



सत्यमेव जयते

# ANNUAL REPORT

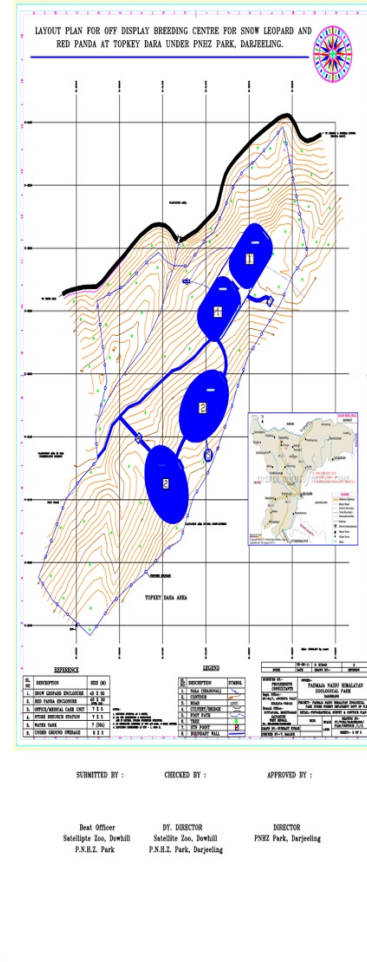
