ball: Since these are floating in water, they hold their breath, take it to water depths and then come back to the surface. These give them better practice for breath holding.

After use of the above variety of enrichment, it was observed that the use of laser pointer was the most attractive enrichment for penguins. Hence this tool was used to get the penguins to the corners that they wouldn't otherwise explore. Similar Pattern was followed for days, after which the birds eventually started exploring every corner of the exhibit.

Humboldt penguin enrichment has been effective in meeting the basic goals of animal welfare i.e. to maintain the animal in good physical as well as mental health.



*Enrichment activities for Humboldt Penguins*

**22. Research work carried out and publications-** None

**23. Conservation breeding Programme of the zoo-** None

**24. Animal Acquisition / transferred / exchange during the year-** None

**25. Rescue and Rehabilitation of wild animals carried out by the zoo-** None

## 26. Annual Inventory of animals

Sr. no	Species	Scientific Name					Birth				Acquired				Disposal				Death			
			A																			
<b>A</b>	<b>Mammals</b>																					
1	Black Buck	cervicapra	0	2	0	2	-	-	-	-	-	-	-	-	-	-	-	0	2	0	2	
2	Cat	leopardus pardus	0	1	0	1	-	-	-	-	-	-	-	-	-	-	1	-	0	0	0	
3	Elephant Indian	Elephas maximus	0	2	0	2	-	-	-	-	-	-	-	-	-	-	-	0	2	0	2	
4	Macaque Bonnet	Macaca radiata	1	0	0	1	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1	
5	Macaque Rhesus	Macaca mulatta	5	6	3	14	2		1*	-	-	-	-	-	-	-	2	-	8	4	3	15

1	Hornbill Indian Pied	Anthracoceros malabaricus	0	1	0	1	-	-	-	-	-	-	-	-	-	-	-	0	1	0	1
2	Hill Myna	Gracula religiosa	0	1	0	1	-	-	-	-	-	-	-	-	-	-	-	0	1	0	1
3	Pheasant Bhutan Grey	Polyplectron thibetanus	1	0	0	1	-	-	-	-	-	-	-	-	1	-	-	0	0	0	0

1	Cobra Indian	Naja naja	1	0	1	2	-	-	-	-	-	-	-	-	-	-	-	1	0	1	2
2	Crocodile Long Snouted	Gavialis gangeticus	2	0	0	2	-	-	-	-	-	-	-	-	-	-	-	2	0	0	2
3	Crocodile Marsh (Mugger)	Crocodylus palustris	1	4	2	7	-	-	-	-	-	-	-	-	1	-	-	0	4	2	6
4	Python Indian Rock	Python molurus	0	1	4	5	-	-	-	-	-	-	-	-	1	-	-	0	0	4	4
5	Rat Snake	Ptyas mucosus	0	0	2	2	-	-	-	-	-	-	-	-	-	-	-	0	0	2	2
6	Turtle Indian Black	Melanochelys trijuga	0	0	13	13	-	-	-	-	-	-	-	-	-	-	-	0	0	13	13
<b>Total of C</b>			<b>4</b>	<b>5</b>	<b>22</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>22</b>	<b>29</b>
<b>Total of A+B+C</b>			<b>11</b>	<b>18</b>	<b>25</b>	<b>54</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>14</b>	<b>25</b>	<b>51</b>

