## MADRAS CROCODILE BANK TRUST / CENTRE FOR HERPETOLOGY

Post bag No.4, Vadanemmelli Village, East Coast Road, Mamallapuram-603 104, Tamil Nadu, India

# Annual Report for the year 2019-2020





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

The year 2019-2020 was a great one for us at the Madras Crocodile Bank Trust (MCBT), although we were looking at the effects of the COVID-19 pandemic in the far end of the year. We hosted just over 4 lakh visitors who went away with a muchimproved understanding of reptiles. We had some very exciting new arrivals - 4 Monocled cobras and 4 banded kraits arrived at the zoo from Alipore Zoological Garden, Kolkata. The animals were isolated and dewormed upon arrival and are doing well. We were able to establish the sex of the blue tongued skinks that we have. The female even started laying some infertile eggs for the first time this year. We hope it will start laying fertile eggs soon. The deworming of all tortoises, lizards, and snakes have continued. We unfortunately lost one of our most charismatic animal, 'Jaws III', a salt water crocodile (*crocodylus porosus*) to pneumonia. Fortunately, we were able to replace the presence with an equally charismatic salt water crocodile, 'Thor'. The hide of Jaws III has been preserved for education purposes.

The education programs at MCBT which is a combination of a guided tour, show & tell with animals, enclosure visits, and venom extraction from the "Big Four" venomous snakes of India, is the core of our activities. We conducted over 40 such programs. We also had special programs on World days such as World Wildlife Day, World Environment Day and World Wetland Day. We conducted Air pollution themed activities off-campus and on-campus for World Environment Day 2019 as requested by the CZA. Further, our adoption program brings awareness for the reptiles and lets anyone with interest to adopt any of our on-display animals which help in maintaining the animal enclosure and their wellbeing. A total of 50 individuals and 1 enclosure was adopted from April 2019 to March 2020. MCBT was selected as one of the host organizations for the 2019-2020 William J. Clinton Fellowship for Service in India. Ms Naomi Tsai was our AIF Clinton Fellow who began her fellowship in September and worked closely with our education department on programs and creating materials. Lastly, our education officer, Steffi John, presented our work at the 7th Asian Zoo Educators Conference: AZEC 2019 Chiang Mai Thailand.

Overall, we had a busy and productive year at the MCBT. The ongoing pandemic has thrown a challenging situation at us. However, with the tremendous support that we get from institutions such as the Central Zoo Authority and from several patrons, we are confident that we won't just overcome this crisis, but thrive in it.

ALLWIN JESUDASAN

DIRECTOR

1<sup>St</sup> September 2020

#### 2. History of the Zoo

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

Responding to the need of that time, Rom and colleagues established the Madras Crocodile Bank Trust in 1976 with the specific goal of securing breeding populations of the three species of Indian crocodile: the mugger (*Crocodylus palustris*), the saltwater crocodile (*Crocodylus porosus*) and the rarest of all, the gharial (*Gavialis gangeticus*).

The Croc Bank was originally designed to be a living genetic repository of crocodiles for safekeeping, to protect and multiply until such time when they could be returned to restock their original wild habitats. This action was initially met with tremendous success, but today, release into the wild has stopped due to shrinking wilderness areas and the lack of suitable habitat.

Today Croc Bank is home to 15 species of crocodilians, three of which are listed by the IUCN as critically endangered with a further three listed as threatened.

As the need for the conservation of reptiles grew, the Croc Bank increased its repertoire to include turtles, lizards and snakes and it came to be known as the Madras Crocodile Bank Trust and Centre for Herpetology in 2003. The Croc Bank now successfully breeds several species of threatened chelonians, including two listed as critically endangered.

The Croc Bank is far more than a typical zoo and in fact our core operation is as much a field-based conservation outfit as it is a collection of captive animals for safekeeping. with two permanent field stations and several projects running concurrently.

#### 3. Vision

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

#### 4. Mission

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

#### 5. Objective

#### Main Objectives:

- Conservation breeding of endangered species in captivity and to maintain a gene bank of endangered reptiles.
- Facilitate research and scientific study on reptile behaviour, enclosure enrichment,
- Feed, nutrition and reproductive biology.
- Promote education & awareness amongst visitors on the role of reptiles in the natural world and the importance of reptile conservation.
- Ensure comfortable housing for all reptiles with special emphasis on health care, animal welfare and excellent animal husbandry.

#### 6. About us

S.No.	Particulars	Information			
	Basic Information about the Zoo				
1	Name of the Zoo	Madras Crocodile Bank Trust/ Centre for			
		Herpetology			
2	Year of	1976			
	Establishment				
3	Address of the Zoo	Post bag No.4, Vadanemmelli Village, East Coast Road, Mamallapuram-603 104 , Tamil Nadu, India			
4	State	Tamil Nadu			

5	Telephone Number	+91 9790242683
6	Fax Number	NIL
7	E-mail address	info@madrascrocodilebank.org
8	Website	https://madrascrocodilebank.org/
9	Distance from	Airport: 39.7km
	nearest	Railway Station:41.6km
		Bus Stand:0km
10	Recognition Valid upto (Date)	19th August 2022
11	Category of zoo	Medium
12	Area (in Hectares)	3.4
13	Number of Visitors	Adult :233893
	(Financial Year)	Children :155929
		Total Indian: 389822
		Total Foreigners: 11699
		Total Visitors: 401521
14	Visitors' Facilities	Snack Kiosk
	Available in Zoo	Portable Water
		Education Centre
		(All terrain) Wheelchair

15	Weekly Closure	Monday
	Day of the Zoo	

	Management Personnel of the zoo			
16	Name with designation of the Officer in-charge	Zai Whitaker and Allwin		
	(during reporting period)	Jesudasan		
	Name of the Veterinary Officer	Dr. Ruchika Lakshmanan		
Name of the Curator		Nikhil Whitaker		
	Name of the Assistant Curator	Ajay Karthik		
	Name of the Education Officer	Achsah Steffi John		
	Name of the Compounder/ Lab Assistant	NIL		