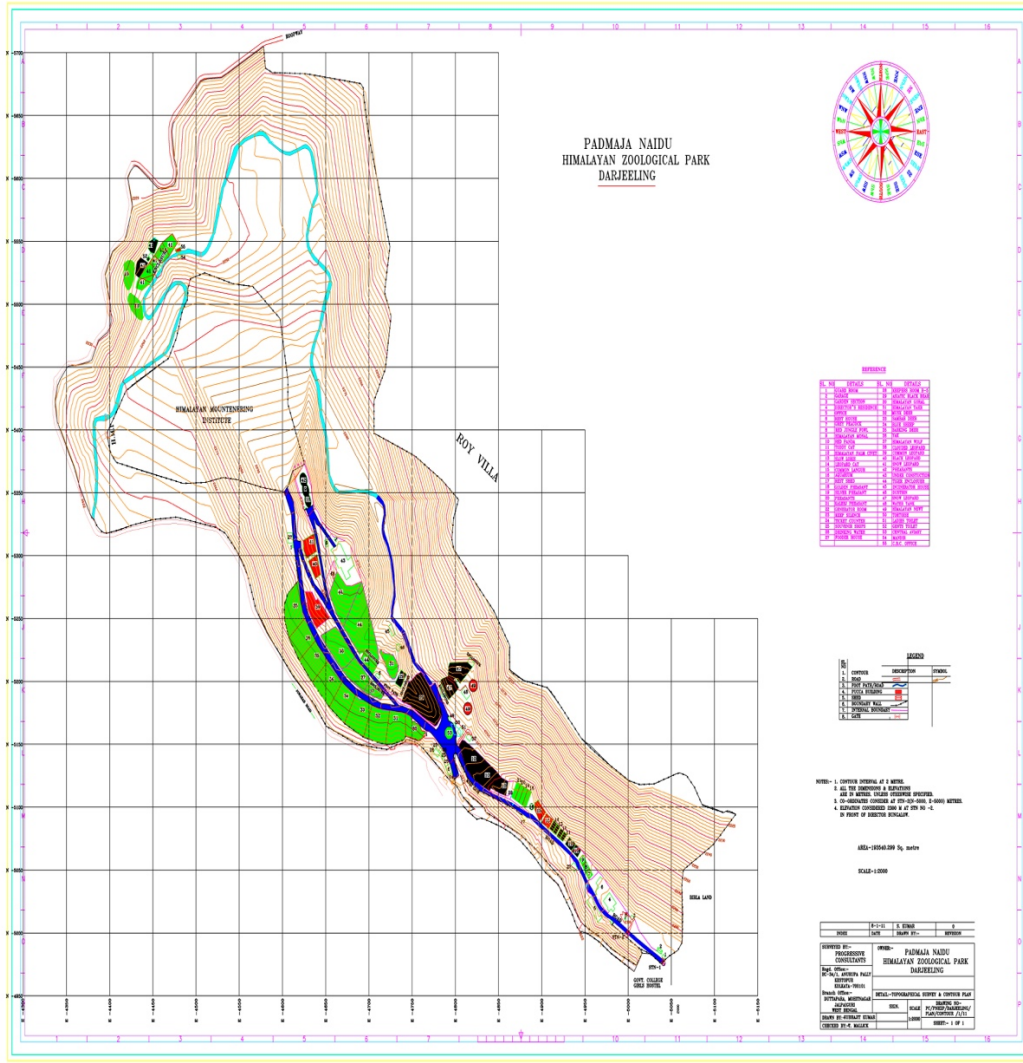
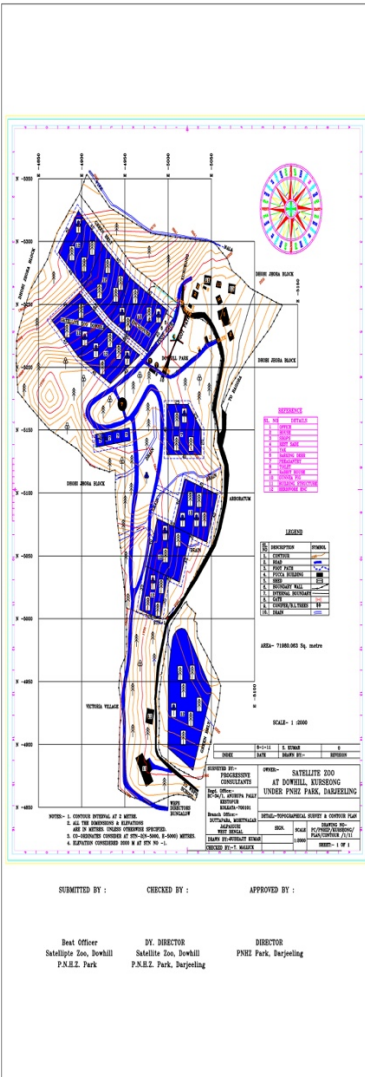
2013-2014

