

Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal

Annual Report for the year
2018-19



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1. Report of the Officer-in-charge

The great majority of modern zoos focus heavily on conservation work and education. Padmaja Naidu Himalayan Zoological Park has developed an international reputation for its conservation work, in particular its breeding for release programmes for endangered and threatened native species. Padmaja Naidu Himalayan Zoological Park also has a strong commitment to its community education programme about conservation, environmental management, and the need to ensure biodiversity.

This year the Park welcomed the birth of cubs of 2 (1:1) Snow leopard and (1:3) Red Panda further strengthening the conservation breeding program for these animals. The park also organized and hosted the Red panda meeting organized by Padmaja Naidu Himalayan Zoological Park with due permission from Central Zoo Authority and West Bengal Zoo Authority. The Inter State Meeting of the participating Zoos on 28th and 29th May, 2018 at Darjeeling was to discuss various issues pertaining to captive breeding, restocking animal exchange, research studies, record keeping, outreach activities and release of red panda in the wild habitat.

The park conducts the Outreach programmes as mentioned in the zoo calendar every year. This year the Park celebrated Earth Day with a unique program including bird watching and experiential story telling. The purpose of this program was to educate the students on the local flora and fauna of Darjeeling. The park celebrated its 60th Foundation day this year. On 1st July, 2018 the Park planted saplings in the parks forest area and surrounding vicinity to celebrate the Van Mahotsava Day. International Red panda day was celebrated on 15th September 2018 to further support the breeding program by raising awareness among the visiting tourists, locals and students on the Red panda, the threats faced by the species and the conservation efforts to save the species worldwide and by the park. The Park in association with Hayden Hall Community Development Centre, Darjeeling celebrated Children Day involving children from remote areas of Darjeeling. We also observed Child's Right week in association with the District Child Protection Unit, Darjeeling by organizing an outreach program for local students and teachers.

This year the Park hosted 2271 students and 261 faculties from 53 institutes for educational tours of the park.

Padmaja Naidu Himalayan Zoological Park welcomed five numbers of Mishmi Takin (*Budorcas taxicolor taxicolor*) from Tierpark Berlin Zoo, Germany on 20.01.2019 under the animal exchange program. The Park received three males and two females (3:2). The animals were quarantined within the park for a period of one month. After the quarantine period, the animals were put in display for the visitors. The Mishmi takin (*Budorcas taxicolor taxicolor*) is an endangered (IUCN) goat-antelope native to India, Myanmar and the People's Republic of China. It is a subspecies of Takin. It is

categorized as Schedule I under the Wildlife Protection Act. The Mishmi Takin lives in Northeast India and is the national animal of Bhutan. Padmaja Naidu Himalayan Zoological Park is the only zoo in India that has these majestic animals in their display.

Several development and modification works were undertaken including remodelling of two herbivore enclosures for housing of Mishmi Takins that arrived at the Park from Tierpark Berlin Zoo, Germany in January. One RCC water tank along with rain water harvesting system was done at Bengal Natural History Museum. Protection wall at the veterinary hospital, caves for shelter to the snow leopards at Conservation Breeding Centre at Topkeydara, modification of the old Tiger enclosure, aviary etc. The old poly carbonate sheets were replaced by the toughened glass at the pheasantry and Aviary which improved the exhibition visibility and visitor's satisfaction.

Darjeeling zoo is working on two research projects funded by West Bengal Zoo Authority titled "*Status Survey of Himalayan Goral (Nemorhaedus goral) at Singalila National Park, Neora Valley national Park, Mahananda Wildlife Sanctuary, Senchal Wildlife Sanctuary and Kurseong Division*" and "*Study of Microflora and Microfauna at PNHZ Park, Darjeeling*". The projects are underway during the financial year 2019-2020.

Darjeeling experienced snowfall after nearly a decade. The temperatures in Darjeeling plummeted to 1⁰ C on 28.01.2019 resulting in snowfall. The park houses fauna of the Eastern Himalayan region therefore the animals were comfortable. No damage occurred to the Park infrastructure. The tourists were pleasantly surprised and delighted at the sight of the snowfall.

Capacity building of the staffs was among the major activities that the park got involved into, the Veterinary Officer of the Park, Dr Joy Dey attended the Indian Zoo Veterinarians from 7th to 9th January, 2019 at Shri Chamarajendra Zoological Garden, Mysore. Similarly the zoo keepers were sent for capacity building at Different zoos. During the period i happened to attend the Annual Zoo Director's Conference from 12th to 15th November 2019 organised by CZA and Nawab Wazid Ali Shah Zoological Garden, Lucknow.

2. History of the Zoo

The Padmaja Naidu Himalayan Zoological Park Darjeeling formerly known as Himalayan Zoological Park, Darjeeling was established on 14th August, 1958. In 1975 Late Smt. Indira Gandhi, then the Prime Minister of India, dedicated the Himalayan Zoological Park in memory of Late Smt. Padmaja Naidu, Ex-Governor of West Bengal and the Park was renamed Padmaja Naidu Himalayan Zoological Park. The land on which the Zoological Park is standing was acquired by the British Govt. in the late 19th Century and developed as a Public Park known as Birch Hill Park. After Independence the Govt. of India and the Govt. of West Bengal decided to develop the Birch Hill Park as Zoological Park for Conservation of Eastern Himalayan ecosystem.

Five (5) hectares of land in Topkedara block under Senchal Wildlife Sanctuary was handed over to Padmaja Naidu Himalayan Zoological Park for construction of a Conservation Breeding Centre for Snow leopard and Red Panda. The Conservation Breeding Centre for Snow leopard (*Uncia uncia*) and Red Panda (*Ailurus fulgens*) at Topkedara was funded by the Govt. of West Bengal and Central Zoo Authority. The centre was inaugurated on 08.10.2013 by the Honourable Minister in Charge (Forest) Shri Hiten Barman and North Bengal Development Minister Shri Gautam Deb, followed by the release of a pair of Snow leopard by the two ministers.

The breeding centre currently houses nine (5:4) red pandas and eight (3:5) snow leopards. The breeding centre also welcomed the birth of one male and one female snow leopard cub on 04.03.2018 from Zima who is an 8 year old female acquired from Leipzig Germany and Namkha who is a 4 year old male acquired from Mulhouse Zoo, France. The breeding centre is currently staffed with two night guards and three zoo keepers being supervised by the Estate Supervisor, PNHZP. The breeding facility is not open to visitors. The Veterinary officer and Zoo Biologist from PNHZ Park visit the facility once a week.

An area of 4.65 hectares and 1.28 hectares of forest land under Kurseong Forest Division was handed over to Padmaja Naidu Himalayan Zoological Park for construction of Satellite Zoo and staff quarters respectively. The existing infrastructure of erstwhile Deer park was renovated and new infrastructure was created to take up conservation breeding of different herbivore and pheasants. The breeding centre was inaugurated on 07.12.2011 by Shri Hiten Barman, Minister-in Charge/ Forests, Govt of west Bengal along with Shri Rohit Sharma, MLA, Kurseong. The satellite zoo was developed for the purpose of pheasantry as well as conservation breeding of herbivores and pheasants. The construction of an aviary, herbivore enclosures, staff quarters, Dy. Directors residential quarter and suspension bridge were taken up in stages.

The breeding centre has thirteen open enclosures for herbivores after partition. All the herbivore enclosures are fenced, equipped with night shelters and feeding platforms. The breeding centre has also been doing remarkably well. The Park has also come up with a 2-unit pheasantry, adjacent to the previously constructed 7-unit pheasantry. The 2 unit pheasantry was completed on 11.12.2014. The pheasantry is complete with chick rearing and

artificial incubation rooms, covering an approximate area of 426.43 sq. m. Electrification of the chick rearing house has also been complete and made functional. The breeding centre also has a veterinary hospital, keeper's quarters, record keeping room and the Deputy Directors bungalow. Currently the breeding centre houses Golden Pheasant, Lady Amherst's Pheasant, , Silver pheasant, Temminck's tragopan, Kaleej pheasant, Red Jungle Fowl, Cheer pheasant, Reeve's pheasant, Blue sheep, Himalayan Thar, Barking Deer and Himalayan goral.

3. Vision

To establish as a leading zoological park dedicated to conservation breeding and conservation research. Ensuring conservation of all endangered species and their eco systems through holistic approach towards captive management, education and research.

4. Mission

Assisting the National efforts for conservation of the endangered Eastern Himalayan Ecosystem by ex-situ conservation breeding, augmenting wild population and strengthening biodiversity conservation by education and research.

5. Objective

The Zoological Park is striving for the maintenance of ecological balance in the Eastern Himalayas with the following objectives:

- 1) Ex-situ Conservation & Captive breeding of endangered Himalayan animal species.
- 2) Educating, motivating and initiating awareness campaign among the local people as well as the visitors on the importance of conservation of Himalayan eco-system.
- 3) Initiating applied research on animal biology, behaviour and health care.

6. About us

| S.No. | Particulars | Information |
|--|-----------------------|--|
| Basic Information about the Zoo | | |
| 1 | Name of the Zoo | Padmaja Naidu Himalayan Zoological Park. |
| 2 | Year of Establishment | 14 th August, 1958 |
| 3 | Address of the Zoo | Padmaja Naidu Himalayan Zoological Park, Jawhar Parbat (West), Dist Darjeeling, 734101 |
| 4 | State | West Bengal. |
| 5 | Telephone Number | 0354-2253709/2254250 |
| 6 | Fax Number | 0354-2252522 |
| 7 | E-mail address | pnhzp@yahoo.com |

| S.No. | Particulars | Information |
|-------|-------------------------------------|--|
| 8 | Website | www.pnhzp.gov.in |
| 9 | Distance from nearest | <p>Airport: Bagdogra` International Airport: 67 kms</p> <p data-bbox="1234 549 1973 580">Railway Station:New Jalpaiguri Railway Station: 73.8 Kms</p> <p data-bbox="1234 667 1951 699">Bus Stand: Tenzing Norgay Bus Stand, Siliguri: 64.1 kms</p> <p data-bbox="1234 756 1592 788">Darjeeling bus stand: 2 kms</p> |
| 11 | Category of zoo | Medium |
| 12 | Area (in Hectares) | <p>Main Zoo including old breeding Centre -27.341 hectares</p> <p>Conservation Breeding Centre for Herbivores and Pheasants, Dow Hill, Kurseong- 4.65 hectares</p> <p>Conservation Breeding Centre for Red Panda and Snow leopard, Topkeydara, 3rd Mile- 5 hectares</p> |
| 13 | Number of Visitors (Financial Year) | <p>Adult : -</p> <p>Children : -</p> |

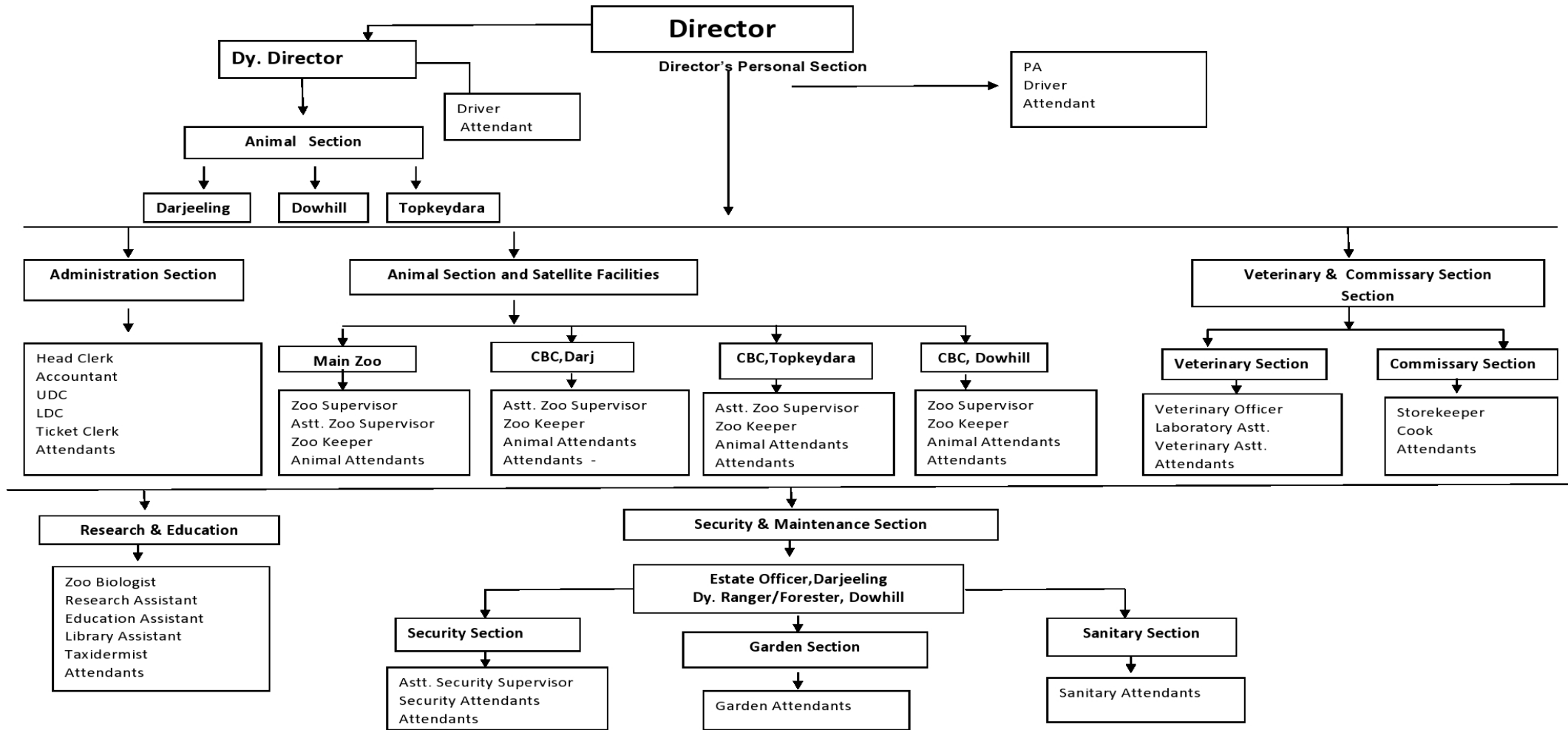
| S.No. | Particulars | Information |
|--|--|---|
| | | Total Indian : 7,70,182 Total Foreigners :10,467 Total Visitors: 7,80649 |
| 14 | Visitors' Facilities Available in Zoo | i. Rain Shelter ii. Resting benches iii. Kiosks iv. Drinking water v. Toilets (Gents and ladies) vi. Child care rooms vii. Canteen viii. Photographers on payment ix. Zoo guides on payment |
| 15 | Weekly Closure Day of the Zoo | Thursday |
| Management Personnel of the zoo | | |
| 16 | Name with designation of the Officer in-charge | Shri Piar Chand, IFS (1.04.18-16.08.2018) Shri Rajendra Jakher, IFS (16.08.2018 onwards) |
| | Name of the Veterinary Officer | Dr Uttam Mani Pradhan (1.04.18-16.08.2018) Dr Joy Dey (16.08.2018 onwards) |
| | Name of the Curator | |

| S.No. | Particulars | Information |
|-----------------------------|--|--|
| | Name of the Biologist | Ms. Upashna Rai |
| | Name of the Education Officer/ Assistant | Ms. Pranita Gupta |
| | Name of the Compounder/ Lab Assistant | Compounder: Shri Pradip Singh/Lab Assistant: Shri. Vikash Chettri |
| Owner / Operator of the Zoo | | |
| 17 | Name of the Operator | i. Principal Secretary, Department of Forest, Govt.of West Bengal. ii. Member Secretary, West BengalZoo Authority. |
| 18 | Address of the Operator | Aranya Bhavan, Block-LA, 10-A, Sector-III, Salt Lake, Kolkata-700106 |
| 19 | Contact details/Phone number of Operator | Department of Forest, Govt. of West Bengal: 033 2335 7751 West Bengal Zoo Authority:033-23355010 |
| 20 | E-mail address of Operator | Department of Forest, Govt.of West Bengal: micforest@wb.gov.in West Bengal Zoo Authority: mswbza@gmail.com |

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

7. Organizational Chart

PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK, DARJEELING.