	Owner / Operator of the Zoo				
17	*Name of the Operator	Trust operated			
		Madras Crocodile Bank Trust			
18	Address of the Operator	Post bag No.4, Vadanemmelli Village, East Coast Road, Mamallapuram-603 104, Tamil Nadu, India			
19	Contact details/Phone	+91 9790242683			
	number of Operator				
20	E-mail address of	info@madrascrocodilebank.org			
	Operator				

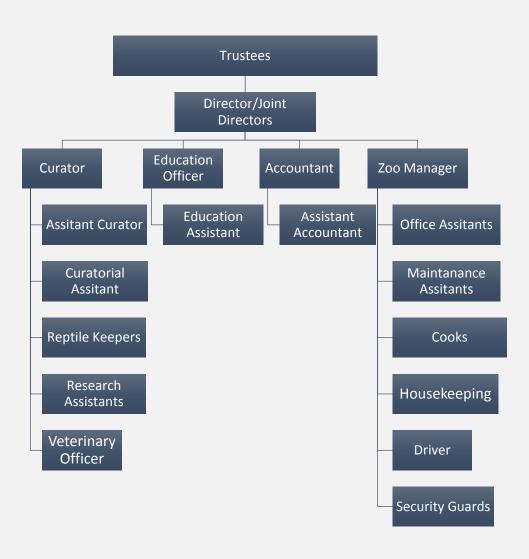
\* Rule 2(m) of the Recognition of Zoo Rules, 2009.

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

- I. in the case of a firm or other association of individuals, any one of the individual partners or members thereof; or
- II. in the case of a company, any director, manager, secretary or other officer, who is in-charge of and responsible to the company for the affairs of the zoo; or

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

## 7. Organizational Chart



## 8. Human Resources

## Manpower of the Zoo\*

SI.No.	Designation	Number of Sanctioned	Names of the incumbent (during reporting period)
		Posts	
1	JOINT DIRECTOR	2	ZAI WHITAKER
2	JOINT DIRECTOR	2	ALLWIN JESUDASAN
3	ZOO MANAGER	1	SENTHIL THANGAM
4	CURATOR	1	NIKHIL WHITAKER
5	ASSISTANT CURATOR	1	AJAY KARTHIK
6	VETERINARY OFFICER	1	Dr. RUCHIKA
			LAKSHMANAN
7	CURATORIAL ASSISTANT	1	AMBIKA YELAHANKA
8	ASSISTANT	2	GNANESWAR CH
	COORDINATOR –		PETER CHRISTOPHER
	Snakebite mitigation		
9	RESERCH ASSISTANTS –	2	JASON GERARD
	Cauvery Mugger Project		S. SURYA
10	EDUCATION OFFICER	1	ACHSAH STEFFI JOHN
11	ACCOUNTANT	2	M. MOHAN
			M. PAVITHRA
12	EDUCATION ASSISTANT	1	C. DHANASEKARAN
13	RESEARCH ASSISTANT	1	V. MOHANASUNDARAM
14	OFFICE ASSISTANT	2	T. MOHAN
			C. PURUSHOTHUMAN
15	COOK	3	G. ASHOK
			A. KUMARI
			V. YUVARANI
16	MAINTENANCE SUPERVISOR	1	L. GUNASEKARAN
17	MAINTENANCE	3	S. MOHAN
	ASSISTANT		K. ELUMALAI
			S. JANAKIRAMAN
18	HOUSEKEEPING	1	M. INDRADEVI
19	PARK SUPERVISOR	1	R. TANGARAJ
20	REPTILE KEEPER	4	V. GANGADURAI
			S. NAGARATHINAM
			S. SHANTHI
			G. GOWRI SHANKAR

21	ENCLOSURE	2	V. AMUTHA
	MAINTENANCE		J. PARIMALA
22	CROC SHOP KEEPER	1	N. PUSHPARANI
23	TICKET MACHINE	2	R. GNANAMURTHY
	OPERATOR		N. SELVAMANI
24	SECURITY GUARD	3	KRISHNA BAHADUR
			BUDIBAL SOMAI MAGAR
			TEK BAHADUR
25	DRIVER	1	M.RAMU

<sup>\*</sup>Please give above mentioned information in respect of all zoo personnel, from the Officer in-charge upto the Animal Keeper.

#### 9. Capacity Building of zoo personnel

SI.No.	Name and	Subject	Period of	Name of the
	designation	matter of	Training	Institution where
	of the zoo personnel	Training		the Training
				attended
NIL				

#### 10. Zoo Advisory Committee -

a. Date of constitution: 1976

b. Members

Romulus Whitaker III, the famous "snake man of India", who is a founder of MCBT.

Zai Whitaker, also one of the founders, and currently Managing Trustee of MCBT.

Samit Sawhny, Managing Director of Barefoot Resorts.

Ashish Gupta, Managing Director of Milesworth Travels.

Kamini Sundaram, Founder and Director, Abacus Montessori School.

M.M. Venkatachalam, Director, Coromandel International Ltd.

Prof Satyajit Mayor, Director, National Centre for Biological Sciences.

Venu Srinivasan, Chairman and Managing Director, TVS Motor Company, India.

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

13/04/2019

13/07/2019

26/11/2019

11/01/2020

## 11. Health Advisory Committee- Currently no committee is present. A Health advisory Committee will be formed immediately.