**Padmaja Naidu Himalayan Zoological Park**

**Darjeeling (West Bengal) India**

**PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK, DARJEELING, WEST BENGAL**  
**AT A GLANCE**

Year of Establishment	:	1958
Area	:	Main Zoo: - 67.56 Acres Dow Hill (Conservation Breeding centre) - 4.65 hectares Topkeydara (Conservation Breeding Centre) - 5 hectares
Category of Zoo	:	Small
Altitude	:	7000 ft (2150 mts) approx
Temperature	:	20°C to 26°C highest and 1°C to 5°C lowest
Mailing Address	:	Padmaja Naidu Himalayan Zoological Park Jawahar Parbat Darjeeling 734 101
Telephone No.	:	0354 – 2254250 (Offc) 2253709 (Offc)
Fax No.	:	0354 – 2252522 (Offc)
E-Mail	:	<a href="mailto:pnhzip@yahoo.com">pnhzip@yahoo.com</a>
Web	:	<a href="http://www.pnhzip.gov.in">www.pnhzip.gov.in</a>
Zoo Timings	:	8.30 am to 4.00 pm (winter) 8:30 am to 5:30 pm (summer)
Closing Day	:	Thursday
Annual Visitors during the year 2013-14	:	Nos. of Tourists visited the Zoo & BNHM - <b>395289+28858</b> <b>=4,24,147</b>
No of Animal Species & Birds (as on 31 <sup>st</sup> March, 2014	:	1) <b>1</b> Species of Amphibian 2) <b>7</b> Species of Birds 3) <b>21</b> Species of Mammals 4) <b>1</b> Species of Reptile 5) <b>11</b> Species of Pheasant
Grant of Recognition by Central Zoo Authority to PNHZ Park vide their No F.No. 19-20/92-CZA(325) (Vol. VI)(M)/186 dtd 13/07/2011	:	As small Category Zoo valid upto 31 <sup>st</sup> July, 2015
Membership granted to PNHZ Park by World Association of Zoos and Aquariums ( WAZA)	:	w.e.f 14 <sup>th</sup> Sept, 2009