Sr. no	Endangered Species	Scientific Name					Birth			Acquired			Disposal			Death						
			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	T			
1	Crane Demoiselle	<i>Anthropoides virgo</i>	2	0	0	2	-	-	-	-	-	-	-	-	-	1		1	0	0	1	
2	Crane Sarus	<i>Grus antigone</i>	1	0	0	1	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1	
3	Goose Grey Leg	<i>Anser anser</i>	1	0	0	1	-	-	-	-	-	-	-	-	-	1		0	0	0	0	
4	Heron Night	<i>Nycticorax nycticorax</i>	2	2	29	33		21										2	2	50	54	
5	Ibis White	<i>Threskiornis melanocephala</i>	0	1	0	1	-	-	-	-	-	-	-	-	-			0	1	0	1	
6	Parakeet Alexandrine	<i>Psittacula eupatria</i>	12	4	0	16	-	-	-	-	-	-	-	-	1		12	3	0	15		
7	Parakeet Blossom Headed	<i>Psittacula cyanocephala</i>	0	1	0	1	-	-	-	-	-	-	-	-	-	1	-	0	1	0	1	
8	Parakeet Red Breasted	<i>Psittacula alexandri</i>	5	0	0	5	-	-	-	-	-	-	-	-	2		3	0	0	3		
9	Pelican Rosy / White	<i>Pelecanus onocrotalus</i>	1	1	0	2	-	-	-	-	-	-	-	-			1	1	0	2		
10	Stork Adjutant	<i>Leptoptilos dubius</i>	0	2	2*	4	-	-	1	-	-	-	-	-			1	2	2	5		
11	Stork Painted	<i>Mycteria leucocephala</i>	4	10	12	26	-	-	2	-	-	-	-	-	-	1	3	9	14	26		
12	Stork White Necked	<i>Ciconia episcopus</i>	1	0	0	1	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1	
13	Teal Common	<i>Anas crecca</i>	1	0	0	1	-	-	-	-	-	-	-	-	1	-	-	0	0	0	0	
14	<b>Total of D</b>		<b>30</b>	<b>21</b>	<b>43</b>	<b>94</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>25</b>	<b>19</b>	<b>66</b>	<b>110</b>

(\* Stork adjutant 1 U identified as 1 male)

Mammals		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
E	Barking Deer	8	10	8*	26			3*	-	-	-	8	4	-	8	8	1	17			
1	Sambar Deer	1	10	1*	12	1	1		-	-	-	1	1	-	2	10	0	12			
2	Spotted Deer	2	31	11	44			7	-	-	-	6	4	-	7	27	7	41			
3	Hyaena Striped	2	0	0	2	-	-	-	-	-	-	-	-	-	2	0	0	2			
4	Nilgai / Blue Bull	1	1	0	0	-	-	-	-	-	-			1	-	1	0	0	1		
5	Wild Boar	1	1	0	2	-	-	-	-	-	-				1	1	0	2			
6	<b>Total of E</b>	<b>15</b>	<b>53</b>	<b>20</b>	<b>88</b>	<b>1</b>	<b>1</b>	<b>10*</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>10</b>	<b>0</b>	<b>21</b>	<b>46</b>	<b>8</b>	<b>75</b>			

<b>Total of D + E</b>		<b>45</b>	<b>64</b>	<b>63</b>	<b>182</b>	<b>1</b>	<b>1</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>12</b>	<b>0</b>	<b>46</b>	<b>65</b>	<b>74</b>	<b>185</b>
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Species (III & IV)	Scientific Name					Birth			Acquired			Disposal			Death							
		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T	
Birds																						
Budgerigar	Melopsittacus undulates	24	30	5	59	-	-	-	-	-	-	-	-	-	5	4	1	19	26	4	49	
Cockatiel grey	Nymphicus hollandicus	4	3	11	18	-	-	-	-	-	-	-	-	-	-	-	-	4	3	11	18	
Cockatiel White		3	2	5	10	-	-	-	-	-	-	-	-	-	-	-	-	3	2	5	10	
Cockatoo White	Cacatua alba	1	0	1	2	-	-	-	-	-	-	-	-	-	-	-	-	1	0	1	2	
Crane Crowned	Balearica pavonina	1	0	0	1	-	-	-	-	-	-	-	-	-	1	-	-	0	0	0	0	
Crane Crowned Red	Grus japonicus	3	2	0	5	-	-	-	-	-	-	-	-	-	-	-	-	3	2	0	5	
Emu	Dromaius novaehollandiae	1	2	1	4	-	-	-	-	-	-	-	-	-	-	-	-	1	2	1	4	
Finches / Munias	Chloebia sps	0	0	13	13	-	-	-	-	-	-	-	-	-	-	-	-	13	0	0	0	
Love Fisher Bird	Agapornis fischeri	1	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1	
Macaw Military	Ara militaris	4	4	5*	13	-	-	-	-	-	-	-	-	-	-	-	-	5	4	4	13	
Parrot African Grey	Psittacus erithacus	5	9	0	14	-	-	-	-	-	-	-	-	-	-	-	-	5	9	0	14	
Humboldt Penguin	Spheniscus humboldti	3	4	0	7													3	4	0	7	
Pheasant Golden	Chrysolophus pictus	1	0	0	1	-	-	-	-	-	-	-	-	-	-	-	-	1	0	0	1	
		51	56	41	148										6	4	14	46	52	26	124	
(13 finches identified as 4 males and 9 females on PM)																						
(1 unknown military macaw identified as male)																						
<b>Mammals</b>		<b>M</b>	<b>F</b>	<b>U</b>	<b>T</b>	<b>M</b>	<b>F</b>	<b>U</b>	<b>M</b>	<b>F</b>	<b>U</b>	<b>M</b>	<b>F</b>	<b>U</b>	<b>M</b>	<b>F</b>	<b>U</b>	<b>M</b>	<b>F</b>	<b>U</b>	<b>T</b>	
Hippopotamus	Hippopotamus amphibius	1	2	1	0	-			-	-	-	-	-	-	-			1	1	2	0	3