8. Human Resources

The number of post sanctioned in the 9th Governing Body Meeting was 53 and in the 15th Governing Body Meeting one post of Sub Assistant Engineer was approved.

Manpower of the Zoo

| Sl.No. | Designation | Number of Sanctioned Posts | Names of the incumbent |
|--------|---|----------------------------|---|
| | Director | 1 | Shri Piar Chand, IFS (1.04.18-16.08.2018) Shri Rajendra Jakher, IFS (16.08.2018 onwards) |
| | Assistant Director | 1 | |
| | Veterinary Officer | 1 | Dr Uttam Mani Pradhan (1.04.18-16.08.2018) Dr Joy Dey (16.08.2018 onwards) |
| | Zoo Biologist | 1 | Mrs Upashna Rai * |
| | Sub Assistant Engineer (civil) | 1 | Mr Saurav Sharma * |
| | Zoo Supervisor 1. PNHZ Darjeeling 2. Dow hill | 2 | Mr Purna Ghissing Mr Arup Chanda *** |
| | Museum Supervisor | 1 | |
| | Estate/ Security Supervisor | 1 | Mr Shiromani Syangden |
| | Research Assistant | 1 | Miss Rohini Chettri * |
| | Education Assistant | 1 | Miss Pranita Gupta * |
| | Library Assistant | 1 | - |
| | Taxidermist | 1 | Mr Sairus Bhaktaraj * |
| | Laboratory Assistant | 1 | Mr Vikash Chettri |
| | Veterinary Assistant | 2 | Mr Pradip Singh |

| | | |
|---|-----------|---|
| Asst. Zoo Supervisor 1. PNHZ-1 2. Old CBC-1 | 2 | Mr Deepak Roka - |
| Asst. Estate/ Security Supervisor | 2 | Mr Siddharth Chettri |
| Gate Keeper | 2 | - |
| Driver | 2 | Mr Elvin Lepcha **** |
| Zookeepers 1. PNHZ Darjeeling -10 2. Old CBC-2 3. CBC Topkeydara-2 4. Dow hill- 2 | 16 | |
| Cook | 2 | Mr Samson Tamang - |
| Head Clerk | 1 | Mrs Karuna Niroula |
| Accountant | 1 | Mrs Sangita Lama |
| PA to Director | 1 | Mrs Mamta Subba |
| Storekeeper | 1 | Mr Ashim Gurung |
| UDC/OA/TA | 2 | Miss Preetika Lakhandri * (TA) Mr Aaseem Z. Ansari ** (TA) |
| LDC | 4 | Mr Gopal Pradhan Mrs Ranju Gurung |
| Ticket Clerk | 2 | Mr Mir Tshering Tamang Mr Amit Pradhan * |
| Total Permanent | 54 | |
| Support Staff (on Contract): a) Security | 30 | 16* |

| | | | |
|--|---|------------|--|
| | 1. PNHZP -20 2. Old CBC-2 3. Topkeydara-4 4. Dow hill- 4 | | PNHZP -11 Topkey-3 Dowhill- 3 +15**+(extra 1**)engaged |
| | b) Sanitation | 10 | PNHZP-3 Permanent + PNHZP-5 ** |
| | c) Garden attendant | 10 | 3** |
| | d) Attendants | 14 | PNHZP-2 Permanent + 2 **** |
| | e) Animal Attendants 1. PNHZP -10 2. Old CBC-2 3. Topkeydara-2 4. Dow hill- 2 | 16 | PNHZP-11** Old CBC-1** Topkey-3** Dowhill-4** (extra 3** engaged) |
| | Total Contractual | 80 | |
| | TOTAL (Sanctioned post + contractual) | 134 | |

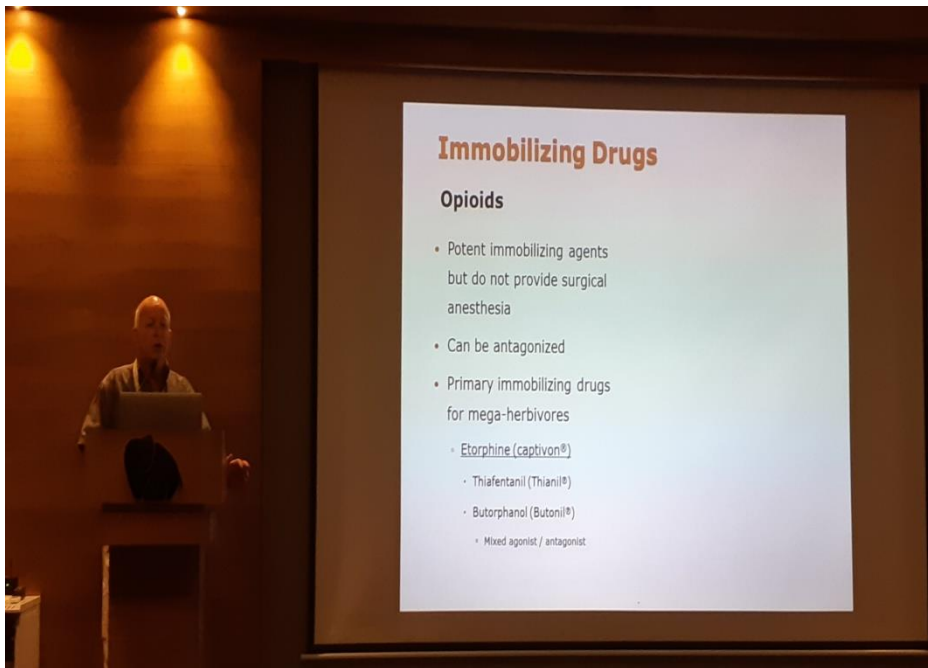
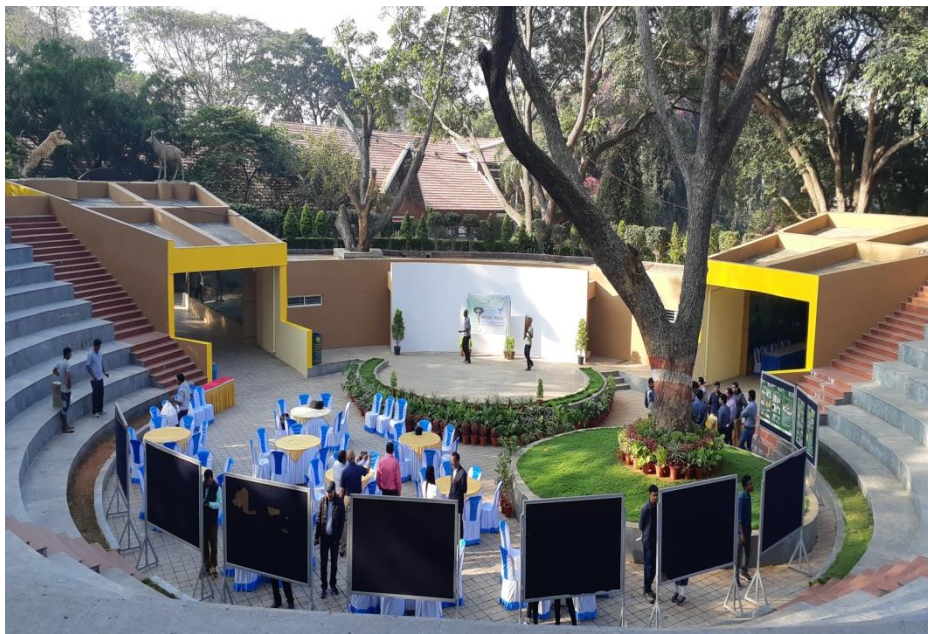
- *Outsourced through WEBEL
- **Outsourced through labor contractor
- *** direct contract
- **** CDL

9. Capacity Building of zoo personnel

| Sl.No. | Name and designation of the zoo personnel | Subject matter of Training | Period of Training | Name of the Institution where the Training attended |
|---------------|--|--|---|--|
| 1 | Shri Rajendra Jakher, IFS, Director, PNHZ Park | Annual Zoo Director's Conference | 12th to 15th November 2019. | Nawab Wazid Ali Shah Zoological Garden, Lucknow |
| 2 | Mr Neepan Tamang, Zookeeper, PNHZ Park | Zoo Keeper Training | 17th to 21st December 2018 | Bhagwan Birsa Biological Park, Ranchi |
| 3 | Dr Joy Dey, Assistant Director cum Veterinary Officer | Indian Zoo Veterinarians | 7 th to 9 th January, 2019 | Shri Chamarajendra Zoological Garden, Mysore |
| 4 | Mr Neepen Tamang, Mr Binod Subba and Mr Bidhan Tamang, Zookeeper, PNHZ Park | Chemical restraint of Wild Animals | 22 nd and 23 rd January, 2019 | North Bengal Wild Animal Park, Siliguri |
| 5 | Mr Neepan Tamang, Zookeeper, PNHZ Park and Mr Bidhan Tamang Zookeeper, PNHZ Park | Technique of capturing of deer and other animals | 28 th and 29 th March, 2019 | Zoological Garden, Alipore Kolkata |



Annual conference of Indian Zoo from 12th to 15th November 2019 at. Nawab Wazid Ali Shah Zoological Garden, Lucknow



Training for Indian Zoo Veterinarians from 7th to 9th January, 2019 at Shri Chamarajendra Zoological Garden, Mysore



Chemical restraint of Wild Animals from 22nd to 23rd January, 2019 at North Bengal Wild Animal Park, Siliguri



Technique of capturing of deer and other animals from 28th and 29th March, 2019 at Zoological Garden, Alipore

Zoo Keeper Training from 17th to 21st Dec, 2018 at Bhagwan Birsa Biological Park, Ranchi

10. Zoo Advisory Committee –

- a. Date of constitution
- b. Members
- c. Dates on which Meetings held during the year

11. Health Advisory Committee–

- a. Date of constitution – 07.03.2018
- b. Members

| SI No | Name | Designation |
|-------|--|-------------|
| 1. | Dr Basudeb Maity Joint Director, ARD IAH & VB (R&T) Belachia, Kolkata-37 | Chairman |
| 2. | Dr. Joyjit Mitra, Specialist (Sero-Epidemiology) RDDDL(ER),IAH & VB, Belachia, Kolkata-37 | Member |
| 3. | Dr Debasish Chatterjee, Asst. Directo, ARD(Vety) (Disease Investigation),IAH7VB,Belachia,Kolkata-37 | Member |
| | Dr Prology Mandal, Asst. Director, ARD (Vety) Belachia,Kolkata-37 | Member |

- c. Dates on which Meetings held during the year

The members of the Health Advisory Committee visited PNHZ Park on 14.09.2018 to monitor the Compliance of prescribed Health Care Standards.

12. Statement of income and expenditure of the Zoo

| Sl.No. | Year (2018-19) | Source of fund | Receipt in Rupees | | Expenditure in Rupees | |
|--------|---|--|-------------------|-------------|-----------------------|-------------|
| | | | Non-Plan | Plan | Non-Plan | Plan |
| 1 | Grant in aids (Non Plan) | Deptt. Of Forest, Govt. of West Bengal through West Bengal Zoo Authority | 5,25,00,000 | | 5,25,00,000 | |
| 3 | Grant in aids (Research Working Plan) | West Bengal Zoo Authority | 16,64,672 | | 15,36,427 | |
| 4 | Grant in aids (Foreign Contribution Shri Piar Chand, IFS) | West Bengal Zoo Authority | 10,22,656 | | 10,22,656 | |
| 5 | Grant in aids (Plan) | West Bengal Zoo Authority | | 1,25,77,644 | | 1,23,97,073 |
| | Gate Fee Collection: | | | | | |
| | a) Zoo Ticket | | 2,78,29,180 | | | |
| | b) Zoo Camera | | 34,946 | | | |
| | c) Animal Adoption | | 1,70,000 | | | |

| | | | | | | |
|---|--------------------------|--|----------|--|--|--|
| | d) Guest House | | 12,200 | | | |
| | e) Souvenir Shop | | 2,44,145 | | | |
| | f) Fee from rental store | | 1,84,240 | | | |
| Total Budget Rs Non Plan+ Plan= Rs 8,36,62,039+ Rs 1,25,77,644= Rs 9,62,39,683 | | | | | | |

13. Daily feed Schedule of animals

| Sl. No | Species | Feed item | Quantity | | Day of fasting |
|--------|--|--|--|---|-------------------------|
| | | | Winter | Summer | |
| | Mammals | | | | |
| 1 | Red Panda (<i>Ailurus fulgens</i>) | i. Egg ii. Banana iii. Apple iv. Honey v. Milk vi. Bamboo leaves | 1 pc 2 pcs 500 gms 50 ml 500 ml 4 kgs | 1 pc 2 pcs 500 gms 100 ml 500 ml 4kgs | No fasting day observed |
| 2 | Snow Leopard (<i>Uncia uncia</i>) | i. Beef ii. Chicken iii. Mutton | 3kgs 3kgs 3kgs | 3kgs 3kgs 3kgs | Thursdays |
| 3 | Himalayan Wolf (<i>Canis himalayensis</i>) | i. Beef ii. Chicken | 1.5 kgs 1.5 kgs | 1.5 kgs 1.5 kgs | Thursdays |
| 4 | Himalayan Tahr (<i>Hemitragus jemlachius</i>) | i. Crushed Maize ii. Gram iii. Crushed wheat iv. Barley v. Salt vi. Wheat Bran vii. Green fodder viii. Molasses ix. Turmeric x. Pulses (Mung, Musur soaked) | 500 gms 250 gms 500 gms 250 gms 20 gms 1 kgs 20 kgs 30 gms 350 gms | 500 gms 250 gms 500 gms 250 gms 20 gms 1 kgs 20 kgs 800 gms 30 gms 350 gms | No fasting day observed |

| | | | | | |
|----|--|--|--|---|-------------------------|
| 5. | Himalayan Goral (<i>Naemorhaedus goral</i>) | i. Crushed Maize ii. Gram iii. Crushed wheat iv. Barley v. Salt vi. Wheat Bran vii. Green fodder viii. Molasses ix. Turmeric x. Pulses (Mung, Musur soaked) | 500 gms 200 gms 500 gms 200 gms 20 gms 500 gms 15 kgs 30 gms 350 gms | 500 gms 200 gms 500 gms 200 gms 20 gms 500 gms 15 kgs 800 gms 30 gms 350 gms | No fasting day observed |
| 6. | Markhor (<i>Capra falconeri</i>) | i. Crushed Maize ii. Gram iii. Crushed wheat iv. Barley v. Salt vi. Wheat Bran vii. Green fodder viii. Molasses ix. Turmeric x. Pulses (Mung, Musur soaked) | 500 gms 250 gms 500 gms 500 gms 20 gms 500 gms 20 kgs 30 gms 350 gms | 500 gms 250 gms 500 gms 500 gms 20 gms 500 gms 20 kgs 800 gms 30 gms 350 gms | No fasting day observed |
| 7. | Barking Deer (<i>Muntiacus muntjac</i>) | i. Crushed Maize ii. Gram iii. Crushed wheat iv. Barley v. Salt vi. Wheat Bran vii. Green fodder viii. Molasses | 500 gms 200 gms 500 gms 250 gms 20 gms 500 gms 15 kgs | 500 gms 200 gms 500 gms 250 gms 20 gms 500 gms 15 kgs 800 gms | No fasting day observed |