## Entry fee for the Zoo

### A. MAIN ZOO

Sl. No.	Category	Entry Fee for PNHZ Park ( Rs. )
1.	Visitors from SAARC Countries	20.00
2.	All other foreigners	50.00
3.	Children below 6 years age	Free
4.	Students ( in groups of 10 and above sponsored by their respective schools )	50% of Sl. no. 1 above.

Distance : Padmaja Naidu Himalayan Zoological Park is 85 Km from Bagdogra Airport which is served by daily flights from Delhi, Kolkata, Patna & Guwahati. The Railway Junction, New Jalpaiguri, is also of the same distance and is well connected with all Major centers of the country. Siliguri, the major developing city is 2<sup>1</sup>/<sub>2</sub> hrs drive by car and 6 hrs. by Toy Train.

Best time to visit : March to June and September to January is the best time to visit Padmaja Naidu Himalayan Zoological Park.

Climate :

- March – June : Pleasant Weather
- July – September : Rainy Season
- September – October : Fair Warm Climate
- November – December : Cold
- January – February : Very Cold

## From pages of History

1. **1980- 81-** Granted permission by the Forest Directorate for capturing of some rare high- altitude fauna and also conducting research on them. Yak calves, Barking deer, Himalayan Black Bear, Mongoose procured from the wild. 52 white rats and 4 rabbits purchased with a view to establish an educative children's corner and also using them in the contemplated research programme. Approval of 7 collaborative research schemes submitted to the Department of Science & Technology on 16.12.80 urging financial assistance. Regular lectures by the Director of the Park for popularization of high altitude fauna and flora. Prominent trees within the park area labeled with Scientific names, to arouse interest in nature study. Construction of direct pipe- line connection from Jalaphar area under joint project of the H.M.I and the society within the zoo campus
2. **1981 – 82---** Partial success achieved in procuring some species of the hill region. Collection of the park shows steady increase in number through departmental trapping, purchase and by way of birth. Red panda, Satyr Tragopan etc are worth mentioning. Exchange programme begins. 1 pair of Silver Pheasant, 1 pair of Bantam Pheasant. From Alipore Zoological Garden, Calcutta. Negotiations with other Zoological Gardens in India and abroad are being continued for securing exhibits on exchange basis. A mini laboratory equipped with a microscope, centrifuge machine and reagents set up. Research project "Studies on the Ecology, Reproductive Biology and Conservation of the endangered Salamander of the Eastern Himalayas, *Trylotritition verrucosus*" approved by the Dept. of Science and Technology.
3. **1982 -83---** Received 1 pair of Silver Pheasant, 1 pair of Golden Pheasant from Alipore Zoological Garden
4. **1984-85----** Birth of two Ussuri tigers (*Panthera tigris altaica*). 1 male born on 31.10.73 and 1 female on 8.7.82. A pair of Ussuri (Amur) Tigers received from Helsinki Zoo as a gift on 6.2.85.
5. **1985-86----** The Snow Leopard Breeding Centre starts functioning with an initial pair. Procured one Royal Bengal Tiger (*Panthera tigris*) from the Forest Department as a gift on 9.5.85
6. **1986-87--** A pair of Snow Leopards received from Zurich Zoo, Switzerland on loan. A pair of Ussuri (Amu)tigers received from Helsinki Zoo, Finland
7. **1987- 88---** The Chairperson of International Snow leopards Trust accompanied by a team of experts visited the zoo in October 1988, after getting fully satisfied with the standards of management and upkeep of the first pair at PNHZ Park, the loan of a second pair was cleared by the trust.
8. **1989-90---** Tibetan wolf added to the stock, a pair received from Shimla zoo in exchange for a pair of Tragopan pheasants. Success in breeding the rare Tragopan pheasant and Kalij pheasant
9. **1990-91--** Received a pair of Ussuri tiger from Whipsnade Zoological Park of the London Zoological Society on 26. 2.90. Two cubs of ussuri tiger born.
10. **1993-94---** The zoo has already started a captive breeding project on Red panda in collaboration with Rotterdam zoological and Botanical gardens, the Netherlands, with an intention to reintroduce the animal in to the wild if needed.
11. **1994-95--** Birth of first Red Panda. 20.6.94
12. **1996-97--** Received a pair of Himalayan Thar from Helsinki Zoo and donated a pair of red panda to Gangtok Zoo, Tibetan wolf (one pair), Siberian Tiger (one pair) to Nainital Zoo. Conducted a training Programme for the staff of Sikkim Zoo.
13. **1997-98-** Construction of Store kitchen.
14. **1998-99-** An audio visual Himalayan Nature's Interpretation Centre set up at the zoo depicting dioramas of different Himalayan flora and fauna and their behavior and mobility in their natural habitat. Construction of an underground water storage tank. Construction of enclosures for blue sheep and clouded leopard. One building for post moterm facilities have been built up. , enclosures modified by planting numerous types of shrubs, climbers and flowering plants thus giving the zoo more greenery and natural outlook. Numerous bamboo plants including climbers have been grown in