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

## INCOME

SI.no	Particulars	INR
1	Ticket Sales	2,15,49,270.00
2	Research Grants	1,26,66,350.05
3	Donations & Rent	13,95,749.35
4	Environment Education	13,84,340.00
5	Adopt an Animal	3,20,000.00
6	Bank Interest	22,01,320.00
7	Croc Shop sales	10,46,600.00
	Total	4,05,63,629.40

#### **EXPENDITURE**

Sl.no	Particulars	INR
1	Salary and Wages	1,43,08,686.00
2	Reptile Feed Costs	48,14,483.00

3	Maintenance and Upkeep	34,42,956.00
4	Pen Maintenance and Upkeep	41,02,225.00
5	Research	54,11,190.78
6	Environmental Education Expenses	2,80,123.00
9	Croc Shop Expenses	2,65,634.00
10	Administrative Expenses	22,46,367.18
	Total	3,48,71,664.96

## 13. Daily feed Schedule of animals

SI.No.	Species	Feed item	Quantity	Day of
			Per Week	fasting
1	Caiman Dwarf	Fish	5kg	NA
2	Caiman Spectacled	Fish Chicken	20kg	NA
3	Caiman Yacare	Fish Chicken	3kg	NA
4	Caiman Black	Fish Chicken	1kg	NA
5	Crocodile Alligator American	Chicken Buffalo	7kg	NA
6	Crocodile Tomistoma	Fish Chicken	6kg	NA
7	Crocodile Long Snouted (Gharial)	Fish	77kg	NA
8	Crocodile Marsh (Mugger)	Fish Chicken Buffalo	1213kg	NA
9	Crocodile Morelets	Fish	8kg	NA

SI.No.	Species	Feed item	Quantity Per Week	Day of fasting
		Chicken Buffalo		
10	Crocodile Nile	Fish Chicken Buffalo	9kg	NA
11	Crocodile Saltwater	Chicken Buffalo	77kg	NA
12	Crocodile Siamensis	Fish Chicken Buffalo	9kg	NA
13	Crocodile Snouted African Slender	Chicken Buffalo	2kg	NA
14	Crocodile West African Dwarf	Fish Chicken	2kg	NA
15	Crocodile Cuban	Chicken Buffalo	10kg	NA
16	Terrapin River (batagur)	Fish Greens	1kg 2kg	NA
17	Turtle Leith's Softshell	Fish	500g	NA
18	Tortoise Aldabra/Giant	Greens Fruits Vegetables	3kg 2kg 2kg	NA
19	Tortoise Indian Star	Greens Fruits Vegetables	2kg 1kg 1kg	NA
20	Turtle Crowned River/Roof	Fish Greens	1kg 2kg	NA

SI. No	Species	Feed item	Quantity	Day of
			Per week	Fasting
21	Turtle Freshwater / Indian Soft- shelled	Fish	2kg	NA

SI. No	Species	Feed item	Quantity	Day of
			Per week	Fasting
22	Turtle Ganges Soft-shelled	Fish	1kg	NA
23	Turtle Indian Roofed	Fish	1kg	NA
24	Turtle Indian Tent	Fish 1kg		NA
25	Travancore tortoise	Greens Fruits Vegetables	2kg 1kg 1kg	NA
26	Turtle Red Crowned Roofed	Fish Greens	2kg 1kg	NA
27	Indian Chameleon	Grasshoppers Superworms Crickets	Superworms	
28	Blue Tongue Skink	Greens Fruits VegetablesGrasshoppers Superworms Crickets Mice pinkies (occasionally)	Miscellaneous	NA
29	Basilisk lizards	Grasshoppers Superworms Crickets Mice pinks (occasionally)	Miscellaneous	NA
30	Termite hill gecko	Grasshoppers Superworms Crickets Mice pinks (occasionally)	rms ts	
31	Green iguana	Greens Fruits Vegetables	ruits 1kg	
32	Komodo dragon	Chicken 2kg Buffalo		NA
34	Python Indian - Rock	Rats Miscellaneous		NA
35	Python Regal / Reticulated	Chicken Miscellaneous Rats		NA
36	Trinket snake	Rats	Miscellaneous	NA

SI. No	Species	Feed item	Quantity	Day of
			Per week	Fasting
37	Common Krait	Rats	Miscellaneous	NA
38	Saw Scaled Viper	Rats	Miscellaneous	NA
39	Rat Snake	Rats	Miscellaneous	NA
40	Common Wolf Snake	Rats	Miscellaneous	NA
41	Russell's Viper	Rats	Miscellaneous	NA
42	Green anaconda	Rats	Miscellaneous	NA
43	Yellow anaconda	Rats	Miscellaneous	NA
44	Whitaker's sand boa	Rats	Miscellaneous	NA
45	Cobra Indian	Rats	Miscellaneous	NA
46	Corn snake	Rats	Miscellaneous	NA
47	Banded Krait	Rats	Miscellaneous	NA
48	Cobra Monocled	Rats	Miscellaneous	NA

## 14. Vaccination Schedule of animals

SI.No.	Species	Disease	Name of	Periodicity	Remarks
		vaccinated for	the Vaccine		
			and		
			dosage/		
			quantity		
			used		
NA					

## 15. De-worming Schedule of animals

SI.No.	Species	Drug used Month	
1	Tortoises	Fenbendazole September	
2	Snake	Fenbendazole October	
		Metronidazole	
3	Lizards	Fenbendazole	October