| | | | | | |
|-----|--|--|--|---|-------------------------|
| | | ix.Turmeric x.Pulses (Mung, Musur soaked) | 30 gms 300 gms | 30 gms 300 gms | |
| 8 | Blue Sheep (<i>Pseudois nayaur</i>) | i.Crushed Maize ii.Gram iii.Crushed wheat iv.Barley v.Salt vi.Wheat Bran vii.Green fodder viii.Molasses ix.Turmeric x.Pulses (Mung, Musur soaked) | 500 gms 200 gms 500 gms 250 gms 20 gms 500 gms 15 kgs 30 gms 350 gms | 500 gms 200 gms 500 gms 250 gms 20 gms 500 gms 15 kgs 800 gms 30 gms 350 gms | No fasting day observed |
| 9. | Sambar Deer (<i>Rusa unicolor</i>) | i.Crushed Maize ii.Gram iii.Crushed wheat iv.Barley v.Salt vi.Wheat Bran vii.Green fodder viii.Molasses ix.Turmeric x.Pulses (Mung, Musur soaked) | 500 gms 450 gms 500 gms 450 gms 20 gms 2 kgs 30 kgs 30 gms 350 gms | 500 gms 450 gms 500 gms 450 gms 20 gms 2 kgs 30 kgs 800 gms 30 gms 350 gms | No fasting day observed |
| 10. | Yak (<i>Bos grunniens</i>) | i.Crushed Maize ii.Gram iii.Crushed wheat iv.Barley | 500 gms 450 gms 500 gms 450 gms | 500 gms 450 gms 500 gms 450 gms | |

| | | | | | |
|-----|---|---|--|---|-----------|
| | | v.Salt vi.Wheat Bran vii.Green fodder viii.Molasses ix.Turmeric x.Pulses (Mung, Musur soaked) | 20 gms 2 kgs 30 kgs 30 gms 350 gms | 20 gms 2 kgs 30 kgs 800 gms 30 gms 350 gms | |
| 11. | Mishmi Takin (<i>Budorcas taxicolor taxicolor</i>) | i.Crushed Maize ii.Gram iii.Crushed wheat iv. Barley v. Salt vi. Wheat Bran vii. Green fodder viii. Molasses ix.Turmeric x.Pulses (Mung, Musur soaked) | 400 gms 350 gms 300 gms 400 gms 20 gms 1500 gms 40 kgs 50 gms 2000 gms | 400 gms 350 gms 300 gms 400 gms 20 gms 1500 gms 40 kgs 300 gms 50 gms 2000 gms | |
| 12. | Royal Bengal Tiger (<i>Panthera tigris</i>) | Beef | 14 kgs | 14 kgs | Thursdays |
| 13. | Common Leopard (<i>Panther pardus</i>) | i.Beef ii.Chicken iii.Mutton | 3.5kgs 3.5kgs 3.5kgs | 3.5kgs 3.5kgs 3.5kgs | |
| 14 | Clouded Leopard (<i>Neofelis nebulosa</i>) | i.Beef ii.Chicken iii.Mutton | 2.5kgs 2.5kgs 2.5kgs | 2.5kgs 2.5kgs 2.5kgs | Thursdays |

| | | | | | |
|----|--|---|---|--|-----------|
| 15 | Asiatic Black Bear (<i>Ursus thibetanus</i>) | i.Wheat chappati ii.Rice iii.Soup (beef/ mutton/ chicken) iv.Sattu balls v.Soaked, boiled and crushed chana vi.Vegetables like cabbage, potato, tomato, cucumber, raddish, carrot, turnip, peas, pumpkin, squash, tubers(locally available), maize, celery, all forms of leafy vegetables vii.Fruits like guava, apple (in less quantity), sugarcane, grapes, whole watermelon, lemon (locally available) . viii.Honey ix.Milk x.Molasses xi.Boiled eggs | 7 pcs 250 gms 1 lts 2 pcs 250 gms 1 kg 500-600 gms 250 ml 500 ml 250 gms 2pcs | 7 pcs 250 gms 1 lts 2 pcs 250 gms 1kg 500-600 gms 250 ml 500 ml 300 gms 2pcs | |
| 16 | Jackal (<i>Canis aures</i>) | i.Beef ii.Chicken | 1 kg 1kg | 1 kg 1kg | Thursdays |
| 17 | Leopard Cat (<i>Prionailurus bengalensis</i>) | i.Beef ii.Chicken iii.Mutton | 500 gms 500 gms 800 gms | 500 gms 500 gms 800 gms | Thursdays |
| 18 | Himalayan Palm Civet (<i>Paguma larvata</i>) | i.Banana ii.Apple | 200-400 gms 200-400 gms | 200-400 gms 200-400 gms | Thursdays |

| | | | | | |
|----|--|---|-------------|-------------|------------|
| | | iii.Cardomom | 50 gms | 50 gms | |
| | | iv.Mutton with mutton heart | 150 gms | 150gms | |
| 19 | Asian Palm Civet (<i>Prionailurus hermaphrodites</i>) | i.Banana | 200-400 gms | 200-400 gms | Thursdays |
| | | ii.Apple | 200-400 gms | 200-400 gms | |
| | | iii.Beef | 150 gms | 150 gms | |
| | | iv.Mutton | 150 gms | 150gms | |
| 20 | Common Grey langur (<i>Semnopithecus entellus</i>) | i.Groundnuts | 200gms | 200 gms | No fasting |
| | | ii.Potato/tubers | 100 gms | 100gms | |
| | | ii.Green leafy vegetables, bamboo, fodder leaves. | 300 gms | 300 gms | |
| | | iv.Boiled eggs | 1pc | 1pc | |
| | | v.Apple | 200-300 gms | 200-300 gms | |
| 21 | Slow loris (<i>Nycticebus bengalensis</i>) | i.Egg | 1pc | 1pc | No fasting |
| | | ii.Banana with other seasonal fruits | 70 gms | 70 gms | |
| | | iii.Mutton | 50 gms | 50 gms | |
| 22 | Jungle cat (<i>Felis chaus</i>) | i.Mutton | 750 gms | 750 gms | Thursdays |
| | | ii.Beef | 750 gms | 750 gms | |
| | | iii.Chicken | 750 gms | 750 gms | |
| | Pheasants Total species | | | | |
| 23 | Himalayan Monal (<i>Lophophorus</i>) | i.Crushed maize | 50 gms | 50 gms | No fasting |
| | | ii.Onion | 10 gms | 10 gms | |

| | | | | | |
|--|---|---------|---------|--|--|
| <i>impejanus</i>), Cheer Pheasant (<i>Catreus wallichii</i>), Temminck's Tragopan (<i>Tragopan temminicki</i>), Grey Peacock Pheasant (<i>Polypectron bicalcaratum</i>), Red Jungle Fowl (<i>Gallus gallus</i>), Kaleej Pheasant (<i>Lophura leucomelana</i>), Golden Pheasant (<i>Chrysolophus pictus</i>), Reeves Pheasant (<i>Syrmaticus reevesii</i>), Silver Pheasant (<i>Lophura nycthemea</i>) and Lady Amhrest (<i>Chrysolophus amherstia</i>). | iii.Green & leafy vegetables (lettuce, cabbage, leaves of raddish, carrots, citrus fruits, turnip, palak, raya, simraya, raddish and carrot leaves kumra etc. | 100 gms | 100 gms | | |
| | iv.Marble chips | 10 gms | 10 gms | | |
| | v.Mutton heart | 20 gms | 20 gms | | |
| | vi.Wheat & paddy husk | 50 gms | 50 gms | | |
| | vii.Boiled egg with shell | 1 pc | 1pc | | |
| | viii.Sattu Balls | 20 gms | 20 gms | | |
| | ix.Eggs | 1 pc | 1 pc | | |
| | Exotic Birds | | | | |

| | | | | | |
|----|--|--|---|---|-------------------|
| | <p>Red and Blue Macaw (<i>Ares chloropterus</i>), Blue and Gold Macaw (<i>Ares chloropterus</i>), Bare Eyed Cockatoo (<i>Cacotua sanguine</i>), Sulphur Crested Cockatoo (<i>Cacotuasulphur ea</i>), African Grey parrot (<i>Paittacuseritha cus</i>), Cocktaiels (<i>Nymphicusholla ndicus</i>), Rose Breasted cockatoo (<i>Elophusroseicap illa</i>) and Turaco (<i>Tauraco</i>)</p> | <p>i. Groundnuts, soaked gram/pulses ii. Tomato (Solid) iii. Green Chilly (Solid) iv. Crushed Maize v. Green & leafy vegetables (seasonally available) vi. Marble chips</p> | <p>25 gms 25 gms 50 gms 50 gms 50 gms 10 gms</p> | <p>25 gms 25 gms 50 gms 50 gms 50 gms 10 gms</p> | <p>No fasting</p> |
| 24 | Reptiles | | | | |

| | | | | | |
|--|--|--|------------------------|------------------------|------------|
| | Indian Rock Python(<i>Python molurus</i>), Indian Sand Boa (<i>Erynxjohnii</i>), Rat Snake (<i>Ptyas mucosa</i>) and Russell's Viper (<i>Daboia russelii</i>) | i.1 day old chick after every 10 days ii.White mice after every 10 days | 2 chicks 2 mice | 2 chicks 2 mice | No fasting |
| | Checkered Keelback(<i>Xenoc hroptis piscator</i>) | Fish after every 3-4 days | 250gms | 250gms | No fasting |
| | Elongated Tortoise (<i>Indotestudo elongate</i>) | i.Apple ii.Banana | 100 gms 100 gms | 100 gms 100 gms | No fasting |
| | Bengal Monitor Lizard (<i>Varanus bengalensis</i>) | i.Chicken ii.Fish | 500 gms 500 gms | 500 gms 500 gms | No fasting |

14. Vaccination Schedule of animals

| Sl.No | Species | Disease vaccinated for | Name of the Vaccine and dosage/ quantity used | Periodicity | Remarks |
|-------|----------------------|--|---|-------------|---------|
| 1. | SNOW LEOPARD | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 2. | COMMON LEOPARD | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 3. | CLOUDED LEOPARD | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 4. | LEOPARD CAT | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 5. | JUNGLE CAT | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 6. | ASIAN PALM CIVET | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 7. | HIMALAYAN PALM CIVET | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |

| | | | | | |
|-----|--------------------|---|---------------------------------|--------|--|
| 8. | ROYAL BENGAL TIGER | The vaccine against feline panleukopenia, herpesviral and caliciviral infection and rabies | INJ.BIOFEL PCHR – 1 ML | 1 YEAR | |
| 9. | ROYAL BENGAL TIGER | The vaccine against CANNINE DISTEMPER | INJ . CANNINE DISTEMPER VACCINE | 1 YEAR | |
| 10. | HIMALAYAN WOLF | Live Canine Distemper, Adenovirus (CAV-2), Parvovirus, Parainfluenza and Inactivated Adenovirus (CAV-1), Leptospirosis Vaccine | Inj.Megavac-7 | 1 YEAR | |
| | | RABIES | Inj.Raksharab | 1 YEAR | |
| 11. | JACKAL | Live Canine Distemper, Adenovirus (CAV-2), Parvovirus, Parainfluenza and Inactivated Adenovirus (CAV-1), Leptospirosis Vaccine. | Inj.Megavac-7 | 1 YEAR | |
| | | RABIES | Inj.Raksharab | 1 YEAR | |

15. De-worming Schedule of animals

| SI No | Species | Drug used | Month |
|-------|-----------------------------|----------------------|----------|
| 1. | All red panda | Tab.Panacur 150 | April |
| 2. | All snow leopard | Tab.Easypet | April |
| 3. | All common /clouded leopard | Tab.Easypet | April |
| 4. | All Lesser carnivorous | Tab.Panacur 150 mg | April |
| 5. | All Pheasant / birds | Piperazine citrate | April |
| 6. | All bear | Oxfenvet – 2200 mg | April |
| 7. | Tiger | Oxfenvet – 2200 mg | April |
| 8. | All herbivorous | Tab.Easypet | April |
| 9. | Wolves / jackal | Tab.Easypet | April |
| 10. | All langur | Tab.Panacur 150 mg | April |
| 11. | All red panda | Tab.Panacur 150 | July |
| 12. | All snow leopard | Tab. Oxfenvet – 2200 | July |
| 13. | All common /clouded leopard | Tab.Easypet | July |
| 14. | All Lesser carnivorous | Tab.Panacur 150 mg | July |
| 15. | All Pheasant / birds | Albendazole | July |
| 16. | All bear | Bolfentas 1.5 g | July |
| 17. | Tiger | Bolfentas 1.5 g | July |
| 18. | All herbivorous | Tab.Easypet | July |
| 19. | Wolves / jackal | Tab.Easypet | July |
| 20. | All langur | Tab.Panacur 150 mg | July |
| 21. | All red panda | Tab.Panacur 150 | November |
| 22. | All snow leopard | Tab.Zeebee | November |
| 23. | All common /clouded leopard | Tab.zeebee | November |

| | | | |
|-----|-----------------------------|--------------------|----------|
| 24. | All Lesser carnivorous | Tab.Zeebee | November |
| 25. | All Pheasant / birds | Albomer | November |
| 26. | All bear | Bolfentas 1.5 g | November |
| 27. | Tiger | Oxfenvet – 2200 mg | November |
| 28. | All herbivorous | Tab.Easypet | November |
| 29. | Wolves / jackal | Tab.Zeebee | November |
| 30. | All langur | Tab.Zeebee | November |
| 31. | All red panda | Tab.Pyrate fort | January |
| 32. | All snow leopard | Oxfenvet – 2200 | January |
| 33. | All common /clouded leopard | Bol.Fantas 1.5 g | January |
| 34. | All Lesser carnivorous | Tab.Zeebee | January |
| 35. | All Pheasant / birds | Piperazine citrate | January |
| 36. | All bear | Oxfenvet – 2200 mg | January |
| 37. | Tiger | Tab.Pyrate fort | January |
| 38. | All herbivorous | Oxfenvet – 2200 mg | January |
| 39. | Wolves / jackal | Bol.Fantas 1.5 g | January |
| 40. | All langur | Tab.Zeebee | January |

16. Disinfection Schedule

| SI.No. | Species | Type of enclosure | Disinfectant used and method | Frequency of disinfection |
|--------|-------------|-------------------|---|--|
| 1 | All species | open | <ul style="list-style-type: none"> a) Formalin b) Sodium hypochlorate 2% c) Khorsolin 10 ml X 1 litre. d) Cetradine 10 mlX 1 litre | After every fortnight |
| 2 | All species | Night Shelters | <ul style="list-style-type: none"> a) a) Khorsolin 10 ml X 1 litre. b) Cetradine 10 mlX 1 litre c) Potassium permanganate d) Savlon e) Flame disinfection using LPG. | <p>Daily</p> <p>Used alternately with Khorsolin</p> <p>Daiily</p> <p>Daily</p> |