15. **1999-2000-** A nature Interpretation Centre was constructed for 14.50 lac and named Himalayan Nature Interpretation Centre. Old office complex was converted to a rest house of the zoo with an expenditure of 4.00 lakh. Group D staff quarter repaired. A generator of 45 kwatts purchased for supply in the zoo.
16. **2001-2002** Birth of Red Panda and Himalayan Thar. Pair of Common Leopard given to Gangtok Zoo, And another pair to Itanagar Zoo in exchange for 2 female Black bears, a male clouded leopard and two male slow loris. Five old and aged leopards in the zoo were exchanged with same number of younger animals of the species from the Jaldapara Rescue Centre. A pair of Barking deer brought from Gangtok Zoo. The GB Meeting on 22.2.02 agreed upon restocking of wild population of red Panda in the Singhalila National Park by the Captive Red Pandas of Darjeeling Zoo. State wildlife Advisory Board in its meeting on 1.3.2002 cleared the Project. Hair follicles for DNA study of the Red pandas in the zoo sent to WII .results awaited for taking further steps like arranging radio collars. Etc. The Lebung forest of 39 acres handed over to the Forest Department for management.
17. **2002-2003** A Discovery T.V. team from U.S.A for “Jeff Corwin Experience” in Animal Planet visited the zoo to cover Red panda Breeding Programme on 16.4.2002 and similar Programmes on Snow Leopard and Red Panda shown in various National channels. The Zoological Park co-ordinated the first ever complete census of wild animals in Darjeeling Hills. Project Red Panda is on the threshold of achieving its ultimate objective of releasing Zoo bred Red Pandas in the Singhalila National Park .all preparations like identification of the animals, creation of intermediary release facility for soft release, taxonomic status and genetic variability study and pre-release monitoring of habitat completed.
18. **2003-04--** Red Panda “Mini” and “Sweety” sent to Intermediary release facility on 14<sup>th</sup> November 2003.Red Panda “Neelam” and “Dolma” sent to Intermediary release facility. At Gairibas on 6<sup>th</sup> November 2003. Two Grey Peacock Pheasant acquired from Alipore Zoological Garden Kolkata in lieu of 3 Khaleej Pheasant (1:2). 3 Sambhar (1:2) received from Sanjay Gandhi Zoological Park, Patna.2 Japanese Green Pheasants (1:1) and 3 silver Pheasant (1:2) were transferred to Sanjay Gandhi Zoological Park.Post – release monitoring of the released animal by radio-collaring them.
19. **2004-2005-** A remarkable successful breeding of the Tibetan Wolves achieved with 13 births recorded. Births of four cubs of Snow leopard. Under animal exchange three Musk deer (1:2) acquired from Nainital Zoo in lieu of two Snow leopard (1:1) and five Tibetan wolves (2:3). Five Himalayan Monal (2:3) and Five Red Jungle Fowl (2:3) acquired from Shimla Zoo in exchange of two Snow leopard (1:1) and six Tibetan wolves (3:3) from PNHZ Park. One leopard cat (0:1) and four Kaleej Pheasant (2:2) received from Sikkim zoo and two snow leopard (1:1) and four Tibetan wolf (2:2) given to them.
20. **2006-2007--** Birth of one red Panda, two birth of barking deer, 2 births of Sambhar, 5 births of Golden Pheasant,8 births of lady Amherst Pheasant, 3 Births of silver Pheasant and 13 births of red Jungle fowl.2 female Royal Bengal Tiger were acquired from Khutimari, Jalpaiguri Forest Division on 19.10.2006. 2 common langurs acquired from Kolkata, Forest Department on 7.3.07. 1 male golden Pheasant and 2 female Reeves pheasant brought from Kolkata zoo on 31.10.2006.1 male and 1 female lady Amherst pheasant given to Coochbehar Forest Division.1 male and 2 female Lady Amherst Pheasant given to Kolkata Zoo on 11.11.2006 1 male and 1 female of Silver Pheasant and Golden pheasant given to Gangtok Zoo. Workshop held on “Preparation of Zoo Management Plan” on 9<sup>th</sup> & 10<sup>th</sup> November 2006. Regional workshop held on developing “master Education Plan for Zoos” on 7<sup>th</sup> & 8<sup>th</sup> June 2007.
21. **2008-2009-** An area of 4.645 Ha of Dow Hill Deer park have been taken over from the Kurseong Division under Directorate of Forests, West Bengal on 25.02.2009 for establishment of Satellite Zoo under Padmaja Naidu Himalayan Zoological Park, Darjeeling, the management plan for satellite zoo is incorporated in Padmaja Naidu Himalayan Zoological Park, Darjeeling.
22. **2009-2010-** PNHZ Park was granted membership by the World Association of Zoos and Aquariums (WAZA) on 14<sup>th</sup> September, 2009 at Berne. Coming under the umbrella of “WAZA” Organisation will help and support the fulfillment of the Zoological Park’s Mission and in being able to continue the Protection and Conservation of Eastern Himalayan Endangered Species. Padmaja Naidu Himalayan Zoological Park Society has been dissolved in its final Governing Body Meeting held on 3/11/2009 at Kolkata. The Park as now onwards will be registered under the Zoo Authority of West Bengal. The Bengal Natural History Museum which was under the Wildlife