## 27. Mortality of Animal

Annual Death report of Endangered and other Sp. of Mammals/ Birds/ Reptiles at V. J. B. Udyan Zoo  
for the year 2017-2018 of from 01-04-2017 to 31-03-2018

Sr. No.	Name of Species	Scientific name	Date of Death	No. & Sex	Cause of Death
1	Civet Common Cat	Paradoxict	06/04/17	1 F	Old age
2	Barking Deer	Muntiacus Muntjack	15/04/17	1 M	Respiratory failure
3	Finches / Munias	Chloebia sps	16/04/2017	2 M	Hepatic failure
4	Finches / Munias	Chloebia sps	22/04/2017	1M, 1F	shock, old age
5	Finches / Munias	Chloebia sps	05/05/2017	1M, 1F	shock, old age
6	Budgerigar	Melopsittacus undulates	20/05/17	1M, 1F	old age
7	Barking Deer	Muntiacus Muntjack	21/05/17	1 F	Cardiac Shock
8	Pheasant Bhutan Grey	Polyplectron thibetanus	07/06/2017	1M	Respiratory failure
9	Finches / Munias	Chloebia sps	25/06/2017	2 F	shock, old age
10	Spotted Deer	Axis axis	28/06/17	1 F	shock, septicemia
11	Parakeet Red Breasted	Psittacula alexandri	30/06/17	1 M	Cardiac Shock, old age
12	Crane Demoiselle	Anthropoides virgo	01/07/2017	1 M	Multiple organ failure, Old age
13	Teal Common	Anas crecca	05/07/2017	1 M	Multiple organ failure, Old age
14	Goose Grey Leg	Anser anser	07/07/17	1 M	Multiple organ failure, Old age
15	Parakeet Red Breasted	Psittacula alexandri	09/07/17	1 M	Cardiac shock, old age
16	Barking Deer	Muntiacus Muntjack	10/07/17	1 F	Septicemia
17	Sambar Deer	Cervus unicolor	16/07/17	1 M	Septicemia
18	Sambar Deer	Cervus unicolor	21/07/17	1 F	Cardiac shock, old age
19	Barking Deer	Muntiacus Muntjack	09/08/17	1M	Shock; respiratory failure
20	Budgerigar	Melopsittacus undulates	16/08/2017	1 M	Multiple organ failure, Old age
21	Spotted Deer	Axis axis	31/08/2017	1 F	Haemorrhagic shock
22	Spotted Deer	Axis axis	08/09/2017	1 M	Hind limb paralysis; respiratory failure
23	Spotted Deer	Axis axis	11/09/17	1 M	Cardiac shock; Respiratory infection
24	Budgerigar	Melopsittacus undulates	15/09/17	1 M	Putrified, no PM done
25	Budgerigar	Melopsittacus undulates	16/09/17	1 F	hepatic failure
26	Macaque Rhesus	Macaca mulatta	16/09/17	1 F	Tetanus
27	Budgerigar	Melopsittacus undulates	21/09/17	1 M	hepatic failure
28	Budgerigar	Melopsittacus undulates	21/09/17	1 F	Cardiac shock; Respiratory infection
29	Spotted Deer	Axis axis	22/09/17	1 M	respiratory failure
30	Barking Deer	Muntiacus Muntjack	22/09/17	1 M	hepatic failure
31	Barking Deer	Muntiacus Muntjack	24/09/17	1 M	Asphyxia, Respiratory failure
32	Barking Deer	Muntiacus Muntjack	25/09/17	1 M	Haemorrhagic shock
33	Spotted Deer	Axis axis	29/09/17	1 F	Growth on hind limb; anaemia
34	Barking Deer	Muntiacus Muntjack	09/10/2017	1 M	Cardiac shock
35	Crane Crowned	Balearica pavonina	12/10/17	1 M	h/o fracture of humerus
36	Hippopotamus	Hippopotamus amphibius	18/10/17	1F	Tetanus
37	Barking Deer	Muntiacus Muntjack	20/10/17	1 F	Cardiac shock
38	Barking Deer	Muntiacus Muntjack	23/10/17	1 M	respiratory failure
39	Budgerigar	Melopsittacus undulates	26/10/17	1 M	Cardiac shock
40	Finches / Munias	Chloebia sps	09.11.2017	1M	septicemia, old age
41	Finches / Munias	Chloebia sps	14.11.2017	1F	septicemia, old age
42	Spotted Deer	Axis axis	25.11.2017	1 M	septicemia
43	Finches / Munias	Chloebia sps	10.12.2017	1 F	septicemia, old age
44	Finches / Munias	Chloebia sps	17.12.2017	1M	septicemia, old age
45	Nilgai	Axis axis	22.12.2017	1 F	Respiratory failure
46	Budgerigar	Melopsittacus undulates	22.12.2017	1M	Inflight injury
47	Spotted Deer	Axis axis	28.12.2017	1M	Respiratory failure
48	Parakeet Alexandrine	Psittacula eupatria	11.01.2018	1 M	Inflight injury
49	Stork Painted	Mycteria leucocephala	15.01.2018	1 F	cardiac shock
50	Barking Deer	Muntiacus Muntjack	20.01.2018	1 M	cardiac shock, respiratory failure
51	Budgerigar	Melopsittacus undulates	24.01.2018	1M	Inflight injury, beak fracture
52	Spotted Deer	Axis axis	27.01.2018	1M	Septicemia
53	Barking Deer	Muntiacus Muntjack	23.02.2018	1F	septicemia
54	Macaque Rhesus	Macaca mulatta	26.02.2018	1 F	septicemia
55	Finches / Munias	Chloebia sps	27.02.2018	1F	old age, shock
56	Spotted Deer	Axis axis	03.03.2018	1F	septicemia and cardiac shock
57		Crocodylus palustris	04.03.2018	1 M	pneumonia
58		Psittacula cyanocephala	10.03.2018	1F	Egg binding
59	Python Indian Rock	Python molurus	17.03.2018	1F	septicemia