17. Health Check-up of employees for zoonotic diseases

| Sl.No | Name | Designation | Date of Health Check up | Findings of Health Check up |
|-------|-----------------------|------------------------------------|-------------------------|-----------------------------|
| 1 | Mr Shiromani Syangden | Estate / Security Supervisor | 14.06.2018 | No major ailments observed |
| 2 | Shri.Siddarth Chettri | Asst. Estate / Security Supervisor | 14.06.2018 | No major ailments observed |
| 3 | Shri.Pradeep Kr.Singh | Veterinary Assistant | 14.06.2018 | No major ailments observed |
| 4 | Shri.Vikash Chhetri | Laboratory Assistant | 14.06.2018 | No major ailments observed |
| 5 | Shri.Ruden Lepcha | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 6 | Shri.Purna Ghising | Zoo Supervisor | 14.06.2018 | No major ailments observed |
| 7 | Shri.Deepak Roka | Asst. Zoo Supervisor | 14.06.2018 | No major ailments observed |
| 8 | Shri.Nima Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 9 | Shri.Amar Chettri | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 10 | Shri.Umesh Rai | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 11 | Shri.Nippan Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 12 | Shri.Budha Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 13 | Shri.Rakesh Sundas | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 14 | Shri.Deepan Gurung | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 15 | Shri.Sujit Rai | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 16 | Shri.Aswin Gurung | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 17 | Shri.Susant Chettri | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 18 | Shri.Arjun Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 19 | Shri.Sohit Pahari | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 20 | Shri.Lakpha Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 21 | Shri.Rinchan Lama | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 22 | Shri.Rajesh Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |

| | | | | |
|----|-------------------------|---------------------|------------|----------------------------|
| 23 | Shri.Arbin Tamang | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 24 | Shri.Binod Subba | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 25 | Miss.Pranita Gupta | Education Assistant | 14.06.2018 | No major ailments observed |
| 26 | Miss Rohini Chettri | Research Assistant | 14.06.2018 | No major ailments observed |
| 27 | Shri.Sanil Rai | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 28 | Shri.Dhiraj Thapa | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 29 | Shri.Pawan Lepcha | Zoo Keeper | 14.06.2018 | No major ailments observed |
| 30 | Shri.Simon Gurung | Cook | 14.06.2018 | No major ailments observed |
| 31 | Mrs Mamta Subba | PA to Director | 14.06.2018 | No major ailments observed |
| 32 | MrsRanju Gurung | LDC | 14.06.2018 | No major ailments observed |
| 33 | Mrs Anju Sarwan | Office Attendant | 14.06.2018 | No major ailments observed |
| 34 | Miss Sabita Sunwar | Office Attendant | 14.06.2018 | No major ailments observed |
| 35 | Mr Amit Pradhan | Office Staff | 14.06.2018 | No major ailments observed |
| 36 | Mrs Sangita Lama | Accountant | 14.06.2018 | No major ailments observed |
| 37 | Mrs Karuna Neroula | Head Clerk | 14.06.2018 | No major ailments observed |
| 38 | Miss Preetika Lakhandri | Tally Accountant | 14.06.2018 | No major ailments observed |
| 39 | Mr Subash Sharma | Zoo Keeper | 14.06.2018 | No major ailments observed |

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

| Sl no | Name of work | Date |
|-------|--|------------|
| 1 | Repairing work at Rest house toilet at PNHZ Park | 29-06-2018 |
| 2 | Repair and extension of lesser carnivore night shelter by way of providing double door for safety of Animals and staff at Beat I | 27-09-2018 |
| 3 | Providing caves (two each) for shelter of Snow Leopard at open enclosure at Topkey Dara (enclosure I) | 09-10-2018 |
| 4 | Replacement of roof of incinerator house with provision of drainage at PNHZ Park | 09-10-2018 |
| 5 | Providing Dark room for X-Ray at vet. Hospital | 10-10-2018 |
| 6 | Replacement of old poly carbonate sheet to toughen glass at pheasantry at Beat I | 05-11-2018 |
| 7 | Providing caves (two each) for shelter of Snow Leopard at open enclosures (enclosure II) at CBC Topkey Dara | 14-12-2018 |
| 8 | Soil conservation work at left side of BNHM for protection of the road and stairs leading to BNHM | 14-12-2018 |
| 9 | Protection wall for newly constructed veterinary hospital at PNHZ Park | 14-12-2018 |
| 10 | Construction of RCC water tank for water Harvesting at BNHM under PNHZ Park | 14-12-2018 |
| 11 | Providing entrance porch cum Service Room at BNHM Museum | 14-12-2018 |

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|----|--|------------|
| 12 | Modification of old Tiger open Exhibit in the Display area beside the Asiatic Black Bear night shelter | 14-12-2018 |
| 13 | Providing showcase for display crocodile at BNHM | 20-12-2018 |
| 14 | Providing toughens glass at Bear night shelter sky light | 20-12-2018 |
| 15 | Providing toughens glass at Reptile house sky light | 20-12-2018 |
| 16 | Providing toughened glass at common/Black leopard night shelter sky light | 20-12-2018 |
| 17 | Providing toughened glass at Snow leopard night shelter sky light | 20-12-2018 |
| 18 | Providing toughens glass at wolf night shelter sky light | 20-12-2018 |
| 19 | Addition of New coupe and treatment cell for Lesser carnivores | 10-01-2019 |
| 20 | Protection wall for control of soil erosion along the road to CBC from Black Bear enclosure | 10-01-2019 |
| 21 | Renovation and expansion of keeper's pathway behind Red Panda, Lesser Carnivore and Herbivore exhibit area | 10-01-2019 |
| 22 | Modification of Beat IV Aviary in the display area | 10-01-2019 |
| 23 | Providing squeeze cage for treatment of snow leopard at open enclosure No. 1 at Topkey Dara, CBC | 01-02-2019 |
| 24 | Providing cement concrete to approach path to CBC at Topkey Dara | 04-02-2019 |

19. Education and Awareness programmes during the year

The outreach programme of the Park involves students of all levels including trainees. The programme includes a tour of the park followed by an interactive session where topics such as role and functions of the modern zoo, conservation breeding programmes, environmental issues and the work of the zoo in working towards conserving rare and endangered species are discussed. Educational material regarding information on the housed animals of the park, conservation breeding programmes of the zoo, its biodiversity etc. are distributed to the students along with notebooks and lunches. During the year 2018-2019 the education wing of the Park attended to 2319 students and 263 faculties from 54 institutes

| Date | Name of school/ Training institute/ Colleges/ Universities | Number of students/ trainees | Number of teachers/ instructors | Education incentives |
|-------------|---|-------------------------------------|--|---|
| 08.04.2018 | Central Zoo, Kathmandu, Nepal | 18 | | Education Materials, Visit to Zoo and Interaction |
| 15.04.2018 | Singhania School, Mumbai and St. Josephs School, Darjeeling | 24 | 05 | Education Materials, Visit to Zoo and Interaction |
| 16.04.2018 | Municipal Boys Primary School, Darjeeling | 26 | 13 | Education Materials, Visit to Zoo and Interaction |
| 24.04.2018 | Namchi Government College, Namchi, Sikkim | 50 | 02 | Education Materials, Visit to Zoo and Interaction |
| 05.05.2018 | Tiny Tots School, Kalimpong | 22 | 09 | Education Materials, Visit to Zoo and Interaction |
| 08.05.2018 | Goke High School, Darjeeling | 18 | 02 | Education Materials, Visit to Zoo and Interaction |
| 08.05.2018 | St. Xaviers School. | 33 | 02 | Education material, Visit to Zoo and Interaction |
| 04.06.2018 | Army Public School, Lebong | 50 | 06 | Education material, Visit to Zoo and Interaction |

| | | | | |
|------------|--|----|----|---|
| 06.06.2018 | Nature Study Camp,VigyanPrasar, Dept ofScience and Technology,Govt of India. | 25 | 07 | Education material, Visit to Zoo and Interaction |
| 02.07.2018 | Sarda Vallabh Bhai Patel National Police Academy | 14 | 01 | Education material, Visit to Zoo and Interaction. |
| 16.07.2018 | St. Josephs School,Darjeeling | 99 | 03 | Education material, Visit to Zoo and Interaction |
| 31.08.2018 | Glendale Academy,Darjeeling | 20 | 02 | Education material, Visit to Zoo and Interaction |
| 22.09.2018 | Basic Course, Himalayan Mountaineering Institute | 82 | 0 | Education Materials, Visit to Zoo and Interaction/ Lecture. |
| 25.09.2018 | In service SFS officers/ Sr.FROs, Central Academy Forest Education | 08 | | Education Materials, Visit to Zoo and Interaction |
| 26.09.2018 | Banbole High school | 58 | 03 | Education Materials, Visit to Zoo and Interaction. |
| 27.09.2018 | Forestry Training Centre, Rajabhat khawa | 28 | 02 | Education Materials, Visit to Zoo and Interaction. |
| 28.09.2018 | American international School, Chennai | 12 | 04 | Education Materials, Visit to Zoo, Interaction and Packet lunch |
| 06.10.2018 | Notre Dame Primary School, Kaijalay | 41 | 05 | Education Materials, Visit to Zoo and Interaction |
| 06.10.2018 | Salesian College, Sonada | 19 | 02 | Education Materials, Visit to Zoo and Interaction. |
| 07.10.2018 | Father Lebonde School, Siliguri. | 61 | 08 | Education Materials, Visit to Zoo and Interaction |
| 13.10.2018 | Little Bells School, Darjeeling | 31 | 03 | Education Materials, Visit to Zoo and Interaction/ Lecture |
| 24.10.2018 | HMI Advance Course | 45 | 07 | Education Materials, Visit to Zoo and Interaction |
| 26.10.2018 | HMI Basic Course | 68 | 05 | Education Materials, Visit to Zoo and Interaction |
| 27.10.2018 | Namchi Public School, P.O. Namchi South Sikkim. | 24 | 04 | Education Materials, Visit to Zoo, Interaction and Packet lunch |

| | | | | |
|------------|--|-----|----|---|
| 30.10.2018 | Rhododendroen Integratus Boarding School ,Maneybhanjyang, Darjeeling | 65 | 09 | Education Materials, Visit to Zoo and Interaction |
| 30.10.2018 | R.K.S.P. Boys H.S. School Darjeeling | 31 | 02 | Education Materials. Visit to Zoo and Interaction |
| 31.10.2018 | Bikash Sangh Primary School, Kalimpong | 13 | 09 | Education Materials. Visit to Zoo and Interaction |
| 02.11.2018 | Gyanoday Niketan, Darjeeling | 101 | 09 | Education Materials. Visit to Zoo and Interaction |
| 13.11.2018 | West Bengal Forest School Dowhill Kurseong | 35 | 02 | Education Materials. Visit to Zoo and Interaction |
| 14.11.2018 | Vision Academy Badamtam L.K. Division Lebong Darjeeling | 19 | 03 | Packet lunch, Education Materials. Visit to Zoo and Interaction |
| 14.11.2018 | Pulbazar Junior Basic School, Pulbazar | 10 | 03 | Packet lunch, Education Materials. Visit to Zoo and Interaction |
| 14.11.2018 | Dhajea No. 9 Primary School, Darjeeling | 03 | 02 | Packet lunch, Education Materials. Visit to Zoo and Interaction |
| 14.11.2018 | Dhajea T.E. Primary School, Darjeeling | 05 | 06 | Packet Lunch, Education Materials. Visit to Zoo and Interaction |
| 14.11.2018 | Avongrove T.E. Primary school, Darjeeling | 10 | 08 | Packet lunch, Education Materials. Visit to Zoo and Interaction |
| 14.11.2018 | Dhajea Vidhya Sagar Primary School, Darjeeling | 05 | 05 | Packet lunch, Education Materials. Visit to Zoo and Interaction |
| 17.11.2018 | Loreto Convent Darjeeling | 400 | 10 | Education Materials. Visit to Zoo and Interaction |
| 17.11.2018 | Kanchanjunga Primary school, Darjeeling | 19 | 10 | Education Materials. Visit to Zoo and Interaction |
| 17.11.2018 | Holy Angels School, Darjeeling. | 27 | 04 | Education Materials. Visit to Zoo and Interaction |

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|------------|--|----|----|---|
| 18.11.2018 | Galaxy English School, Darjeeling | 37 | 07 | Education Materials, Packet lunch, Visit to Zoo and Interaction |
| 21.11.2018 | Kumudini Homes. Kalimpong. | 32 | 02 | Education Materials, Visit to Zoo and Interaction |
| 28.11.2018 | HMI Basic course | 80 | 05 | Education Materials, Visit to Zoo and Interaction |
| 03.12.2018 | Anulia High School | 44 | 10 | Education Materials, Visit to Zoo and Interaction |
| 12.12.2018 | Pul-KanyaPathsala, Pulbazar, Darjeeling | 10 | 10 | Education Materials, Visit to Zoo and Interaction |
| 15.12.2018 | Karnataka forest Academy, Dharwad, Karnataka, India | 45 | 02 | Education Materials, Visit to Zoo and Interaction |
| 16.12.2018 | Goreto Gaan Primary School Hum Busty, P.O. Takdha , Darjeeling | 31 | 12 | Education Materials, Visit to Zoo and Interaction |
| 17.12.2018 | Holy Cross Higher Secondary School, Dimapur, Nagaland. | 53 | 05 | Education Materials, Visit to Zoo and Interaction |
| 09.01.2019 | Vidyasagar University, Midnapore | 48 | 02 | Education Materials, Visit to Zoo and Interaction |
| 23.01.2019 | Subash Chandra Bose Centenary College, Mushdabad | 28 | 07 | Education Materials, Visit to Zoo and Interaction |
| 28.01.2019 | St. Josephs school< North Point. (Winter camp) | 40 | | Education Materials, Visit to Zoo and Interaction |
| 29.01.2019 | St. Josephs School North Point (Winter camp) | 40 | | Education Materials, Visit to Zoo and Interaction |
| 24.02.2019 | Karnataka State Forest Academy, Dharward Karnataka | 43 | 02 | Education Materials, Visit to Zoo, Refreshments and Interaction |

| | | | | |
|------------|---|----|----|---|
| 09.03.2019 | H.M.I Basic Course | 30 | 2 | Education Materials, Visit to Zoo and Interaction |
| 15.03.2019 | Odisha Forest ranger College, Angul, Odisha | 48 | 02 | Education Materials, Visit to Zoo, Refreshments and Interaction |
| 16.03.2019 | Central School for Tibetans, Darjeeling | 42 | 07 | Education Materials, Visit to Zoo and Interaction |
| 17.03.2019 | Odisha Forest ranger College, Angul, Odisha | 49 | 01 | Education Materials, Visit to Zoo, Refreshments and Interaction |