## 16. Disinfection Schedule

SI.No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
1	Marsh Crocodile	Open air	Dettol/ Manual cleaning Potassium	once a month
			permanganate foot dip	
3	Dwarf Crocodile	Open air	Dettol/ Manual	once a month
		•	cleaning	
			Potassium	
			permanganate foot dip	
4	Yacare Caiman	Open air	Dettol/ Manual	once a month
			cleaning	
			Potassium	
	01 - 3-1	0	permanganate foot dip	
5	Gharial	Open air	Dettol/ Manual	once in 3-4
			cleaning	months
			Potassium	
6	Siamese	Onon oir	permanganate foot dip Dettol/ Manual	once in 3-4
0	Crocodile	Open air	cleaning	months
	Crocodile		Potassium	1110111115
			permanganate foot dip	
7	NIIe Crocodile	Open air	Dettol/ Manual	once in 3-4
'	Mile Ciocodile	Open an	cleaning	months
			Potassium	1110111113
			permanganate foot dip	
8	Marsh Crocodile	Open air	Dettol/ Manual	once in 3-4
		ο μ σ σ	cleaning	months
			Potassium	
			permanganate foot dip	
			Annual Dredging to	
			increase water level	
9A	Green Iguana	Open air	Dettol/ Manual	once in 10 days
			cleaning	
			Potassium	
			permanganate foot dip	
9B	Water Monitor	Open air	Dettol/ Manual	once in 10 days
			cleaning	
			Potassium	
			permanganate foot dip	
9C	Dwarf Caiman	Open air	Dettol/ Manual	once a month
			cleaning	
			Potassium	
10	Marah Crassdila	Onor sir	permanganate foot dip	anaa in 0. 4
10	Marsh Crocodile	Open air	Dettol/ Manual	once in 3-4
			cleaning	months
			Potassium	
			permanganate foot dip	

SI.No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
			Annual dredging to increase water level	
11	Saltwater Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 3-4 months
11A	Aldabra Tortoise	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 10 days
12A	Saltwater Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 3-4 months
12B	Saltwater Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 3-4 months
12C	Saltwater Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once a month
13	Gharial	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip Annual dredging to increase water level.	once in 3-4 months
14	Spectacled Caiman	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once a month
15	Morelets Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 3-4 months
16	Marsh Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 3-4 months
16A	Saltwater Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once a month
17	Saltwater Crocodile	Open air	Dettol/ Manual cleaning Potassium permanganate foot dip	once in 3-4 months

SI.No.	Species	Type of enclosure	Disinfectant used and method	Frequency of disinfection
18	False Gharial	Open air	Dettol/ Manual	once a month
10	i alse Grianai	Орен ап	cleaning	once a monun
			Potassium	
			permanganate foot dip	
19	American Alligator	Open air	Dettol/ Manual	once in 3-4
13	7 tillellean 7 tillgatol	Open an	cleaning	months
			Potassium	1110111110
			permanganate foot dip	
20A	Saltwater	Open air	Dettol/ Manual	once a month
2071	Crocodile	Opon an	cleaning	
	Orocoano		Potassium	
			permanganate foot dip	
20B	Terrapin River	Open air	Dettol/ Manual	once a month
	(Batagur baska)	opon an	cleaning	
	(=9		Potassium	
			permanganate foot dip	
21	Marsh Crocodile	Open air	Dettol/ Manual	Twice a month
		•	cleaning	
			Potassium	
			permanganate foot dip	
22	Marsh Crocodile	Open air	Dettol/ Manual	Twice a month
		·	cleaning	
			Potassium	
			permanganate foot dip	
24	Gharial	Open air	Dettol/ Manual	once in 3-4
			cleaning	months
			Potassium	
			permanganate foot dip	
25	Spectacled	Open air	Dettol/ Manual	once a month
	Caiman		cleaning	
			Potassium	
			permanganate foot dip	
26	Spectacled	Open air	Dettol/ Manual	once a month
	Caiman		cleaning	
			Potassium	
07	A Colored Charles	0	permanganate foot dip	
27	African Slender	Open air	Dettol/ Manual	once a month
	Snouted Crocodile		cleaning	
			Potassium	
28	Nurcon	Open cir	permanganate foot dip  Dettol/ Manual	onco in 10 days
20	Nursery	Open air		once in 10 days
			cleaning Potassium	
			permanganate foot dip	
29	Out Office	Open air	Dettol/ Manual	once in 10 days
23	Out Office	Open an	cleaning	once in 10 days
			Potassium	
			permanganate foot dip	
			pormanganate root dip	

SI.No.	Species	Type of	Disinfectant used and	Frequency of
		enclosure	method	disinfection
30	Snake room	Closed	Dettol/ Manual	once every week
		room	cleaning	
PP1	Cuban Crocodile	Open air	Dettol/ Manual	once in 3-4
			cleaning	months
			Potassium	
			permanganate foot dip	
PP2	Marsh Crocodile	Open air	Dettol/ Manual	once in 3-4
			cleaning	months
			Potassium	
			permanganate foot dip	
PP3	Morelets Crocodile	Open air	Dettol/ Manual	once a month
			cleaning	
			Potassium	
			permanganate foot dip	

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

SI.No.	Name	Designation	Date of Health Check	Findings of Health Check up								
			up									
			byees for zoonotic diseases was conducted in the ye									
No he	No health check-up of employees for zoonotic diseases was conducted in the year											
	2	019-2020. One	e will be scheduled soon (p	oost pandemic).								

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

- Repair of casuarina barricades between small enclosure.
- Dredging of all natural ponds (Pen 8,10,13) was conducted during May-August.
- Extra fans were fitted in the snake room to improve air circulation.
- UV lamps were fixed above certain enclosures.
- Multiple CCTV cameras were fitted to various enclosures for security and to monitor animal behaviour.