**28. Status of the Compliance with conditions stipulated by the Central Zoo Authority**

Sr. No.	Norm No.	Details on stipulated by the Central Zoo Authority, New Delhi, MoEF	Status with regard Compliance of the conditions as submitted by the Officer-in-charge of the Zoo
<b>(A) Directions of CZA as per Zoo Recognition Letter dated 22-09-2016</b>			
<b>.General Requirement</b>			
1	1.5(b)	The remaining portion of the boundary wall needs to be completed with consensus from all the stake holders. The miscreants are taking advantage of the situation.	The South and West bound area of the zoo is surrounded by 2.5 Mtr wall as mandated by CZA. East & North bound area of the zoo is surrounded by heritage fence. The Mumbai Heritage Conservation Committee (MHCC) while issuing their NOC has ascertained to retain the heritage fence being a Heritage Grade II-B premise and permitted to carry out the restoration work of the said heritage fence.  The repairs to the main Heritage fence wall around the zoo is completed in the month of May 2017. However to prevent entry of any miscreant through the fenced wall, the administration has already initiated necessary procedures to put up barbed wire mesh over the heritage fence.
2	1.5	The office of the Garden Superintendent should be shifted from the zoo premises immediately.	The offices of Director (Zoo) and Supdt. of Garden have been shifted on the second floor in the new Interpretation Centre building. Both the offices are functional since February 2018.
3	1.9	Stray dogs captured by Municipal Corporation in Byculla area should not be released in close proximity of the zoo and it should be stopped immediately.	The instructions are conveyed to the dog squad of the municipal corporation and accordingly required action is being taken by the Dog squad of MCGM time to time.
<b>.Administrative and Staffing Pattern</b>			
4	2.1	The whole time in charge of the zoo should be vested with adequate administrative and financial powers to take decisions and he should be provided financial resources and infrastructural support for proper housing, upkeep and healthcare of the zoo animals and managing the zoo in planned manner.	The Director (Zoo) has requested to enhance administrative and financial powers in the interest of zoo management. The said request is under consideration.