Educational tour of Central Zoo, Kathmandu, Nepal



Educational Tour of Singhania School, Mumbai and St Joseph's School, Darjeeling



Educational Tour of Municipal Boys Primary school, Darjeeling



Educational tour of Namchi Government College, Sikkim



Educational Tour of Tiny Tots School, Kalimpong



15
Educational tour of Goke High School, Darjeeling



Educational tour of St Xavier's School



Educational tour of Army public School,



Educational tour of Nature Study Camp



Sarda Vallabh Bhai Patel National Police Academy



Educational tour Of St Josephs School, Darjeeling



Educational Tour of Glendale Academy, Darjeeling



Educational Tour of Forestry Training Centre, Rajabhatkhawa





Educational Tour of Basic Course, HMI



Educational Tour of Notre Dame Primary School, Kaijalay



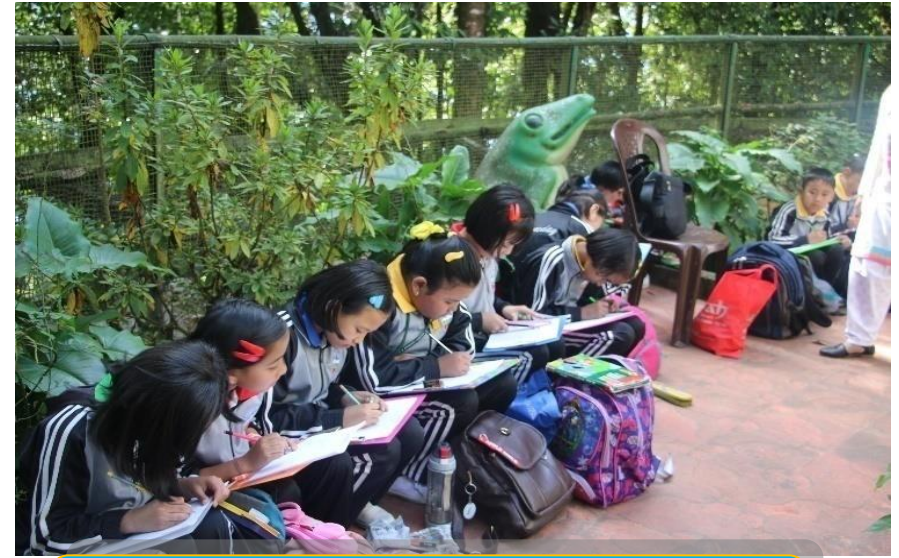
Educational tour of R.K.S.P. Boys H.S. School Darjeeling



Educational Tour of Rhododendroen Integratus Boarding School, Maneybhanjyang



Educational tour of Vision Academy Badamtam L.K. Division Lebong Darjeeling



Educational Tour of Gyanoday Niketan, Darjeeling



Educational Tour of Loreto Convent, Darjeeling



Educational Tour of 60th batch Forest Guard Trainees, West Bengal Forest School, Dowhill



Educational Tour of Dhajea No. 9 Primary School, Dhajea T.E. Primary School, Avongrove T.E. Primary school, Dhajea Vidhya Sagar Primary School, Darjeeling



Educational Tour of Basic Course of Himalayan Mountaineering Institute Mountaineering Institute,



Educational Tour of Basic Course of Himalayan Mountaineering Institute Mountaineering Institute, Darjeeling



Educational Tour of Anulia High School



Educational Tour of Holy Cross Higher Secondary School, Dimapur, Nagaland.



Educational Tour of trainees from CASFO, Karnataka Forest Academy



20. Important Events and happenings

1. EARTH DAY CELEBRATION-2018

Earth Day is held every year on April 22nd. It is a day of political action and civic participation. Earth Day Network, the organization that leads Earth Day worldwide, has chosen as the theme for 2018 to End Plastic Pollution, including creating support for a global effort to eliminate primarily single-use plastics along with global regulation for the disposal of plastics. EDN is educating millions of people about the health and other risks associated with the use and disposal of plastics, including pollution of our oceans, water, and wildlife, and about the growing body of evidence that plastic waste is creating serious global problems. Their goals include ending single-use plastics, promoting alternatives to fossil fuel-based materials, promoting 100 percent recycling of plastics, corporate and government accountability and changing human behaviour concerning plastics.

Padmaja Naidu Himalayan Zoological Park celebrated Earth Day 2018 on 25th April 2018 by inviting local schools from Darjeeling to a day of bird watching and experiential story telling.

The event was attended by 15 schools including 68 students from classes IV-VI and 18 teachers.

| S.No | Name of School | No of students | No of teachers |
|------|--------------------------------------|----------------|----------------|
| 1. | St. Michaels Higher Secondary School | 3 | 1 |
| 2. | St. Teresa's Higher Secondary School | 3 | 1 |
| 3. | St. Robert's Higher Secondary School | 3 | 1 |
| 4. | Bloom Field High School | 6 | 1 |

| | | | |
|-----|---|----|---|
| 5. | Municipal Girls Higher Secondary School | 3 | 2 |
| 6. | Ram Krishna Siksha Parishad Higher Secondary school | 4 | 1 |
| 7. | Nepali Girls Higher Secondary School | 23 | 2 |
| 8. | Assembly of God Church School | 3 | 1 |
| 9. | Loreto Convent | 2 | 1 |
| 10. | St. Pauls School | 3 | 1 |
| 11. | West Point School | 3 | 1 |
| 12. | Gyanoday Niketan | 3 | 1 |
| 13. | Vidya Vikash Academy | 3 | 1 |
| 14. | Camellia School | 3 | 1 |
| 15. | Blessing Academy | 3 | 2 |

The program started at 9:00 am in the morning with registration of the participants. After the welcome address the students were given a lesson on bird watching by Mr Saibal Sen Gupta, St Roberts School, who is a well-known bird watching enthusiast from Darjeeling. The students were divided into 4 groups and taken to the nature trail leading to the old conservation breeding centre in the forest behind the park, which is the only remaining indigenous forest

areas left in Darjeeling town. The forest is the home to several floral and faunal species including several local bird species. The aim of organising a bird watching event was to educate the local students on the bird species of Darjeeling and bring them a little closer to nature. The session ended at 11 am after which refreshments were served to all the participants.

After the refreshments, the students and teachers were seated in the conference all at PNHZ Park for an experiential story telling session with Miss Minkit Lepcha. The story aimed at raising an empathy among children for wildlife and nature. Lunch was served to all the participants at 12:30 pm and the story telling session resumed after 1:00 pm. The second half of the storytelling session included an interactive session with the students where they had to present the lessons they had learnt on Earth day at the park. The students were divided into groups of 10 each and were provided with chart papers, pencil and colour pencils to help them present their ideas better.

The day's program ended with a vote of thanks at 3:30 pm. All the participants were also given educational material.







VAN MAHAOTSAV CELEBRATION-2018

Van Mahotsav, a weeklong festival of tree planting is organised every year in the month of July all across India and lakhs of trees are planted. Van Mahotsav was launched in the year 1950 by Shri Kanhaiyalal. M. Munshi, the then Union Minister for Agriculture and Food to create an enthusiasm in the popular mind for the preservation of forest and planting of trees, as "trees mean water, water means bread and bread is life". It was also hoped that it would create tree consciousness among the people.

Padmaja Naidu Himalayan Zoological park like every year celebrated Van Mahotsav on July 1st with the plantation of trees by the park staff within the Park's forest area. This year the members of the shop keepers association were also involved in the tree planting ceremony around the park including the staff quarters and the roads leading up to the park.

The park planted species of *Rhododendron* sp. (Gurans), *Castanopsis hystrix* (Katus), *Alnus nepalensis* (Utis) and *Quercus fenestrata* (Arkawla). The tree plantation ceremony was followed by lunch organised by the park for all zoo staff and the members of the shopkeepers association.







INTERNATIONAL RED PANDA DAY 2018 CELEBRATION

International Red Panda Day is celebrated on the third Saturday of November every year. This year the day falls on 15th September 2018. With the decline in their habitat, International Red Panda day hopes to encourage people to learn about these adorable animals and help save the biome in which they live.

Padmaja Naidu celebrated the International red panda Day on 15th September 2018. A poster presentation was arranged on the terrace of the new Bengal Natural History Museum involving volunteers and the staff of the park. The posters included information on Red panda biology, facts, habitat, threats, conservation efforts worldwide, conservation efforts at Padmaja Naidu Himalayan Zoological Park and adoption of red Panda at the Park.

The program began at 9:30 am with a procession with the zoo staff and volunteers holding posters that displayed information about the Red Panda. The procession began at the main gate and ended at the Bengal Natural history Museum. After the procession, an interactive session between the zoo volunteers and the zoo visitors was held at the terrace of the museum where the visitors could come and take pictures with the informative posters, read and learn about the pandas and interact with the zoo staff and volunteers regarding the red panda.

The aim of this event was to spread awareness among the zoo visitors not only about the biology, habitat and status of the Red panda but also the threats faced by the species and conservation measures taken up by the park, the breeding program and other measures taken worldwide to save this species.



Procession around the Park with the zoo staff and volunteers



Interactive Session between the zoo staff, volunteers and visitors at BNHM



Interactive Session between the zoo staff, volunteers and visitors at BNHM

CHILDREN DAY CELEBRATION-2018

The park celebrated Children's day in association with Hayden Hall Community Development Centre, Darjeeling. The park organized an outreach program for children from remotely located schools in Darjeeling in association with Hayden Hall Community Development Centre. The program included 52 students and 27 teachers from 6 schools and was held on 14th November 2019. The outreach program comprised of an educational tour of the park along with quiz competition and the showing of a wildlife movie. The children and teachers were also provided with packet lunches, water and juice along with educational materials.

| S.No | School Name | No of Students | No of Teachers |
|------|--|----------------|----------------|
| 1. | Vision Academy, Badamtam | 19 | 5 |
| 2. | Pulbazar Junior Basic School, Pulbazar | 10 | 3 |
| 3. | Dhajea No 9 Primary School | 3 | 2 |
| 4. | Dhajea Tea Estate Primary School | | |
| 5. | Avongrove Primary School | 5 | 6 |
| 6. | Dhajea Vidhya Sagar Primary School | 5 | 5 |





OBSERVING CHILD RIGHTS WEEK IN ASSOCIATION WITH DISTRICT CHILD PROTECTION UNIT, DARJEELING

The District Child Protection Unit organized various programs involving children to create awareness on Children Rights and Protection. The week long program from 14th November- 20th November, 2019 included an outreach program for under privileged children from Darjeeling and their escorts at Padmaja Naidu Himalayan Zoological Park on 17th November 2019.

The program included 46 children and 10 escorts from Kanchenjunga Primary School and Holy Angels School in Darjeeling. The outreach program comprised of an educational tour of the park, a talk on the conservation of local flora and fauna of Darjeeling, information on the management of captive animals and the conservation breeding program of the park along with a quiz competition and screening of a wildlife movie. The participants were given refreshments and educational materials at the end of the program.





21. Seasonal special arrangements for upkeep of animals.

Winter (end November – February):

1. Bedding materials provided to the following animals
Leopard cat, Jungle Cat, Asian Palm Civet, Himalayan Palm Civet, Slow loris, Asiatic Black Bear.
2. Curtains in all the night shelters for warmth.
3. Heaters, and Blowers in the night shelters.
4. Luke warm water for drinking for all the animals.
5. Quantity of Molasses and honey increased to animals like herbivores Asiatic Black bear and Red Panda.
6. Knitted thatched roof of dry bamboo used for covering the roof of the enclosures.
7. Bedding materials like blankets and straw provided for all the reptiles. Reptile house closed for the visitors.
8. Wooden platforms and wooden frames provided in the night shelters for warmth.

Monsoon (June- September)

1. De-humidifiers used in the night shelters to lower the humidity.
2. Polythene sheets to cover the roof of the enclosures to keep the enclosures and the Kraal area dry.
3. Shelters in the enclosure of the herbivores.
4. Regular clearing of enclosures with thick overgrowths.
5. Care taken to keep the night shelters dry for animal retirement at night.
6. Pheasants with chicks kept inside the chick rearing room.

Spring (March- May)

1. Enrichments for all species done- wooden platforms, aerial walkways, breeding boxes.
2. Feeding enrichments

22. Research Work carried out and publications

| Sl. No. | Name | Institute | Tenure | Area of Work |
|---------|--|---|---|---|
| 1 | Director Padmaja Naidu Himalayan Zoological Park | Padmaja Naidu Himalayan Zoological Park, Darjeeling. | Initiated from June 2017. The project is ongoing. | Status Survey of Himalayan Goral (<i>Nemorhaedus goral</i>) at Singalila National Park, Neora Valley national Park, Mahananda Wildlife Sanctuary, Senchal Wildlife Sanctuary and Kurseong Division. |
| 2 | Director Padmaja Naidu Himalayan Zoological Park | Padmaja Naidu Himalayan Zoological Park, Darjeeling. | The project is ongoing | Study of Microflora and Microfauna at PNHZ Park, Darjeeling |
| 3 | Dr Mousumi Poddar Sarkar, Prof, Chemical signal and lipidomics Lab. Dept of Botany (Center of advance study UGC.) | PNHZ Park in collaboration with University of Calcutta. | April 2017- March 2018 / April 2018 – 31 st March 2020. | “Marking fluid” (MF) and urine samples of mammals of Felidae family of captive Indian tiger, Clouded Leopard, Black Leopard, Common Leopard, Snow Leopard, Leopard cat from PNHZ Park Darjeeling. |

Zoo Interns& Volunteers

The zoo interns and volunteers are provided with all necessary help and a certificate at the end of the study:

| SI No. | Name of the Intern | School/ College/University/Other Institution | Country | Duration of Internship | Area of Work |
|--------|--------------------------|--|---------|---|---|
| 1. | Miss Aadarshika Thapa | XII student at Loreto Convent , Darjeeling | India | 21 days (20 th April 2018 - 13 th May 2018) | Visitor's Assessement at Padmaja Naidu Himalayan Zoological Park |
| 2. | Miss Nabanita Ghosh | M.Sc 3 rd Semester (Zoology), Darjeeling Government College | India | Eight months | Social Interaction among Hnauman Langur in captivity at PNHZ Park |
| 3. | Mr Ram Veer Vasa | B.Sc Life Science ,St Xavier's College Autonomous, Mumbai | India | 12 days (4 th May 2018- 17 th May 2018) | Animal Mangement at Padmaja Naidu Himalayan Zoological Park |
| 4. | Miss Neeti A. Rathi | B.Sc Life Science ,St Xavier's College Autonomous, Mumbai | India | 4 th May,2018 – 26 th June, 2018) | Captive Animal Management |
| 5. | Miss Shamima Azma Ansari | M.Sc 3 rd Semester (Zoology), Darjeeling Government College | India | Two months | Parasitic study of captive animals at PNHZ Park |
| 6. | Miss Atindriya Sen | M.Sc 3 rd Semester, Darjeeling Government College | India | 43 days (July, 2018 – Oct, 2018) | Captive Behavioural of Himalayan Wolf |
| 7. | Miss Romia Gurung | M.Sc 3 rd Semester (Zoology), Darjeeling Government College | India | 16 days (Sep,2018- Oct, 2018) | Parasitic study of captive animals at PNHZ Park |
| 8. | Miss Tania Shirin | M.Sc 3 rd Semester,Darjeeling Government College | India | 45 days (July,2018-Sep,2018) | Study of Invertebrates at PNHZ Park |
| 9. | Miss Ruma Mandal | M.Sc 3 rd Semester,Darjeeling Government College | India | 45 days (July,2018-Sep,2018) | Study of Invertebrates at PNHZ Park |

23. Conservation Breeding Programme of the Zoo

PROJECT SNOW LEOPARD

- Extremely threatened due to hunting, killing, IUCN (2006) lists as endangered (EN-C2a (i)) on the IUCN Red List and IWPA lists it as a Schedule I species. CITES includes it as an Appendix I species. Population estimated below 2500.
- Snow leopard is an extremely beautiful animal distributed along the habitat scattered throughout a vast region surrounding the Central Asian deserts and plateaus ranging from Afghanistan to Uzbekistan. Throughout most of its range, snow leopards are associated with arid and semi arid shrub-land, grassland or steppe. The species is generally found at elevation between 3000m -4600m, although they are known to go above 5500 m in the Himalayas. Steep terrain broken by cliffs, ridges, gullies and rocky outcrops is preferred, although in certain parts like Mongolia and Tibet plateau they can be found in relatively flat country. In India, snow leopard is distributed in the Himalayan chain from Kashmir to Sikkim, northwards their territory extends into Tibet, Central Asia and the Altias in the region of stupendous rock and cliff above the tree- line some 12,000 -13,000ft (3660-3965m) above sea level.
- Hunting of the Snow leopard is one of the major threats to the species. Snow leopards have been hunted out of many of the areas of the high Central Asian Mountain. There is a demand for snow leopard bone from the Chinese medicine trade. Garments of Snow leopard fur were once highly priced in fashion world and although no longer in International trade, fur coats and novelty furs have seen for sale in shops throughout China, Taiwan and Mongolia.
- The species have become extremely rare in many parts of its native habitat. In India, where snow leopards occur on the southern slopes of the Himalayas. The species is listed as endangered under the Wildlife Protection Act (1972). In this respect PROJECT SNOW LEOPARD (PSL), a flagship species programme to strengthen wildlife conservation in the Himalayan high altitude was launched.
- PNHZ Park started work on captive breeding project of this rare species in the year 1983. Apart from a number of *insitu conservation efforts*, a *global captive breeding programme* is in place. Darjeeling zoo has been a part of this initiative since 1986.
- Experts Dr. Ingo Rieger and D. Walzthoeny from USA inspected the site in July 1983 and gave their approval.
- Site selection for off- display conservation breeding centre for snow leopard is the North- Western corner of Jawahar Parbat (Birch Hill) at an altitude of 27 degree and longitude 88 degree East. Altitude is 6900ft.