Division I was handed over to the Darjeeling Zoo on 7<sup>th</sup> January 2010. The construction of the museum within the zoo premises is in the process and very soon will be shifted from its original location. The museum will be further upgraded and will serve the purpose of educating and entertaining the visitors. The Zoo received three pairs of Himalayan Tahr and two pair of Blue sheep from Okinawa Kids Foundation, Okinawa Japan. This was an animal exchange after more than twenty years.

23. **2010-2011-** An international exchange programme took place between Auckland Zoo, New Zealand and PNHZ Park, Darjeeling, as one zoo born male Red Panda was sent to Auckland Zoo, New Zealand and one female Red Panda was brought to Darjeeling Zoo under the Animal Exchange Programme. The digitization of the items of Bengal Natural History Museum as handed over to PNHZ Park on 7<sup>th</sup> January, 2010 was done, by photographing each item and also providing information of the items thus making it easier to preserve, access and share in form of a book. Closed Circuit Television was installed at different locations of the park to monitor the presence and activities of people for enhanced security purposes and to keep areas under constant surveillance and also at the Conservation Breeding Centre for documenting the Snow leopards, upgradation of visitors facilities etc. Different enrichment activities for Asiatic Black bear (*Ursus thibetanus*) was done. The tree at the peripheral areas/display areas of the Park was labeled for the convenience of the visitors, students, researchers etc. with name plates which includes- scientific name, local name and family. Contouring of the Zoo and Dow Hill area has been done indicating landforms and elevation, hydrography, transportation, vegetation boundaries, urban areas, buildings and a variety of other features which represents a fantastic response for educators as well. The site consisting of 5 hectares of land at Topkedara for construction of off Display Conservation Breeding Centre for Snow leopard (*Uncia uncia*) and Red Panda (*Ailurus fulgens fulgens*) was handed over to Padmaja Naidu Himalayan Zoological Park. A visitor's survey was conducted about planning to start a special educative facility that included guided tour of the zoo by zoo volunteers.
24. **2011-2012-** Padmaja Naidu Himalayan Zoological Park received 2:3 Temminck's Tragopan (*Tragopan temminckii*) and 1:3 Satyr Tragopan (*Tragopan satyra*) On 02.08.2011 from Paradise Wildlife Park, United Kingdom. Inauguration of Satellite facility at Dow Hill, Kurseong on 07.12.2011 by Shri Hiten Barman Hon'ble Minister in charge Department of Forest, Govt. of West Bengal and Dr. Rohit Sharma Hon'ble MLA of Kurseong Constituency along with other dignitaries and Forest Officials.
25. **2012-2013 -** Acquisition of Temminck's Tragopan, Satyr Tragopan, one female snow leopard (0:1), Retirement of Store Keeper Mr.Nirmal Bhujel on 28.02.2013. Genetic analysis of captive stock of Red Panda and Snow leopard. Completion of Conservation Breeding Centre for Red panda and Snow Leopard at Topkey dara. Closed Circuit television in enclosures of Temminck's Tragopan and Clouded leopard. Completion of seven unit pheasant at Dowhill Pheasant breeding center at Dowhill, Kurseong.
26. **2013- 14 –** Acquisition of 0:2 Snow leopard from Lodz Zoo, Germany, Exchange programme with Pt. Govind Ballabh Pant High Altitude Zoo, Nainital, Alipore Zoological Gardens, Kolkata, Rajkot Zoo, Gujarat, Himalayan Zoological Park, Sikkim, Mini Zoo, Jhargram and National Zoological park, Delhi. Completion of a Short term Research Project on "Study of Snow leopard" funded by Central Zoo Authority. A new off-display Conservation Breeding Centre for Snow leopard (*Uncia uncia*) and Red Panda (*Ailurus fulgens*) at Topkedara funded by the Govt.of West Bengal and Central Zoo Authority, MoEF was inaugurated on 08.10.2013 by the Honorable Minister in Charge (Forest) Shri. Hiten Barman along with North Bengal Development Minister Shri. Gautam Deb. The inauguration was followed up by the release of a pair of Snow leopard (*Uncia uncia*) by the two ministers.

**NAME OF THE DIRECTORS HOLDING CHARGE OF PNHZ PARK**

Sl	NAME	FROM	TO
1	Sri D K Dey	14/08/1958	01/08/1978
2	Sri J Sammaddar	02/08/1978	15/10/1978
3	Dr A K Putatunda	16/10/1978	09/01/1980
4	Dr R K Lahiri	10/01/1980	08/07/1984
5	Sri A B Chowdhury IFS	09/07/984	10/09/1984
6	Sri C Chatterjee IAS	11/09/1984	07/11/1984
7	Sri G Balagopal IAS	08/11/1984	01/02/1985
8	Dr R K Lahiri	01/02/1985	25/06/1987
9	Sri D P Patra IAS	25/06/1987	07/12/1987
10	Sri V Rishi IFS	07/12/1987	27/04/1992
11	Sri N C Bahuguna IFS	27/04/1992	25/07/1994
12	Sri Gopal Krishna IAS	25/07/1994	02/09/1994
13	Sri N C Bahuguna IFS	02/09/1994	19/12/1995
14	Sri S Dhaundyal IFS	19/12/1995	07/02/1996
15	Sri N C Bahuguna IFS	07/02/1996	16/08/1998
16	Sri D Biswas IFS	17/08/1998	03/08/2000
17	Dr B R Sharma IFS	10/08/2000	06/04/2004
18	Sri S Dhaundyal IFS	06/04/2004	20/02/2006
19	Sri B R Shewa WBFS	10/02/2006	13/02/2006
20	Sri A K Jha IFS	13/02/2006	30/07/2010
21	Sri J.B. Chettri WBFS	30/07/2010	31/08/2010
2	Sri A.K. Jha IFS	31/08/2010	TILL DATE