5	2.1	The control of security personnel of the zoo should be under the direct control of the Zoo Director.	At present, Chief Security Officer, MCGM manages the overall security arrangements inside VJB Udyan & Zoo.  However, this dept had requested the MCGM administration to handover the control of security arrangement under the control of Director (Zoo) upon which the Additional Commissioner having the portfolio of Security dept has ordered that the Asst. Security Officer for the Zoo will report directly to
6	2.1	The vacant posts especially animal keepers and other supporting staff should be filled up.	Complied.
7	2.2	The post of Curator and Biologists should be filled.	The posts of Curator (Zoo) and Biologist are already approved by Post Creation Committee dated 08-05-2017 (Copy enclosed).  Initially, both the posts were advertised to be filled through the employees of MCGM but no suitable candidate was available. Thus the both the posts are now being advertised to be filled through general selection procedure.  However the administration has already appointed two veterinary officers on contract basis to look after the health care and management issues since March 2017 (Copies enclosed).  Further to strength the administrative wing, the posts of Administrative Officer (1) and additional 2 clerical posts are added to the Zoo establishment since June 2017 (Copies enclosed).
<b>.Development and Planning</b>			
8	3.1	The Master Plan should be submitted for approval of CZA.	The Master (Layout) Plan has been approved by the Technical Committee of the CZA on 05.12.2012.  The advance copy of Master Plan document (20 years) along with the Management Plan (5 years) has been already submitted by Director (Zoo) to CZA on 13 <sup>th</sup> April 2017.

9	3.3	<p>The Pucca buildings including the visitors facilities should be masked by planting trees and bushes to give more naturalistic look in the existing green environment of the zoo. The colours of the buildings and structures also should be chosen in such a manner that they are not very much conspicuous</p>	<p>As per the approved Master (Layout) Plan under phase I, Entry Plaza, Internal pocket gardens, Humboldt penguin exhibit and public amenities have been developed.</p> <p>At the Entry plaza the new ticketing complex has been built submerging with the heritage precinct and various heritage structures like Triple Arch and Clock Tower.</p> <p>The various structures like Drinking water fountains, toilets along with internal pocket gardens are giving naturalistic look in the existing green environment of the Zoo. (Relevant photographs are enclosed for ready reference please).</p>
<b>.Animal Housing Display of Animals</b>			
10	4.5	<p>The construction of animal enclosures as per approved Master Plan should be expedited.</p>	<p>The construction of 7 animal enclosures- Tiger, Asiatic Lion, Swamp deer, Aquatic bird aviary, Black buck, Sambar &amp; barking deer and Nilgai &amp; Four horned antelope has already started as per the approved enclosure designs.</p> <p>The tender for construction of another 10 animal enclosures has already been finalised and the work will start very soon.</p>
11	4.6	<p>The enrichment of the animal enclosures should be carried out continuously and on priority basis.</p>	<p>Various Bird enclosures are provided with sufficient required environmental enrichment like food enrichment, nesting material, furniture for roosting &amp; perching etc. The results are found encouraging on overall health condition of the birds.</p> <p>Further the various environmental enrichment activities have been carried out inside the enclosures for Aquatic Bird enclosure, Sambar deer, Spotted deer, Black buck, Four-horned Antelope, Rhesus macaque etc.</p> <p>The implementation of environmental enrichment activities is continuously monitored and are being carried out regularly.</p>

12	4.10	The signage of animal enclosures should be made uniform and should be provided in all enclosures. More directional signage should be provided for benefit of the visitors. The existing signage should be displayed properly.	As directed by CZA, this zoo has already implemented the Visitor Circular Plan by providing enough direction signages / boards along the pathways facilitating the visitors movement in appropriate directions.  Zoo has already started construction of various animal enclosures during which various signages are being put up in the viewing areas, visitor pathways, etc. biological information about zoo animals and highlighting various conservation efforts, signages on do's and don't s, etc.
<b>.Upkeep and healthcare of animals</b>			
13	5.1 (c)	The food containers and water bowls should be cleaned and disinfected on daily basis.	Complied
14	5.1 (d)	The grills and floor of feeding cells, night shelters and chain link fence of outdoor enclosures should be disinfected on routine basis.	complied
15	5.1 (e)	The perches and shelves should be cleaned regularly and kept free of faeces and urine.	Complied
16	5.1 (h)	The provision of foot bath of adequate size with proper disinfectant at entry and exit points of animal house should be provided in all enclosures.	Complied
17	5.2 (3)	The storage conditions of food items should be made properly free from moisture, moulds and pests. The dry ration facility is proper but green vegetable and fruits should be stored properly.	Complied  The food preparation and storage facility has been partially upgraded to maintain utmost hygiene during preparation and distribution. A new kitchen complex has been constructed with separate food preparation facilities for herbivores & carnivores, deep freezing facility, ventilated and moisture+pest free storage facility, changing & bathing area for working staff, etc. The food preparation and distribution utensils are newly procured. The entire facility will be functional within a month.
18	5.2 (4)	The food storage facilities and working platforms for vegetables and fruits should be cleaned and disinfected on regular basis.	Complied