- Founder stock of snow leopard at PNHZ Park (1986- 2015)

| SI No. | Name of the animal | Sex | International Stud book Number | Acquired from |
|--------|--------------------|-----|--------------------------------|--------------------|
| 1 | Kashi | F | 1005 | Zurich |
| 2 | Vishna | M | 620 | Helsinki |
| 3 | Persia | F | 697 | Toledo Zoo |
| 4 | Hank | M | 1059 | Litterock |
| 5 | Quizil | M | 1472 | Zurich |
| 6 | Quilla | F | 1473 | Zurich |
| 7 | Quetta | F | 1474 | Zurich |
| 8 | Tyson | M | 1850 | Hubstrand . Sweden |
| 9 | Neeta | F | 2228 | Leh |
| 10 | Meeta | F | - | Srinagar |

- A total of fifty six snow leopard births have been recorded in the park. The table below depicts the birth at an interval of every five years and their survivality.

| YEAR | SEX RATIO/TOTAL BIRTH | | | | | | |
|-----------|-----------------------|----|---|-------------|---|---|-------------------|
| | M | F | U | Total birth | M | F | Total survivality |
| 1986-1991 | 0 | 2 | 2 | 4 | 0 | 0 | 0 |
| 1992-1996 | 6 | 3 | 1 | 10 | 1 | 2 | 3 |
| 1997-2001 | 8 | 5 | 0 | 13 | 1 | 2 | 3 |
| 2002-2006 | 11 | 7 | 1 | 19 | 5 | 4 | 9 |
| 2007-2013 | 6 | 4 | 0 | 10 | 0 | 1 | 1 |
| | 31 | 21 | 4 | 56 | 7 | 9 | 16 |

* Wild caught founder (“Meeta” 227) did not make any contribution to the breeding programme.

- Padmaja Naidu Himalayan Zoological Park in 2003 had 18 Snow leopards (9:9), one of the largest captive population, in a single zoo, in the world.
- Next step was to have at least 4-5 stable captive population of snow leopards at different high altitude zoos in the country, before any release/restocking in the wild can be contemplated. In 2004, a pair each of snow leopard was sent from Darjeeling zoo to Himalayan Zoological Park, Gangtok, Pandit Govind Ballabh Pant High Altitude Zoo, Nainital and Himalayan Nature Park, Kufri, Shimla to start subsidiary snow leopard breeding centers in these Himalayan zoos.
- In between 2004-2013 three individuals died with one cub survival that skewed the option for breeding leaving the captive stock with ten individuals and with limited breeding pairs. The analysis done so far regarding the population management of snow leopard in the facility came up with the following recommendations:
 - Scientific management of the Breeding programme including development of husbandry protocols.
 - In order to maintain the genetic variability and to provide with larger breeding options animal exchange should be made regularly in consultation with the International Stud book keeper. Individuals > 16 years should not be considered for breeding.
 - Demographic and genetic analysis mandatory of captive stock.
 - Newer breeding facilities to be established.
- Based on the recommendations

A short term research on the “**Study of Snow leopards**” funded by Central Zoo Authority looked into developing ex-situ husbandry aspects particularly to look into persistent problems that existed in the breeding programme majorly **cub mortality and brittle bone diseases**. The research work proved to be beneficial and provided recommendations for creating appropriate facilities for breeding, cub care and their survivality. Adopting these methods the 3 cubs born in 2012 and 2014 survived. Besides this the research work helped in giving inputs during the establishment of the new breeding centre for the snow leopards where the night shelters, breeding dens, enclosures, veterinary facilities have been developed based on the recommendations of the findings.

Genetic study of the captive stock was done by LaCONES, CCMB. Reports concluded that 1:1 out of the total captive stock are genetically more vibrant when compared with other samples and the two individuals can be used for conservation breeding.

Studbook analysis: **inbreeding- not advisable Low coefficient- advisable**. Demographic analysis suggested that new founders be added to the captive population and the population size be increased to at least 100 individuals with equal sex ratio in the period of next ten years. The population projection for both actual and modeled population suggest that the goal of maintaining at least 100 genetically viable and demographically stable individuals in captivity in India cannot be achieved without the addition of fresh founders and utilizing the reproduction potential of the captive population to the maximum.

Based on the genetic and demographic analysis of the captive stock 2:2 individuals was included in the captive. The captive stock in June 2014 is as follows:

Total population and their sex ratio: 12 (4:8)

- Death of one male in 2014, death of 2 males in 2015 and 1 male in 2016 skewed the breeding options leaving the Park with 1 male and 8 female.
- In consultation with the International Stud book keeper an animal exchange programme has been proposed with Dudley zoo and Mulhouse zoo.
- Two males acquired from Dudley Zoo, London and Mulhouse Zoo, France.
- One of the male used for breeding.
- Three litters born to this male.

| SL.no | Name | Stud# | Sex | Birth Date | Sire | Dam | Location | Transponder | Remarks |
|-------|---------|-------|-----|------------|------|------|----------------------|------------------|---|
| 1 | Tista | 2399 | F | 29.03.2002 | 1897 | 2228 | Darjeeling | 00-0611-4DB1 | I |
| 2 | Ritu | 2538 | F | 11.03.2004 | 1897 | 2228 | Darjeeling | 981098102056547 | |
| 3 | Yashmin | 2540 | F | 25.05.2004 | 1850 | 1797 | Darjeeling | ID-00-00F6-8A38 | |
| 4 | Rare | 2994 | F | 19.06.2012 | 2405 | 2538 | Darjeeling | 956000002158446 | |
| 5 | Kim | 2846 | F | 29.05.2012 | 2566 | 2430 | Nurnberg | 3968000005548177 | Acquired From Nurnberg Zoo, Germany on 11.10.12 |
| 6 | Subash | 2402 | M | 08.07.2002 | 1850 | 1899 | Darjeeling | 00-0617-C8C5 | |
| 7 | Zima | 2861 | F | 06.05.2010 | 2469 | 2274 | Lepzig Zoo | 968000005542846 | Acquired from Lepzig Zoo, Germany on 06.10.13 |
| 8 | Morning | 3159 | F | 02.05.2014 | 2401 | 2862 | Darjeeling | 0007155A51 | |
| 9 | Makalu | 3140 | M | 17.04.2014 | 2826 | 2813 | Dudley Zoo, London | 956000001458313 | Acquired From Dudley Zoo, London on 25.06.16 |
| 10 | Namkha | 3141 | M | 16.06.2016 | 1847 | 2887 | Mulhouse Zoo, France | 250228730005176 | Acquired from Mulhouse Zoo, France on 01.09.16 |
| 11 | Unnamed | 3335 | M | 04.03.2018 | 3141 | 2861 | Darjeeling | 981098102056183 | |
| 12 | Unnamed | 3336 | F | 04.03.2018 | 3141 | 2861 | Darjeeling | 981098102057956 | |

Future Works:

- 1) Regular genetic demographic and hormonal analysis of the captive stock to ensure maximum genetic variability.
- 2) Behavioural study in captivity.
- 3) Research on the health issues of the species in young, adults and old individuals. Frequent occurrence of pneumonia, brittle bone disease, what leads to the occurrence of such diseases in higher frequency in captivity? Its preventive measures etc.
- 4) More exchange programmes.
- 5) Linkage of the ex-situ conservation with in-situ conservation.

PROJECT RED PANDA

- Red panda *Ailurus fulgens* is a small mammal of the Himalayas, almost of the size of the jungle cat with chestnut coat and ringed tail. It is distributed in the Himalayas from Central Nepal through northern Burma in the mountains of South-Western China at altitudes between 900-13,000 feet. In India, red panda is distributed in Sikkim, Darjeeling Hills and Arunachal Pradesh.
- Red panda is threatened by habitat loss and fragmentation. Red panda was also hunted and trapped in large number to be kept as pets and for supply to zoos all over the world. The species is enlisted as Endangered by the IUCN (2006) with a declining population in its distribution range. The species is a protected species in all its range countries (Nepal, Bhutan, India, Burma and China). In India the species receives protection under the Indian Wildlife Protection Act (1972). The species is also under the CITES I Appendix. Population estimated below 2500.
- In captivity, a global captive breeding program is in place something which started in the early 1990s in Europe. Padmaja Naidu Himalayan Zoological Park, Darjeeling which at present has 17 (10:7) red pandas is also a part of this breeding program for the red panda. The zoo was able to restock four red pandas back to the wild as a conservation initiative.
- A planned conservation Breeding Project as a part of the Global Captive Breeding Project as a part of the Global Captive Breeding Master Plan was initiated in early nineties in the Zoological Park in response to the International Conservation efforts, through initiation of the project and improvement/modification of existing housing facilities which already existed.
- Zoological Park had one male (Basant) and three females (Amita, Chanda and Divya) all of wild origin in the stock at the beginning of the Project in 1990. Hence one male “Oscar” (d.o.b June 29,1992) was brought from Rotterdam Zoo in April 1, 1993 to augment the existing population of 4 red Pandas in the zoological Park.
- The first successful planned breeding of red Panda occurred on 20.06.1994 when two cubs “Ekta” and “Friend” were born to “Basant” and “Amita”
- Hari (d.o.b – June 30, 1993, Rotterdam), Gora (male, d.o.b-June 25,1993, Koln)and Indira (female d.o.b.-June 26,1993, Madrid) arrived in Darjeeling on November 10, 1994 to induce new blood and to continue the planned breeding programme.
- PNHZ Park in 2003 had a stable and genetically healthy population of 21 red pandas in captivity. Pair at Gangtok (Sikkim) Zoo (a subsidiary breeding center established in the region) has also started breeding.

- The zoological park was in a position of realizing the ultimate objective of the project of releasing zoo bred red pandas in the wild in the Singalila national park , to begin with
- Guidelines stipulated by the IUCN for re-introduction/re-stocking of captive born wild animals were followed in totality for the programme. All necessary clearances from Govt. of India and Govt. of West Bengal were obtained for the purpose.
- Pre-release monitoring of the red panda population and habitat in the Gairibans area of the Singalila National Park was organized during November/December, 2002.
- DNA based analysis was conducted in collaboration with Centre for cellular and Molecular Biology, Hyderabad for taxonomic status and genetic variability studies.
- An Intermediary release facility (50 sq m) for soft release o the animals were created near Gairibans Beat office (around 8500ft) of South Singalila Range in the Singalila national Park. The construction cost was fully funded by the Central Zoo Authority, Govt. of India.
- Both the animals were shifted to the intermediary release facility at Gairibans for acclimatization and kept there for 3-4 months. Though they were in the wild , they were still under the supervision and observation of some of the zoo staffs posted there. When the animals were thought to have acclimatized well to the environment, they were finally released into the wild.
- Radio collars of appropriate size and weight were fitted on the animals for their post-release monitoring for at least 12 months (or till batteries of the collars were functional).
- Out of the two female red pandas (Mini and Sweetie) released in 2003, sweetie gave birth to a cub in July 2004 in a hollow of an oak tree in Gairibans (SNP, Darjeeling).
- In 2007 and 2008 two wild caught males were added to the captive stock including one female from Auckland zoo to increase the breeding potential.
- In 2010 one captive born female was brought from Auckland Zoo, New Zealand to add variability to the existing population.
- In 2012 Red Panda census was carried out in two phases the objective of the census was to -Conduct meetings and train locals for the census, Assess the population number -*Assess the habitat, Further verification of the population status by genetic analysis through fecal samples, Other existing animals in the Red Panda habitat, Threat analysis, GIS Mapping of both the National Parks.*
- 31 Red Pandas through direct sighting in both National parks. Through genetic analysis 38 in SNP (17:4:17) and 32 (12:13:7) in NVNP.

- A short term research Project was also initiated from March 2012-2014 funded by Central Zoo Authority on “**Study of Red Panda (*Ailurus fulgens*) in ex-situ facilities in co-relation with in-situ facilities for conservation breeding** funded by Central Zoo Authority.
- The genetic analysis of blood and faecal samples observed showed that captive Red Panda at PNHZP, Darjeeling are genetically vibrant and can be used selectively for Conservation breeding (CCMB) in 2013.
- A collaborative work on the Red Panda Stress level-hormonal analysis with LaCONES, CCMB completed, results indicates cyclicity of all female individuals in 2013-2014.
- A Research project “Study on housing, enclosure enrichment, evaluation of existing housing and enrichment practices” also funded by Central Zoo Authority conducted by Wildlife Institute of India also includes the species Red Panda.
- New breeding facility at Topkedara for the Red Pandas.
- A short term research Project was also initiated from March 2013-2015 funded by Central Zoo Authority on “**Red Panda Nutrition-Towards an Integrated Approach**”.
- Population Habitat Viability Analysis for Red Panda done on November 2014.
- Pt. Govind Ballabh Pand High Altitude Zoo, Nainital approved as participating Zoo by Central Zoo Authority vide letter F.N.O 24-7/2007-CZA(Vol.II)(A)/3613 dated 25.9.2013.
- A pair of Red Panda was transferred to Nainital Zoo on 25.11.14. The pair gave birth to two cubs in 2015, thus ensuring a captive population that shall later assist the breeding programme at Darjeeling Zoo.
- One captive female added to the captive stock from Sikkim Zoo for further breeding.