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

Name of Programme	Dates	No. of Participants
What's that reptile? Jr.	18/05/2019 and 19/05/2019	18
Blind date at Croc bank	29/05/2019	8
Know your reptiles	1/6/2019	5
KYR - Birthday aprty	6/7/2019	20

Show and tell	20/7/2019	11
Know your reptiles	21/7/2019	10
Know your reptiles - Avinash	21/7/2019	47
KYR - Paul's family	3/8/2019	6
Know your reptiles	11/8/2019	14
KYR - David's family	24/8/2019	5
Vruksha camp	30/08/2019 & 31/08/2019	31
Reptile encounter	8/09/2019	15
Reptile encounter	25/09/2019	21
Scales and Tails	29/09/2019 to 2/10/2019	17
Know your Reptiles	6/10/2019	11
Know your Reptiles	16/10/2019	16
Zoo & Me - Modern Classroom	17/10/2019	95
Know your Reptiles	18/10/2019	27
Snake walk	19/10/2019	23
KYR - Modern Classroom	24/10/2019	78
Reptile encounter	11/11/2019	13
Know your Reptiles	30/11/2019	57
Reptile encounter	6/12/2019	63
Guided tour	13/12/2019	3
Snake walk	15/12/2019	2
Reptile encounter	25/12/2019	14
Scales and Tails	28/12/2019 — 31/12/2019	18

Know your Reptiles	9/01/2020	23
Know your Reptiles	15/01/2020	13
Snake walk	19/01/2020	5
Reptile encounter	22/01/2020	14
Reptile encounter	25/01/2020	95
Reptile encounter	26/01/2020	41
Reptile encounter	2/02/2020	40
Snake Walk	9/02/2020	9
Reptile encounter	15/02/2020	4
Reptile encounter	19/02/2020	62
Guided tour & venom extraction	22/02/2020	8
Reptile encounter	27/02/2020	35
Reptile encounter	28/02/2020	30

- **20. Important Events and happenings:** Inauguration of Thor's enclosure, our new on display Saltwater Crocodile.
- **21.Seasonal special arrangements for upkeep of animals:** LUCKY HERP 100W UVA/UVB HEAT/LIGHT MERCURY VAPOUR LAMP provided for longer duration during colder months. More basking opportunities for smaller animals during colder months.

#### 22. Research Work carried out and publications:

Bardi, E. Lubian, E. Whitaker, N. & Romussi, S. (2018) Preliminary study on haematological values of two endangered turtle species: *Indotestudo travancorica* and *Batagur kachuga*. International Journal of Health, Animal Science and Food Safety, Vol 5 No 1(2018).

Khandelwal, P. C., & Hedrick, T. L. (2020). How biomechanics, path planning and sensing enable gliding flight in a natural environment. Proceedings of the Royal Society B: Biological Sciences, 287(1921), 20192888.

Augustine, L. B.C. Moore, V. Waller, S.D. Bailey, A. Kartik and K. Guyton II. (2018) Copulatory Directional Asymmetry and Implications for Crocodylian Reproduction.

164-171. In: Crocodiles. Proceedings of the 25th Working Meeting of the IUCN-SSC Crocodile Specialist Group. IUCN: Gland, Switzerland.

Litschka-Koen T, Pons J, Tiglao PJ et al. Case reports of tropical snakebite victims illustrate the vital humanitarian role and challenges of community action groups: RSTMH Special Report on Snakebite. London: RSTMH, 2019 (Ajay Kartik co-author).

Kartik, A.- Note on aberrant morphology in *Bungarus caeruleus*. Herpetological Review 51(1), 2020 pp 13.

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

Red crowned roofed turtle (*Batagur kachuga*) Gharial (*Gavialis gangeticus*) River Terrapin (*Batagur Baska*) Three striped roofed turtle (*Batagur dhongoka*)

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

A.		Ar	nimals arrivii	ng in the Zoo	
	H.NO.	Species	Number (M:F)	From which Zoo	Date of arrival in the zoo
	1	Banded krait ( <i>Bungarus</i> fasciatus)	3:1:0	Alipore Zoological Gardens, Kolkata	10/06/2019
	2	Cobra Monocled ( <i>Naja kaouthia</i> )	2:2:0	Alipore Zoological Gardens, Kolkata	10/06/2019
B.		An	imals going	from the zoo	
	H.NO.	Species	Number (M:F)	Going to which Zoo	Date of deposition from the zoo
	1	Yellow anaconda (Eunectus notaeus)	0:0:4	Alipore Zoological Gardens, Kolkata	10/06/2019
	2	Yellow anaconda (Eunectus notaeus)	4:4:0	Nandankanan Zoological Park, Bhubaneswar	19/10/2019
	3	Nile crocodile (Crocodylus niloticus)	1:2:0	Nandankanan Zoological Park, Bhubaneswar	19/10/2019

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

Sl.No.	Date of Rescue	Species with number of animals rescued with their sex (M: F:U:T)	Received from	Date of Submission of Report to the CWLW / CZA	Action to	aken
					Date and Place of rehabilitation in their habitat	Reasons for housing in the zoo, if not released in their habitat
			NIL			



## 26. Annual Inventory of animals

Form – II

[See Rule 11(1)]

Part – A

Inventory Report for the Year:

Endangered Species\*

2019-2020 Annual Report			Opening 01/04	stock l/2019	on		Births	s	Ac	quisit s	ion	D	ispos	al	D	eath	ıs	Closir	ng stock c	on 31/03	/2020
ANIMAL NAME	SCIENTIFIC NAME	M	F	U	Т	M	F	U	M	F	U	М	F	U	M	F	U	M	F	U	т
Crocodile Long Snouted (Gharial)	Gavialis gangeticus	3	5	30	38			21									8	3	5	43	51
Crocodile Marsh ( Mugger )	Crocodylus palustris	650	1050	132	1832											2	1	650	1048	122	1820

2019-2020 Annual Report			Opening 01/04	stock	on		Births	S	Ace	quisit s	tion	D	ispos	al	D	eath	ıs	Closii	Closing stock on 31/03/2020					
ANIMAL NAME	SCIENTIFIC NAME	M	F	U	Т	M	F	U	M	F	U	М	F	U	М	F	U	M	F	U	Т			
Crocodile Salt Water	Crocodylus porosus	6	5	31	42										1			5	5	31	41			
Terrapin River (batagur)	Batagur baska	1	2	22	25													1	2	22	25			
Turtle Crowned River/Roof	Batagur dhongoka	1	4	6	11													1	4	6	11			
Turtle Fresh Water / Indian Soft-shelled	Lissemys punctata	0	0	54	54													0	0	54	54			
Turtle Ganges Soft-shelled	Nilssonia gangetica	0	0	9	9													0	0	9	9			
Turtle Red Crowned Roofed	Batagur kachuga	14	3	57	74												2	14	3	55	72			