19	5.2 (5)	The regular inspection of food items should be done for its quality and freshness and transported hygienically in clean and disinfected containers with proper cover to the respective enclosures.	Regular inspection of food items is being done for quality and freshness.  The zoo has already procured new stainless steel containers for food distribution. Such utensils are daily cleaned and disinfected to maintain the hygienic food supply.
	5.2 (6)	The food and water samples should be randomly tested periodically for microbiological, toxicological and any other contaminants at recognized laboratory.	All the zoo animals are provided potable water supply from MCGM ; the food materials are being randomly tested by sending the samples to Public Health and Microbiology dept of Mumbai Veterinary College, Parel as well as Municipal Laboratory, MCGM.
<b>.Veterinary and Infrastructure facilities</b>			
21	6.1 (b)	The zoo should have a full-fledged veterinary unit with all basic diagnostic facilities, pharmacy, diagnostic and treatment room, comprehensive range of drugs, operation theatre and in-patient wards by using newly constructed facilities.	The newly constructed veterinary unit is now functional having pharmacy, diagnostic and treatment room, comprehensive range of drugs, operation theatre and in-patient wards.  For basic diagnostic facilities, currently this zoo is taking help of Pathology dept of Bombay Veterinary College, for carrying out examination of various biological samples.  The new zoo hospital is fully functional with necessary veterinary diagnostic equipments and material, surgical equipments, USG, X-ray, Gaseous anaesthesia, etc. (Relevant photographs are enclosed for ready reference please)
	6.2 (c)	The newly constructed holding facilities for animals requiring extensive medical care should be brought in use.	The newly constructed holding facilities for medical care are functional.
	6.2 (e)	The zoo should acquire basic hospital and monitoring equipment which it does not have at present.	Complied
	6.1 (f)	The zoo should have basic diagnostic support to enable and make rapid assessments of physiologic status of sick and injured animals.	Complied.

	6.3	The zoo should fill up the posts of veterinary support staff as per the Recognition of Zoo Rules, 2009.	The posts of veterinary support staff such as Lab Assistant has been approved by MCGM administration. The same will be filled up shortly.
<b>9. Acquisition and breeding of animals</b>			
26	9.4	The zoo should arrange to pair its large number of species having single animals.	As per the new approved Animal collection plan the zoo has already initiated procedures for exchange of animals which includes pairing of single animals.
27	9.8	The zoo should maintain the animal stud and herd book for the animals of endangered species housed in the zoo and putting appropriate identification marks for each animals within the zoo.	Complied.
28	9.9	The population of deer and antelope species in the zoo is more than its carrying capacity of the zoo. The zoo should limit the number of animals of each species within the limits set by the animal collection plan of the zoo by implementing appropriate population control measures like segregation of sexes, vasectomy, tubectomy and implantation of pellets, etc., with due consideration of the health and welfare of the animals and interest of their long term survival.	The zoo has already implemented the various population control measures like vasectomy, segregation of sexes to control population in Spotted deer, Black buck, Barking deer and Sambar deer. The same will be continued on regular basis.
29	9.10	The zoo should implement the disaster management plan and should carry out training and mock drills to prevent accidents and should have disaster management safeguard against any accident/escape of the zoo animals from the premises of the zoo and in the event of any accidental escape immediate action to retrieve the escaped animals.	Will be complied as soon as possible.

<b>10. Research activities</b>			
30		The zoo should have research plan as indicated in the Master Plan and conducted research on the prioritized species and specific areas of concern in association with other research institutions / colleges / universities.	Will be complied while implementing the new Master Plan.