Current stock of Red Panda as on 31st March 2019

| SL NO | NAME | STUD BOOK NO. | SEX | SIRE | DAM | DT OF ACQ | DOB | TRANSPONDER NO |
|-------|---------|---------------|-----|----------|----------|--------------------------|-----------|----------------|
| 1 | Pokhraj | 01128 | M | Gora | Ekta | Captive born | 18.6.01 | ID-00-061-FD19 |
| 2 | Ram | 1088 | M | John | Sheetal | Captive born | 22.6.10 | 0006B82659 |
| 3 | Janaki | 1089 | F | John | Sheetal | Captive born | 22.6.10 | 0006B7428B |
| 4 | Rigsel | 0789 | F | Rahul | Lucky | 31.10.11 from Sikkim Zoo | 28.05.07 | 0006B7107E |
| 5 | Smile | 12123 | F | Kaijalay | Samridhi | Captive born | 19.6.2012 | 95600002159372 |
| 6 | Shifu | 13175 | M | Kaijalay | Rigsel | Captive born | 27-6-2013 | 95600002147924 |
| 7 | Kitchi | 13176 | F | Kaijalay | Rigsel | Captive born | 27-6-2013 | 95600002145534 |
| 8 | Shova | 11116 | F | Ram | Lucky | 22.02.2014 from | 07.6.2011 | 95600002158277 |

| | | | | | | | | |
|----|----------|-------|---|----------|-----------|----------------------------|------------|-----------------|
| | | | | | | Sikkim Zoo | | |
| 9 | Shine | 14174 | F | Kaijalay | Sambridhi | Captive born | 04.7.2014 | 0007150CC1 |
| 10 | Balam | 15117 | M | Kaijalay | Janaki | Captive born | 07.6.2015 | 00074C5ADA |
| 11 | Prashana | 15118 | F | Ram | Shova | Captive born | 16.6.2015 | 000715472D |
| 12 | Noel | 15119 | M | Shifu | Sheetal | Captive born | 14.7.2015 | - |
| 13 | Joel | 15120 | M | Shifu | Sheetal | Captive born | 14.7.2015 | 00075046F5 |
| 14 | Karma | 10118 | F | Ram | Lucky | 23.11.2015 from Sikkim Zoo | 3.6.2010 | 956000002158469 |
| 15 | Unnamed | 1794 | F | Balam | Rigsel | Captive born | 08.7.2017 | 00074D578B |
| 16 | Unnamed | 1795 | F | Balam | Rigsel | Captive born | 08.7.2017 | 00075043AE |
| 17 | Unnamed | 1796 | M | Shifu | Prashana | Captive born | 16.7.2017 | 007152639 |
| 18 | Unnamed | 1889 | F | Shifu | Janaki | Captive born | 29.6.2018 | 00071F3684 |
| 19 | Unnamed | 1890 | F | Noel | Kitchi | Captive born | 09.07.2018 | 000715394A |
| 20 | Unnamed | 1891 | F | Noel | Kitchi | Captive born | 09.07.2018 | 000715305B |
| 21 | Unnamed | 1892 | M | Noel | Kitchi | Captive born | 09.07.2018 | 00071565D0 |

Future Work:

Ex-situ:

- Encourage exchange of Red panda among zoos at national and international level.
- Scope to include Himalayan Nature Park, Kufri and Itanagar Zoo, Arunachal Pradesh to be participating zoos in the Red panda Conservation Breeding Programme.
- Formulate Population Management Plan/Species Survival Plan.
- Basic behavioural study on the captive red pandas.
- Restocking of captive red pandas.
- Take up advance studies with the research organizations – Genetic studies/Germplasm banking/disease screening/hormonal and behavioural studies.
- CBC, Dowhill; and CBS, Topkeydara for presence of various parasites”
- Better awareness and knowledge dissemination.
- Opportunities for Zoo/Wildlife Veterinarians, Biologists, Technicians, Animal Supervisors and Zoo Keepers.

In-situ:

- Zoos and other organization routinely conduct surveys of one or more PA's (population/genetics).
- Intensive management of protected areas – SNP and NVNP.
- Routine threat assessment.

24. Animal acquisition / transfer / exchange during the year

| A | Animals arriving in the Zoo | | | | |
|---|-----------------------------|---|--------------|-------------------------------|----------------------------|
| | Sl.NO | Species | Number (M:F) | From which Zoo | Date of arrival in the zoo |
| | 1. | Blue and Gold Macaw (<i>Ares chloropterus</i>) | 0:0:1 | Recue Centre, Salt lake | 10.04.2018 |
| | 2. | Blue and Gold Macaw (<i>Ares chloropterus</i>) | 0:0:2 | North Bengal wild animal park | 21.04.2018 |
| | 3. | Sand Boa (<i>Erynx johnii</i>) | 0:0:5 | Recue Centre, Salt lake | 10.04.2018 |
| | 4. | Monitor lizards (<i>Varanus bengalensis</i>) | 0:0:2 | Alipore Zoo | 10.04.2018 |
| | 5. | Rat Snake (<i>Ptyas mucosa</i>) | 0:0:2 | Recue Centre, Salt lake | 10.04.2018 |
| | 6. | Checkered Keel Back (<i>Xenochroptis piscator</i>) | 0:0:2 | Recue Centre, Salt lake | 10.04.2018 |
| | 7. | Elongated Tortoise (<i>Indotestudo elongate</i>) | 0:0:2 | Recue Centre, Salt lake | 10.04.2018 |
| | 8. | Slow Loris (<i>Nycticebus bengalensis</i>) | 1:0:0 | Assam State Zoo | 22.10.2018 |
| | 9. | Mishmi Takin (<i>Budorcas taxicolor taxicolor</i>) | 3:2:0 | Tier Park, Berlin, Germany | 19.01.2019 |

| B | Animals transferred from the Zoo | | | | |
|----------|---|---|---------------------|--------------------------------------|--|
| | SI No | Species | Number (M:F) | Going to which Zoo | Date of deposition from the zoo |
| | 1. | Golden pheasant (<i>Chrysolophus pictus</i>) | 2:2:0 | Adina Deer Park, Malda | 02.07.2018 |
| | 2. | Silver pheasant (<i>Lophura nycthemera</i>) | 2:2:0 | Adina Deer Park. Malda | 02.07.2018 |
| | 3. | Lady Amherst's pheasant (<i>Chrysolophus amherstiae</i>) | 1:1:0 | North Bengal wild animal park | 01.08.2018 |
| | 4. | Bengal Monitor Lizard (<i>Varanus bengalensis</i>) | 0:0:2 | North Bengal wild animal park | 01:08.2018 |
| | 5. | Blue Sheep (<i>Pseudois nayaur</i>) | 0:1:0 | Himalayan Zoological Park, Sikkim | 20.09.2018 |
| | 6. | Golden pheasant (<i>Chrysolophus pictus</i>) | 1:1:0 | Assam State Zoo | 24.10.2018 |
| | 7. | Silver pheasant (<i>Lophura nycthemera</i>) | 1:1:0 | Assam State Zoo | 24.10.2018 |
| | 8. | Lady Amherst's pheasant (<i>Chrysolophus amherstiae</i>) | 1:1:0 | Assam State Zoo | 24.10.2018 |
| | 9. | Silver pheasant (<i>Lophura nycthemera</i>) | 1:1:0 | Rasikbeel Mini Zoo | 28:12.2018 |
| | 10. | Golden pheasant (<i>Chrysolophus pictus</i>) | 1:1:0 | Rasikbeel Mini Zoo | 28.12.2018 |

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 taken | |
|--------|----------------|--|--|---|--|--|
| | | | | | Date and Place of rehabilitation in their habitat | Reasons for housing in the zoo, if not released in their habitat |
| 1 | 10.07.2018 | Common Leopard (<i>Panthera pardus</i>) 1:0:0 | Forest of Satellite Zoo, Dowhill, Kurseong | 15.10.2018 vide memo no 604/S.O.23/GENL/RES.ANM/PNHZP/18-19 | Sent to South Kharibari Rescue centre Memo no 795/GENL/RES/W.ANIMALS/PNHZP/18-19 dated 18.12.18 | |

26. Annual Inventory Report of Padmaja Naidu Himalayan Zoological Park (1st April 2018-31st March 2019)

| S. No | Species Name | Animal Name | Scientific Name | Opening stock 1.4.2018 | | | | Births | | | Acquisitions | | | Disposals | | | Deaths | | | Closing Stock 31.3.2019 | | | |
|---|--------------|-----------------------|-----------------------------------|---------------------------|---|----|----|--------|---|---|--------------|---|---|-----------|---|---|--------|---|----|----------------------------|---|----|----|
| | | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| Endangered species (Schedule I and II) | | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| 1 | Amphibian | Himalayan Newt | <i>Tylototriton verrucosus</i> | 6 | 7 | 16 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 | 16 | 29 |
| 2 | Bird | Pheasant Cheer | <i>Catreus wallichii</i> | 3 | 4 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 4 | 0 | 6 |
| 3 | Bird | Pheasant Grey Peacock | <i>Polypectron bicalcaratum</i> | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| 4 | Bird | Pheasant Kalij | <i>Lophura leucomelana</i> | 10 | 3 | 0 | 13 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 10 | 2 | 0 | 12 | |
| 5 | Bird | Pheasant Monal | <i>Lophophorus impejanus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| 6 | Bird | Tragopan Temminick's | <i>Tragopan temminickii</i> | 8 | 6 | 0 | 14 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 11 | 1 | 20 | |
| 7 | Mammal | Bear Himalayan Black | <i>Ursus thibetanus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| 8 | Mammal | Cat Jungle | <i>Felis chaus</i> | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 2 | |
| 9 | Mammal | Cat Leopard | <i>Prionailurus bengalensis</i> | 2 | 1 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 3 | |
| 10 | Mammal | Civet Common Palm | <i>Paradoxurus hermaphrodites</i> | 5 | 3 | 0 | 8 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 4 | 0 | 11 | |
| 11 | Mammal | Civet Himalayan Palm | <i>Paguma larvata</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |

| S. No | Species Name | Animal Name | Scientific Name | Opening stock 1.4.2018 | | | | Births | | | Acquisitions | | | Disposals | | | Deaths | | | Closing Stock 31.3.2019 | | | |
|------------------------------------|--------------|--------------------|-------------------------------------|---------------------------|-----------|-----------|------------|----------|----------|-----------|--------------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|-----------|-----------|------------|
| | | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| 12 | Mammal | Jackal | <i>Canis aures</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 13 | Mammal | Langur Common | <i>Semnopithecus entellus</i> | 3 | 2 | 1 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 1 | 7 |
| 14 | Mammal | Common Leopard | <i>Panther Pardus</i> | 2 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 4 |
| 15 | Mammal | Leopard Clouded | <i>Neofelis nebulosa</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 16 | Mammal | Leopard Snow | <i>Uncia uncial</i> | 3 | 8 | 2 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 | 8 | 0 | 12 |
| 17 | Mammal | Loris Slow | <i>Nycticebus bengalensis</i> | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 18 | Mammal | Markhor | <i>Capra falconeri</i> | 2 | 3 | 0 | 5 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | 4 | 0 | 6 |
| 19 | Mammal | Panda Red/ Lesser | <i>Ailurus fulgens fulgens</i> | 7 | 10 | 0 | 17 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 8 | 13 | 0 | 21 |
| 20 | Mammal | Sheep Blue/ Bharal | <i>Pseudois nayaur</i> | 8 | 6 | 0 | 14 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 8 | 5 | 0 | 13 |
| 21 | Mammal | Tahr Himalayan | <i>Hemitragus jemlachus</i> | 5 | 4 | 0 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 6 | 0 | 12 |
| 22 | Mammal | Tiger Bengal | <i>Panthera tigris tigris</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 23 | Mammal | Wolf Tibetan | <i>Canis lupus himalayensis</i> | 1 | 3 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 5 | 0 | 7 |
| 24 | Mammal | Yak Wild | <i>Bos grunniens</i> | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 25 | Mammal | Mishmi Takin | <i>Budorcas taxicolor taxicolor</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 2 | 0 | 4 |
| 26 | Reptile | Python Indian Rock | <i>Python molurus</i> | 1 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 2 |
| 27 | Reptile | Viper Russells | <i>Dabola russelii</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Total of Endangered Species | | | | 78 | 68 | 24 | 170 | 6 | 5 | 20 | 4 | 3 | 0 | 0 | 1 | 0 | 7 | 7 | 5 | 87 | 81 | 20 | 188 |

Species (Schedule II and IV)

| S N o | Species Name | Animal Name | Scientific Name | Opening stock 1.4.2018 | | | | Births | | | Acquisitions | | | Disposals | | | Deaths | | | Closing Stock 31.3.2019 | | | |
|-----------------------|-----------------|--------------------------|------------------------------|---------------------------|-----------|----------|-----------|----------|----------|----------|--------------|----------|-----------|-----------|----------|----------|----------|----------|----------|-------------------------|-----------|-----------|-----------|
| | | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| 28 | Bird | Red Jungle Fowl | <i>Gallus gallus</i> | 17 | 15 | 2 | 34 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 18 | 15 | 6 | 39 |
| 29 | Bird | Parakeet Alexandrine | <i>Psittacula eupatria</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30 | Bird | Parakeet Rose Ring | <i>Psittacula krameri</i> | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 |
| 31 | Mammal | Deer Barking | <i>Muntiacus muntjak</i> | 4 | 8 | 0 | 12 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 10 | 0 | 16 | |
| 32 | Mammal | Deer Sambar | <i>Rusa unicolor</i> | 1 | 2 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 2 | 0 | 3 | |
| 33 | Mammal | Goral | <i>Naemorhedus goral</i> | 8 | 6 | 0 | 14 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 11 | 7 | 0 | 18 | |
| 34 | Reptile | Sand Boa | <i>Eryx johnii</i> | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 5 | 6 | |
| 35 | Reptile | Bengal Monitor Lizard | <i>Varanus bengalensis</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 36 | Reptile | Indian Rat Snake | <i>Ptyas mucosa</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | |
| 37 | Reptile | Checkered Keelback | <i>Xenochroptis piscator</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | |
| 38 | Reptile | Elongated Tortoise | <i>Indotestudo elongate</i> | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | |
| Total | | | | 32 | 31 | 8 | 71 | 8 | 6 | 6 | 0 | 0 | 13 | 0 | 0 | 2 | 4 | 3 | 3 | 37 | 34 | 21 | 92 |
| Exotic Species | | | | M | F | U | T | M | F | U | M | F | U | M | F | U | M | F | U | M | F | U | T |
| 39 | Bird | Cockatiel | <i>Nymphicus hollandicus</i> | 0 | 0 | 25 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 24 | 24 | |
| 40 | Bird | Bare Eyed Cockatoo | <i>Cacotua sanguinea</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| 41 | Bird | Sulphur Crested Cockatoo | <i>Cacotua sulphurea</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 | |
| 42 | Bird | Roseate Cockatoo | <i>Elophus roseicapilla</i> | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|------|-----------------------|--------------------------------|------------|------------|-----------|------------|-----------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|------------|------------|-----------|------------|---|
| 43 | Bird | Red and Blue Macaw | <i>Ares chloropterus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 44 | Bird | Blue and Gold Macaw | <i>Ares chloropterus</i> | 1 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 5 |
| 45 | Bird | African Grey Parakeet | <i>Paittacus erithacus</i> | 2 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 3 |
| 46 | Bird | Golden Pheasant | <i>Chrysolophus pictus</i> | 9 | 17 | 3 | 29 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 1 | 0 | 0 | 0 | 7 | 13 | 0 | 20 | |
| 47 | Bird | Lady Amhrest Pheasant | <i>Chrysolophus amherstiae</i> | 4 | 7 | 0 | 11 | 0 | 0 | 6 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 13 | |
| 48 | Bird | Reeves Pheasant | <i>Syrmaticus reevesii</i> | 3 | 6 | 0 | 9 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 2 | 7 | 0 | 9 | | |
| 49 | Bird | Silver Pheasant | <i>Lophura nycthemea</i> | 8 | 10 | 2 | 20 | 0 | 0 | 19 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 8 | 7 | 16 | 31 | | |
| 50 | Bird | Turaco | <i>Tauraco</i> | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | |
| Total of Exotic Birds | | | | 31 | 46 | 30 | 107 | 0 | 0 | 33 | 0 | 0 | 3 | 10 | 10 | 0 | 2 | 3 | 5 | 31 | 39 | 43 | 113 | |
| Grand Total | | | | 141 | 145 | 62 | 348 | 14 | 11 | 59 | 4 | 3 | 16 | 10 | 11 | 2 | 13 | 13 | 13 | 155 | 154 | 84 | 393 | |