2019-2020 Annual Report			Opening 01/04	stock   1/2019	on		Births	6	Ace	quisit s	tion	D	ispos	sal	D	eath	ıs	Closir	ng stock c	on 31/03	/2020
ANIMAL NAME	SCIENTIFIC NAME	M	F	U	Т	M	F	U	M	F	U	М	F	U	M	F	U	M	F	U	Т
Indian Chameleon	Chamaeleo zeylanicus	1	0	0	1													1	0	0	1
Python Indian - Rock	Python molurus	1	1	17	19													1	1	17	19
Russell's Viper	Daboia russelii	1	0	0	1													1	0	0	1
Cobra Indian	Naja naja	1	0	2	3													1	0	2	3
Cobra Monocled	Naja kaouthia	0	0	0	0				2	2	0							2	2	0	4

<sup>\*</sup>Animals under Schedule I and Schedule II of the Wild Life (Protection) Act, 1972

Part – B

## Other than Endangered Species

2019-2020 Annual Report		Op		g stocl 4/2019		Е	Births	S	Acq	uisiti	ons	D	ispos	sal	D	eath	S			ng stoc 03/202	
ANIMAL NAME	SCIENTIFIC NAME	М	F	U	т	M	F	U	M	F	U	М	F	U	M	F	U	М	F	U	Т
Caiman Dwarf	Paleosuchus palpebrosus	1	1	25	27													1	1	25	27
Caiman Spectacled	Caiman crocodylus	0	0	42	42												2	0	0	40	40
Caiman Yacare	Caiman yacare	1	2	0	3													1	2	0	3
Caiman Black	Melanosuchus niger	0	1	0	1													0	1	0	1
Crocodile False Gharial	Tomistoma schlegelii	1	1	0	2													1	1	0	2

2019-2020 Annual Report		Oį		g stocl 4/2019		E	Birth	S	Acq	uisiti	ons	D	ispos	sal	D	eath	S			ng stoc /03/202	
ANIMAL NAME	SCIENTIFIC NAME	М	F	U	т	М	F	U	M	F	U	М	F	U	M	F	U	М	F	U	Т
Crocodile Alligator American	Alligator mississipiensis	1	2	0	3													1	2	0	3
Crocodile Morelets	Crocodylus moreletii	1	1	11	13												1	1	1	10	12
Crocodile Nile	Crocodylus niloticus	2	3	17	22									3				2	3	14	19
Crocodile Siamensis	Crocodylus siamensis	1	1	26	28													1	1	26	28
Crocodile Snouted African Slender	Mecistops cataphractus	0	2	0	2													0	2	0	2
Crocodile West African Dwarf	Osteolaemus tetraspis	1	0	0	1													1	0	0	1

2019-2020 Annual Report		Oį		g stocl 4/2019		E	Births	6	Acq	uisiti	ons	D	ispos	sal	D	eath	s			ng stoc 03/202	
ANIMAL NAME	SCIENTIFIC NAME	M	F	U	т	М	F	U	M	F	U	M	F	U	M	F	U	М	F	U	Т
Crocodile Cuban	Crocodylus rhombifer	1	3	0	4													1	3	0	4
Leith's Softshell Turtle	Nilssonia leithii	0	0	1	1													1	0	0	1
Tortoise Aldabra/Giant	Dipsochelys gigantea	0	0	4	4													1	3	0	4
Tortoise Indian Star	Geochelone elegans	2	3	9	14											1	1	2	2	8	12
Turtle Indian Roofed	Pangshura tentoria circumdata	0	0	17	17										1	1	1	0	0	14	14
Turtle Indian Tent	Pangshura tecta	0	0	2	2													0	0	2	2

2019-2020 Annual Report		Opening stock on 01/04/2019			Births			Acquisitions			Disposal			Deaths			Closing stock on 31/03/2020				
ANIMAL NAME	SCIENTIFIC NAME	M	F	U	Т	М	F	U	M	F	U	M	F	U	M	F	U	М	F	U	Т
Travancore tortoise	Indotestudo travancorica	6	22	20	48			1										6	22	21	49
Blue Tongue Skink	Tiliqua scincoides	0	0	2	2													1	1	0	2
Basilisk lizards	Basiliscus basiliscus	0	0	4	4											1		0	0	3	3
Termite hill gecko	Hemidactylus triedurus	1	2	1	4													1	2	1	4
Green iguana	Iguana iguana	1	1	3	5											1		1	0	3	4
Komodo dragon	Varanus komodoensis	2	1	0	3													2	1	0	3
Legless lizards	Pseudopus apodus	0	0	1	1												1	0	0	0	0

2019-2020 Annual Report		Opening stock on 01/04/2019			Births			Acquisitions			Disposal			Deaths			Closing stock on 31/03/2020				
ANIMAL NAME	SCIENTIFIC NAME	M	F	U	Т	М	F	U	М	F	U	М	F	U	M	F	U	М	F	U	т
Python Regal / Reticulated	Python reticulatus	0	1	0	1													0	1	0	1
Trinket snake	Coeleognathus helena	1	2	1	4													1	2	1	4
Common Krait	Bungarus caereuleus	0	0	2	2													1	1	0	2
Saw Scaled Viper	Echis carinatus	0	0	3	3													1	2	0	3
Rat Snake	Ptyas mucosa	1	1	0	2													1	1	0	2
Common Wolf Snake	Lycodon aulicus	1	1	0	2													1	1	0	2