<b>11. Education and outreach activities</b>			
31	11.1	The zoo must publish information brochures, leaflets, etc. for visitors and for education and awareness.	Complied
31	11.2	The zoo must publish annual report on various activities and printed copies of the reports must be submitted to CZA.	Complied

<b>12. Visitor Facilities</b>			
33	12.1	The zoo operator should provide adequate number of visitor sheds/rain shelters and drinking water points at suitable places without compromising the existing landscape and viewing of the enclosures. It should be friendly for physically challenged person.	All new public facilities provided under the new development works starting from Entry Plaza at the main entrance gate are made friendly for physically challenged visitors including the Humboldt penguin facility, public toilets, drinking water fountains, etc.  Presently under the public amenities, new toilet blocks (2 nos.), drinking water fountains (8 nos.) are ready and made functional which are suitable for physically challenged personnel.  (Relevant photographs are enclosed for ready reference please)
34	12.2	Ramps should be provided for animal viewing and sufficient wheelchairs should be provided for physically challenged visitors. The toilets and drinking waterpoints should be made physically challenged visitors friendly.	All new public facilities provided under the new development works starting from Entry Plaza at the main entrance gate are made physically challenged visitors friendly including the Humboldt penguin facility, public toilets, drinking water fountains, etc.

**(B) Conditions as per Show Cause Notice of CZA dated 22-09-2016**

1	----	Failed to fill up vacant posts especially of animal keepers and other supporting staff	Complied.
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2	----	Failed to fill the posts of Curator and Biologist	Complied.
3	----	Failed to submit Master Plan for approval of CZA	Complied.
4	----	Failed to provide clean and hygienic food storage facilities and working platforms for vegetable and fruits.	Complied.
5	----	Failed to set up full fledged Veterinary Unit with all basic diagnostic facilities and related infrastructure.	Complied.
<b>(C) Directions as per <u>Order dated 05-05-2017</u> after hearing of Show Cause Notice on 13-04-2017</b>			
1		The Municipal Corporation of Greater Mumbai should shift the office of Superintendent of Gardens.	Complied.
2		The zoo authorities to adopt Visitor Circulation Plan as mandatory under Sub Rule 1 (3), Rule 10 of Recognition of Zoo Rules, 2009.	Complied.



3		The Municipal Corporation of Greater Mumbai to assign adequate powers to the Director of the Zoo for looking after the day to day functioning of the zoo as mandatory under Sub Rule 2 (1), Rule 10 of Recognition of Zoo Rules, 2009.	The proposal to assign adequate powers to the Director of the Zoo for looking after the day to day functioning of the zoo is under consideration at the MCGM administration level.
4		The Zoo should fill up the vacant posts of Animal Keeper.	Complied.
5		The Zoo should carry out enrichment of the bird cages as mandatory under Sub Rule 4 (6), Rule 10 of Recognition of Zoo Rules, 2009	Complied.
6		The post-mortem room as mandatory under Sub Rule 6 (3), Rule 10 of Recognition of Zoo Rules, 2009 should be constructed.	Complied.
7		The Zoo should post Lab Assistant and Stock Keeper as mandatory under Sub Rule 6 (5), Rule 10 of Recognition of Zoo Rules, 2009	The proposal for the creation of post of Lab Assistant and Stock keeper are in progress.
8		The Zoo should have basic diagnostic equipment available as mandatory under Sub Rule 6 (2), Rule 10 of Recognition of Zoo Rules, 2009	Complied.

9		The Zoo should provide facilities for physically challenged personnel as mandatory under Sub Rule 12 (3), Rule 10 of Recognition of Zoo Rules, 2009.	Complied.
10		The Star tortoise housed in hospital should be released, following the guidelines as prescribed by Central Zoo Authority	Complied.
11		The Zoo should procure restraining and tranquillizing equipments appropriate for the zoo as mandatory under Sub Rule 1 (3), Rule 10 of Recognition of Zoo Rules, 2009	Blow pipes, dart syringes and needles are already available at this zoo. However a dart gun is also being procured.
12		Bonnet macaque, Blossom headed Parakeet, Crowned crane, Grey lag goose should be paired as mandatory under Sub Rule 9 (3), Rule 10 of Recognition of Zoo Rules, 2009	Bonnet macaque male, Blossom headed Parakeet and Crowned crane are old in age and are unfit for exchange with other Zoos. Goose grey lag died on 07-07-2017 due to old age.
13		Stud book should be maintained	Complied.
14		The Zoo should stop morning and evening walks in the zoo since the security of animal is compromised	The proposal to stop evening walk is already approved by the concerned authorities of MCGM and has been implemented from 1 <sup>st</sup> August 2017 in the zoo.  The MCGM administration has not yet decided to stop the Morning walk facility; however the same is under consideration.