DIRECTOR

27. Mortality of animals

MORTALITY LIST
PNHZ Park Darjeeling
1st April 2018-31st March 2019

| | Date | Animal | Sex | No. | Cause of Death |
|----------------|------------|----------------------|-----|-----|--|
| Mammals | | | | | |
| 1 | 01.04.2018 | Blue Sheep | M | 1 | Infighting |
| 2 | 16.04.2018 | Himalayan goral | F | 1 | Injury in the uterus |
| 3 | 22.04.2018 | Himalayan goral fawn | M | 1 | Undigested cartoon pieces in the stomach due to nibbling |
| 4 | 04.05.2018 | Markhor fawn | M | 1 | Congestion of the lungs |
| 5 | 14.5.2018 | Snow leopard | F | 1 | Undetected underdeveloped foetus on the left horn of the uterus which caused infection in the left abdominal area of the animal. |
| 6 | 15.5.2018 | Snow leopard cub | M | 1 | Acute respiratory infection. |
| 7 | 27.5.2018 | Markhor fawn | F | 1 | Ill nursing by the mother. |
| 8 | 13.06.2018 | Himalayan wolf pup | M | 1 | Acute pneumonia as evident by the fluid accumulation in the thoracic and abdominal cavity and pericardial sac. |
| 9 | 13.7.18 | Red Panda cub | U | 1 | Ill nursing by mother |
| 10 | 13.7.18 | Red Panda cub | U | 1 | Ill nursing by mother |
| 11 | 19.7.18 | Jungle cat | F | 1 | Due to septic condition of the uterus and the ovary due to infection. |
| 12 | 20.8.18 | Blue sheep fawn | F | 1 | Tentatively due to asphyxia from drowning. |
| 13 | 22.8.18 | Sambar Deer | F | 1 | Ill nursing. |
| 14 | 29.8.18 | Blue Sheep | F | 1 | Tentatively due to hypomagnesmia. |
| 15 | 21.9.18 | Sambar Deer | F | 1 | Accidental trampling by dam. |

| | | | | | |
|------------------|------------|-----------------------|---|-----------|--|
| 16 | 27.11.2018 | Barking Deer | M | 1 | Respiratory failure due to acute pneumonia. |
| 17 | 27.12.2018 | Blue Sheep | M | 1 | Cardio respiratory failure. |
| 18 | 15.02.2019 | Mishmi Takin | M | 1 | Due to profuse diarrhoea and haemorrhage in the intestine. |
| 19 | 06.03.2019 | Barking Deer | M | 1 | Due to severe nervine symptoms |
| 20 | 21.03.2019 | Leopard Cat | U | 1 | Illnursing |
| | | | | 20 | |
| Pheasants | | | | | |
| 1 | 23.4.2018 | Kaleej pheasant | F | 1 | Acute respiratory infection. |
| 2 | 26.4.2018 | Golden pheasant | M | 1 | Indigestion leading to excessive gas formation. |
| 3 | 05.05.2018 | Alexandrine parakeet | M | 1 | Multi organ failure |
| 4 | 26.5.2018 | Kaleej pheasant chick | U | 1 | Ill nursing by the mother. |
| 5 | 26.5.2018 | Kaleej pheasant chick | U | 1 | Ill nursing by the mother. |
| 6 | 2.7.18 | Red Jungle Fowl Chick | U | 1 | Ill nursing |
| 7 | 2.7.18 | Reeves Pheasant chick | U | 1 | Due to accident during flight in the wire mesh |
| 8 | 5.7.2018 | Reeves Pheasant | F | 1 | Due to acute respiratory failure |
| 9 | 9.7.18 | Reeves Pheasant chick | U | 1 | Due to accident as evident by the bleeding in the thoracic and abdominal cavity. |
| 10 | 15.7.18 | Reeves Pheasant chick | U | 1 | Due to accident as evident by the bleeding in the thoracic and abdominal cavity. |
| 11 | 3.8.18 | Reeves Pheasant | U | 1 | Due to ill nursing as blockage of feed seen in the neck region. |
| 12 | 6.8.18 | Reeves Pheasant | F | 1 | Due to dashing as evident by the bleeding in the thoracic and abdominal region. |
| 13 | 16.11.2018 | Reeves pheasant | F | 1 | Predated |
| 14 | 26.11.2018 | Reeves Pheasant | M | 1 | Dashing |
| 15 | 03.12.2018 | Cheer pheasant | M | 1 | Old age |
| 16 | 09.03.2019 | Cockatiel | U | 1 | Infighting |
| | | | | 16 | |

| Reptiles | | | | | |
|-----------------|---------|--------------------|---|----------|--|
| 1 | 21.7.18 | Rat snake | U | 1 | Due to hypothermia as evident by the condition of the major organ. |
| 2 | 26.7.18 | Sand Boa | U | 1 | Due to hypothermia. |
| 3 | 5.8.18 | Indian Rock Python | F | 1 | Due to hypothermia. |
| | | | | 3 | |

Dr. Joy Dey
Veterinary Officer
Padmaja Naidu Himalayan
Darjeeling, W.B.

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 |
|---|--------------------------|---|-----------------------|--------------------|---|
| 1 | 1:1.3 | Visitor's movement is orderly but one of the road to Himalayan Mountaineering Institute passed through the zoo as a result movement of the zoo cannot be prevented at any time. Alternative arrangement can be explored | With immediate effect | | Due to lack of space in the display area of the Park, there is no scope of having an alternative path for viewing the herbivore section neither the movement of the Himalayan Mountaineering Institute's vehicle can be restricted. |
| Administrative and Staffing Pattern: | | | | | |
| 2 | 2:2.3 | The zoo should have adequate scientific and technical personnel to support the officer in – charge in carrying out the responsibilities of housing, upkeep and healthcare of zoo animals, research and visitor education as specified below: 1. Curator- 1 No. 2. Veterinarian-1 No. 3. Education Officer- 1 No. 4. Biologist- 1 No | One Year | | The park has one Zoo Biologist and one education assistant on contract basis. The park has one veterinarian from the Animal Husbandry Department, Govt. of West Bengal on deputation. |
| Development and Planning | | | | | |
| 3 | 3:3.8 | All rescued endangered species when housed in the zoo should be reported to Central Zoo Authority. | With immediate effect | | No endangered animal species have been rescued by the park however whatever is rescued is reported to Central Zoo Authority. |
| Animal housing, display of animals and animal enclosures: | | | | | |
| 4 | 4: 4.1 | Since it is an old zoo located on a hilly terrain , it is difficult to make immersion exhibits at this point of time. However efforts should be made to have at least a couple of such enclosures. | Two years | | Bamboos have been planted in front of the carnivore enclosures. Small bush and hedges have been established in front of the aviaries. |

| Sr. No | Norm No.Under RZR, 2009 | Condition Stipulated | Time Period to Comply | Since when pending | Status with regard to compliance of the conditions |
|---|--------------------------------|---|------------------------------|---------------------------|---|
| 5 | 4:4.2 | Most bird enclosures have chain link mesh on all sides including top with no visual barrier between enclosures. This should be modified with partial covering on the top and the entire keeper's gallery with suitable screening between the adjacent enclosures including at Dow Hill. | Two years | | For visual barrier between two adjacent bird enclosures bamboo frames have been provided which has also given a naturalistic look to the enclosure. |
| 6 | 4:4.9(a) | Appropriate standoff barrier have not been provided in the herbivore enclosures because of dearth of space however some attempt may be made by placing potted plants and temporary SOB | Immediate effect | | Potted plants have been placed in front of the herbivore enclosures. |
| 7 | 4: 4.10 (a) | There are good signages but efforts should be made to make the fonts larger and the information in such a manner that it looks attractive and informative. | Six months | | Attractive and informative signages with larger fonts have been put up in all the enclosures of the display area. |
| Upkeep and healthcare of animals | | | | | |
| 8 | 5.2(6) | The portable water provided to the animals should be tested periodically | Six months | | The water supply is from the Municipality which is treated well. No other source of water is supplied to the animals. |
| Veterinary and infrastructure facilities | | | | | |
| 9 | 6.1 (c) | Squeeze cage facility to carnivores and herbivores should be provided as soon as possible | Six months | | New squeeze cages have been made for the carnivores and herbivores. |
| 10 | 6.1 (d) | Separate room/area for equipment cleaning and sterilization to be provided as soon as possible. | One year | | A separate room for equipment cleaning and sterilization has been done in the new hospital unit. |
| 11 | 6.2 (3) | Veterinarians and technicians are experienced. However, they need proper training for skill upgradation. | One Year | | The zoo veterinarian is sent to the annual workshop for veterinarians organised by Central Zoo Authority |

| Acquisition and breeding of animals: | | | | | |
|---|---------|---|------------|--|--|
| 12 | 9:9.10 | Mock drills should be conducted at regular intervals to safeguard against escape of the zoo animals from the premises of the zoo and in the vent of any accidental escape, immediate action shall be taken to retrieve the escaped animals. | Six months | | Mock drills are performed on small scale level during Thursdays around the bear enclosure. Emergency equipments such as fire extinguishers, water pipes, ropes, ladders, torch lights etc are always kept handy in all the animal beats. |
| Visitors facilities | | | | | |
| 13 | 12:12.3 | The zoo should make arrangements for differently abled persons for access and viewing wild animals at various animal enclosures | Six months | | The Visitors pathways are without steps which acts like ramp. |

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

MAMMALS

| Sl. No. | Common Name | Scientific Name |
|---------|----------------------------------|---------------------------------|
| 1 | Jackal | <i>Canisaures</i> |
| 2 | Fox | <i>Vulpes bengalensis</i> |
| 3 | Himalayan Palm Civet | <i>Paguma larvata</i> |
| 4 | Himalayan Yellow Throated martin | <i>Martes flavigula</i> |
| 5 | Hoary bellied Himalayan Squirrel | <i>Callosciurus pygerythrus</i> |
| 6 | Giant flying squirrel | <i>Petaurista philippensis</i> |
| 7 | Barking deer | <i>Muntiacus muntjak.</i> |
| 8 | Leopard Cat | <i>Prionailurus bengalensis</i> |
| 9 | Assam macaque | <i>Macaca assamensis</i> |

BIRDS

| | | |
|---|----------------------------|---------------------------------|
| 1 | Green tailed sunbird | <i>Aethopyga nipalensis</i> |
| 2 | Rufous winged fulvetta | <i>Alcippe castaneiceps</i> |
| 3 | Little spider hunter | <i>Arachnothera longirostra</i> |
| 4 | Rusty flanked tree creeper | <i>Certhia nipalensis</i> |

| | | |
|----|----------------------------------|---------------------------------|
| 5 | Common green magpie | <i>Cissa chinensis</i> |
| 6 | Large billed crow | <i>Corvus macrorhynchos</i> |
| 7 | Gray headed canary flycatcher | <i>Culicicapa ceylonensis</i> |
| 8 | Grey-capped pygmy woodpecker | <i>Dendrocopos canicapillus</i> |
| 9 | Darjeeling woodpecker | <i>Dendrocopos darjellensis</i> |
| 10 | Fulvous breasted woodpecker | <i>Dendrocopos macei</i> |
| 11 | Verditer flycatcher | <i>Eumyias thalassina</i> |
| 12 | Snowy browed flycatcher | <i>Ficedula hyperythra</i> |
| 13 | Little pied flycatcher | <i>Ficedula westermanni</i> |
| 14 | Chestnut crowned laughing thrush | <i>Garrulax erythrocephalus</i> |
| 15 | Hill myna | <i>Gracula religiosa</i> |
| 16 | Rufous sibia | <i>Heterophasia capiatrata</i> |
| 17 | Black bulbul | <i>Hypsipetes leucocephalus</i> |
| 18 | Black eagle | <i>Icinaetus malayansis</i> |
| 19 | Grey backed shrike | <i>Lanius tephronotus</i> |
| 20 | Silver eared mesia | <i>Leiothrix argentauris</i> |
| 21 | Red tailed minla | <i>Minla ignotincta</i> |
| 22 | Chestnut tailed minla | <i>Minla strigula</i> |

| | | |
|----|------------------------------------|----------------------------------|
| 23 | Chestnut bellied rock thrush | <i>Monticola rufiventris</i> |
| 24 | White tailed robin | <i>Myiomela leucora</i> |
| 25 | Blue whistling thrush | <i>Myophonus caeruleus</i> |
| 26 | Large niltava | <i>Niltava grandis</i> |
| 27 | Mountain tailorbird | <i>Orthotomus cuculatus</i> |
| 28 | Green backed tit | <i>Parus monticolus</i> |
| 29 | Urasian tree sparrow | <i>Passer montanus</i> |
| 30 | Long tailed minivet | <i>Pericrocotus ethologus</i> |
| 31 | Scarlet minivet | <i>Pericrocotus flammeus</i> |
| 32 | | <i>Phylloscopus affinis</i> |
| 33 | Greenish tree warbler | <i>Phylloscopus trochiloides</i> |
| 34 | Lesser yellownape | <i>Picus chlorolophus</i> |
| 35 | Greater yellownape | <i>Picus flavinucha</i> |
| 36 | Alexandrine parakeet | <i>Psittacula eupatria</i> |
| 37 | Rose ringed parakeet/ green parrot | <i>Psittacula krameri</i> |
| 38 | Black crested bulbul | <i>Pycnonotus flaviventris</i> |
| 39 | White throated fantail | <i>Rhipidura albicollis</i> |
| 40 | White browed fantail | <i>Rhipidura aureola</i> |

| | | |
|----|--------------------------|-------------------------------|
| 41 | Plumbeous water redstart | <i>Rhyacornis fuliginosus</i> |
| 42 | Chestnut crowned warbler | <i>Seicercus castaniceps</i> |
| 43 | White tailed nuthatch | <i>Sitta himalayensis</i> |
| 44 | Chestnut headed tesia | <i>Tesia castaneocoronata</i> |
| 45 | Grey winged black bird | <i>Turdus boulboul</i> |
| 46 | Whiskered yuhina | <i>Yuhina flavicollis</i> |
| 47 | Stripe throated yuhina | <i>Yuhina gularis</i> |
| 48 | Kalij Pheasant | <i>Lophura leucomelanos</i> |
| 49 | Red Jungle fowl | <i>Gallus gallus</i> |

REPTILES

| | | |
|---|------------------------|------------------------------|
| 1 | The common house gecko | <i>Hemidactylus frenatus</i> |
| 2 | Gray's Skink | <i>Sphenomorphus indicus</i> |
| 3 | Common Skink | <i>Mabuya carinata</i> |
| 4 | Green Trinket Snake | <i>Elaphe prasina</i> |