2019-2020 Annual Report		Opening stock on 01/04/2019		Births Acquisitions		Disposal		al Deaths		Closing stock on 31/03/2020											
ANIMAL NAME	SCIENTIFIC NAME	М	F	U	т	М	F	U	М	F	U	М	F	U	М	F	U	M	F	U	т
Green anaconda	Eunectes murinus	1	1	6	8												4	1	1	2	4
Yellow anaconda	Eunectes notaeus	0	2	25	27									12			2	0	2	11	13
Whitaker's sand boa	Eryx whitakerii	1	1	11	13												1	1	1	10	12
Corn snake	Pantherophis guttatus	0	0	3	3												1	0	0	2	2
Banded Krait	Bungarus fasciatus	0	0	0	0				3	1	0							3	1	0	4

## 27. Mortality of animals

	1			ı	1
SI no.	SPECIES	DATE	SEX	NO.	Cause of death as diagnosed by post-mortem
1	Whitaker's sand boa	17/04/2019	UK	1	Emaciated
	Eryx whitakerii				
2	Legless lizard  Pseudopus  apodus	10/05/2019	UK	1	Ingestion of foreign body
3	Marsh crocodile Crocodylus palustris	08/05/2019	UK	1	Cannibalized
4	Indian roofed turtle	28/06/2019	UK	1	Fatigue/Emaciated
	Pangshura tentoria circumdata				
5	Marsh crocodile Crocodylus palustris	02/07/2019	UK	1	Cranial bones only
6	Corn snake  Pantherophis  guttatus	22/07/2019	UK	1	Abscess on the mouth
	guitatus				
7	Star tortoise	25/07/2019	UK	1	Cloacal prolapse
	Geochelone elegans				

SI no.	SPECIES	DATE	SEX	NO.	Cause of death as diagnosed by post- mortem
8	Green anaconda  Eunectus  murinus	29/07/2019	UK	1	Anorexic
9	Green anaconda  Eunectus  murinus	09/08/2019	UK	1	Pulmonary pneumonia
10	Marsh crocodile Crocodylus palustris	11/08/2019	UK	1	Cannibalized
11	Yellow anaconda  Eunectus notaeus	14/08/2019	UK	1	Autolyzed
12	Green anaconda  Eunectus  murinus	17/08/2019	UK	1	Emaciated
13	Marsh crocodile Crocodylus palustris	24/08/2019	UK	1	Cranial bones only
14	Green basilisk  Basiliscus  pulmifrons	13/09/2019	Female	1	Enteritis
15	Star tortoise Geochelone elegans	04/10/2019	UK	1	Crystallization in the liver

SI no.	SPECIES	DATE	SEX	NO.	Cause of death as diagnosed by post- mortem
16	Marsh crocodile Crocodylus palustris	10/10/2019	UK	1	Cannibalized
17	Spectacled caiman Caiman crocodilus	27/10/2019	UK	1	Autolysed
18	Green anaconda  Eunectus  murinus	27/10/2019	UK	1	Anorexic
19	Gharial crocodile  Gavialis  gangeticus	29/10/2019	UK	1	Emaciated
20	Gharial crocodile  Gavialis  gangeticus	08/11/2019	UK	1	Emaciated
21	Indian roofed turtle Pangshura tentoria circumdata	10/11/2019	UK	1	Autolyzed
22	Gharial crocodile  Gavialis  gangeticus	12/11/2019	UK	1	Emaciated

	T				
SI no.	SPECIES	DATE	SEX	NO.	Cause of death as diagnosed by post-mortem
23	Marsh crocodile Crocodylus palustris	17/11/2019	UK	1	Cannibalized
24	Marsh crocodile Crocodylus palustris	28/11/2019	UK	1	Cranial Bones only
25	Gharial crocodile  Gavialis  gangeticus	04/12/2019	UK	1	Emaciated
26	Gharial crocodile  Gavialis  gangeticus	09/12/2019	UK	1	Emphysema
27	Yellow anaconda  Eunectus notaeus	11/12/2019	UK	1	Autolyzed
28	Marsh crocodile Crocodylus palustris	18/12/2019	UK	1	Cannibalized
29	Saltwater crocodile Crocodylus porosus	13/01/2020	Male	1	Pulmonary pneumonia
30	Morelet's crocodile Crocodylus moreletii	06/01/2020	UK	1	Cannibalized

SI no.	SPECIES	DATE	SEX	NO.	Cause of death as diagnosed by post-mortem
31	Red-crowned roofed turtle	14/01/2020	UK	2	Enteritis
	Batagur kachuga				
32	Marsh crocodile Crocodylus palustris	19/01/2020	UK	1	Impaction of colon
33	Spectacled caiman	20/01/2020	UK	1	Nodular growth on lung and spleen
	Caiman crocodilus				
34	Marsh crocodile Crocodylus palustris	11/02/2020	Male	1	Cranial bones only
35	Green iguana Iguana iguana	27/02/2020	Female	1	Salpingitis with bacterial septicaemia
36	Indian roofed turtle	12/03/2020	Male	1	Autolyzed
	Pangshura tentoria circumdata				
37	Marsh crocodile Crocodylus palustris	14/03/2020	UK	1	Cranial bones only
38	Gharial crocodile	28/03/2020	UK	1	Emaciated
	Gavialis gangeticus				

SI no.	SPECIES	DATE	SEX	NO.	Cause of death as diagnosed by post- mortem
39	Marsh crocodile Crocodylus palustris	10/04/2020	UK	1	Autolyzed
40	Gharial crocodile  Gavialis  gangeticus	04/04/2020	UK	1	Emaciated
41	Gharial crocodile  Gavialis  gangeticus	25/04/2020	UK	1	Emaciated

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

Sr. No	Norm No. under RZR, 2009	Condition Stipulated	Time Period to Comply	Since when pending	Status with regard to compliance of the conditions		
	AWAITING REPORT FROM LATEST CZA INSPECTION.						