15		The Aquatic bird aviary which is presently not as per the CZA's norm, should be redesigned after obtaining prior approval from Central Zoo Authority.	As per new approved Master (Layout) Plan, the CZA has approved the design of Aquatic bird aviary at the same place. The construction of said aquatic bird aviary is now started.
16		The Zoo should maintain fly proof and pest free meat houses.	Complied.
17		The Zoo should house the animals in socially and behaviourally viable group as mandatory under Sub Rule 5 (1), Rule 10 of Recognition of Zoo Rules, 2009.	Presently most of the animal species displayed in the zoo are in socially viable group.  Further as per new animal collection plan, the proposed animal species will be displayed in socially and behaviourally viable group.
18		The Zoo should reduce the pucca building and bring the same within the prescribed limit of CZA.	As per the new approved Master (Layout) Plan and the approved designs of animal enclosures envisage naturalistic exhibits having very less pucca buildings submerging with the environment.
19		At least 30% of the area earmarked for the zoo should be kept under green belt and natural vegetation and the area for animal housing should not exceed 30% area of the zoo, as mandatory under Sub Rule 3 (4), Rule 10 of Recognition of Zoo Rules, 2009.	As per approved Master (Layout) Plan of this Zoo, the animal housing is around 21% and the green belt & natural vegetation covers around 41.75% of the total area of this Udyan & Zoo.
20		The construction of boundary wall all around the zoo should be completed.	Complied.

21		All herbivores and hyena has viewing area for visitors more than 30% presently. The same should be restricted to maximum 30% by way of plantation or use of any other appropriate barrier.	Complied.
22		The Zoo should maintain herd book. New blood line of animals should be brought by way of animal exchange as mandatory under Sub Rule 9 (8), Rule 10 of Recognition of Zoo Rules, 2009.	As per the new animal collection plan, the new blood line will be introduced while executing the new development plan of this zoo.
<b>(D) Directions of CZA vide letter dated 28-06-2017</b>			
1		Time frame has not been specified to provide facilities for physically challenged personnel among visitors to the zoo	Complied.
2		Time frame has not been specified regarding condition to reduce the pucca building within the limit prescribed by the Central Zoo Authority	As per the new approved Master (Layout) Plan and the approved designs of animal enclosures envisage naturalistic exhibits having very less pucca buildings submerging with the environment.
3		Present status has not been apprised by the zoo regarding the percentage of the area under green belt / natural vegetation and the area under animal housing	As per approved Master (Layout) Plan of this Zoo, the animal housing is around 21% and the green belt & natural vegetation covers around 41.75% of the total area of this Udyan & Zoo.

4		Efforts till date to fulfil the mandatory requirement have not been appraised in case of condition to complete construction of boundary wall around the zoo	Complied.
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## **29. List of free living wild animals within zoo premises**

### **Mammals:**

1. Mongoose
2. Fruit Bats
3. Three striped Palm Squirrel

### **Birds:**

1. Common House Crow
2. Jungle Crow
3. Rose-ringed Parakeet
4. Alexandrine Parakeet
5. Plum Headed Parakeet
6. Indian Grey Hornbill
7. Black Kite
8. House Sparrow
9. Common Mynah
10. Eurasian Cuckoo
11. White-throated Kingfisher
12. Purple-rumped Sunbird
13. Cattle Egret
14. Grey Heron
15. Pond Heron
16. Night Heron
17. Copper-smith Barbet
18. White-breasted Water-hen

19. Ashy Drongo
20. Golden Oriole
21. Tailor Bird
22. White-browed Fantail
23. Spotted Owlet
24. Rock Pigeon
25. Indian Cormorant
26. Crow Pheasant
27. Magpie Robin
28. Red-vented Bulbul
29. Red- whiskered Bulbul
30. Barn owl
31. Paradise Flycatcher

Reptiles:

1. Checkered Keelback
2. Common Rat Snake
3. Skinks
4. Geckos
5. Garden Lizards
6. Worm Snake
7. Wolf snake