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

### ARACHNIDS

1.	Argiope versicolor	St. Andrew's Cross Spider
2.	Argiope aemula	Oval St Andrew's Cross Spider
3.	Argiope anasuja	Giant cross spider
4.	Argiope pulchella	Garden cross spider
5.	Gasteracantha geminate	Oriental Spiny Orb-weaver
6.	Gasteracantha mammosa	Asian Spinyback Spider
7.	Cyclosa insulana	Island Cyclosa Spider
8.	Parawixia sp.	Orb-weaver Spider sp.
9.	Tetragnatha sp.	Long-jawed orb-weavers sp
10.	Leucauge decorata	Decorative silver orb spider
11.	Tetragnatha mandibulata	Big-jawed Spider
12.	Theridion sp.	Tangle-web spiders
13.	Hippasa sp.	Wolf spiders
14.	Citrophora citricola	Tropical tent-web spider
15.	Citrophora cicatrosa	Garden tent web spider
16.	Crossopriza Iyoni	Tailed cellar spiders
17.	Oxyopes rufisternum	Lynx spider
18.	Peucetia viridans	Green lynx spider
19.	Oxyopes sp.	Lynx spider sp.
20.	Pardosa pseudoannulata	Pond wolf spider
21.	Plexippus petersi	Common housefly-catcher
22.	Plexippus paykulli	Pantropical jumper
23.	Telamonia dimidiata	Two-striped jumper
24.	Thomisus pugilus	Crab Spider

- 25. Olios milleti Green crab spider
- 26. Neosparassus sp. Badge Huntsman Spiders

#### **BIRDS**

1. Turdoides affinis	White headed babbler
2. Megalaima haemacephala	Coppersmith barbet
3. Merops philippinus	Blue tailed bee-eater
4. Merops orientalis	Small bee-eater
5. Pycnonotus cafer	Red vented bulbul
6. Pycnontus luteolus	White browed bulbul
7. Pycnonotus jocosus	Red-whiskered bulbul
8. Corvus splendens	House crow
9. Corvus macrorhynchos	Jungle crow
10. Hierococcyx varius	Common hawk cuckoo
11. Cacomantis passerines	Indian plaintive cuckoo
12. Streptopelia chinensis	Spotted dove
13. Dicrurus macrocercus	Black drongo
14. Nycticorax nycticoraz	Black crowned night heron
15. Ardeola grayii	Indian pond heron
16. Aegithina tiphia	Common iora
17. Ceryle rudis	Pied kingfisher
18. Alcedo atthis	Small blue kingfisher
19. Halcyon smyrnensis	White throated kingfisher
20. Haliastur Indus	Brahminy kite
21. Milvus migrans	Black kite
22. Haliaeetus leucogaster	White bellied sea eagle

Asian koel

23. Eudynamys scolopacea

24. Vanellus indicus Red-wattled lapwing 25. Acridotheres tristis Common myna 26. Oriolus oriolus Eurasian golden oriole 27. Otus bakkamoena Collared scops owl 28. Athene brahma Spotted owlet 29. Psittaculla cyanocephala Blossom headed parakeet 30. Psittaculla krameri Rose ringed parakeet 31. Copsychus saularis Oriental magpie robin 32. Accipiter badius Shikra 33. Nectarinia lotenia Loten's sunbird 34. Nectarinia zeylonica Purple rumped sunbird 35. Artamus fuscus Ashy swallow shrike House swift 36. Apus affinis 37. Cypsiurus balasiensis Asian palm swift 38. Dendrocitta vagabunda Indian treepie 39. Amaurornis phoenicurus White breasted waterhen 40. Dinopium benghalense Lesser flameback woodpecker 41. Clamator coromandus Chestnut winged cuckoo 42. Zoothera citrina Orange headed thrush 43. Ardea alba Great egret 44. Egretta garzetta Little egret 45. Bubulcus ibis Cattle egret 46. Mesophoyx intermedia Intermediate egret 47. Phalacrocorax niger Little cormorant 48. Muscicapa dauurica Asian brown flycatcher 49. Terpsiphone paradisi Asian paradise flycatcher

Forest wagtail

50. Dendronanthus indicus

51. *Motacilla flava* Yellow wagtail

52. Pericrocotus cinnamomeus Small minivet

53. Tyto alba Barn owl

54. *Pitta brachyura* Indian pitta

55. Ptyonoprogne concolor Dusky crag martin

56. Centropus sinensis Greater coucal

57. Otus bakkamoena Collared scops-owl

58. *Upupa epops* Common hoopoe

59. *Orthotomus sutorius* Common tailorbird

60. *Prinia socialis* Ashy prinia

#### **LIZARDS**

1. Calotes versicolor Common garden lizard

2. *Mabuya carinata* Brahminy skink

3. Sitana ponticeriana Fan-throated lizard

4. Chamaeleo zeylanicus Indian chameleon \*rare

5. Hemidactylus frenatus Southern house gecko

6. Hemidactylus leshenaultii Bark gecko

7. Hemidactylus flaviviridis Common house gecko

8. Hemidactylus brookii Brook's gecko

9. Varanus bengalensis Common Indian monitor lizard

10. *Lygosoma punctata* Striped skink

SNAKES	
1. Ptyas mucosa	Indian rat snake
2. Amphiesma stolata	Stripped keelback
3. Macrophistodon plumbicolor	Green keelback
4. Ahaetulla nasuta	Common vine snake
5. Dendrelaphis tristis	Common Bronzeback tree snake
6. Lycodon aulicus	Common wolf snake
7. Lycodon striatus	Barred wolf snake
8. Eryx johnii	Common sand boa
9. Bungarus caeruleus	Common krait
10. Naja naja	Spectacled cobra