## **CHAPTER - 1**

### **1.1. INTRODUCTION**

The Padmaja Naidu Himalayan Zoological Park Darjeeling formerly known as Himalayan Zoological Park, Darjeeling was established on 14<sup>th</sup> August, 1958. The Park is located at an altitude of 7000 ft (2150m) in Jawahar Parbat ( Birch Hill ), Darjeeling ( West Bengal ), India. 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 19<sup>th</sup> 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. The Zoological Park is eminently suitable for housing and breeding of the animals from foot hills to the alpine zone as this is the optimal altitudinal zone for the purpose.

Though categorized as a small Zoo, it is one of the leading zoos of the world in terms of the objectives and its conservation vision. Padmaja Naidu Himalayan Zoological Park, (P.N.H.Z.P) also popularly known as Darjeeling Zoo, can also rightfully boast of being the only Zoo in South East Asia with one of the most successful conservation breeding programme of highly endangered Snow Leopard and Red Panda. This is the only Zoo in the world to breed the endangered Tibetan Wolf in captivity.

Today, the Zoo has a stable and genetically healthy population of Red Pandas and has released three Zoo bred Red Pandas back to the wild, more specifically in the Singalila National Park, Darjeeling, which is the natural habitat of Red Panda, holding a small Red Panda population. This is a major conservation step of Darjeeling Zoo, to supplement the dwindling population of Red Pandas in the wild with the captive stock.

This report further elaborates upon all the events of the zoo carried out in an effort to implement its objectives during the year 2006-2007.

#### **1.1.2 MISSION STATEMENT**

“Assisting the National efforts for conservation of the Eastern Himalayan Ecosystem by ex-situ conservation breeding of its endangered fauna, conservation education and research to augment these conservation initiatives”.

### **1.2. OBJECTIVES**

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.

### **1.3. THE GOVERNING BODY**

The Padmaja Naidu Himalayan Zoological Park, Darjeeling, was under the administrative control of the Department of Forests, Govt. of West Bengal and was converted into a Registered Society in January 1972 under the West Bengal Societies Registration Act. The Memorandum of Association and Regulations of the Society were altered during the year 2002-2003 which the Registrar, Firm Societies and Non-trading Corporation, West Bengal gave its acceptance to the same on 09.08.2002 vide his No. S/482 dated 09.8.2002. Again later on the Park was handed over to the West Bengal Zoo Authority a Society under administrative control of the Deptt. of Forests, Govt. of West Bengal Order No. 3842/1(13)-For/FR/O/11M-7/2002 dated 14<sup>th</sup> Sept, 2010 vide Deptt. of Forests Govt. of West Bengal Order No. 3841/1(13)-For/FR/O/11M-27/2002 dated 14<sup>th</sup> Sept., 2010. Under the West Bengal Zoo Authority, the Governing Body, consist of the following members -

- |   |   |                |
|---|---|----------------|
| 1. The Chief Secretary to the Govt. of West Bengal  | - | Chairman       |
| 2. Addl. Chief Secretary to the Govt. of West Bengal Dept. of Forest                      | - | Vice- Chairman |
| 3. Secretary to the Govt. of West Bengal, Dept of Finance                                 | - | Member         |
| 4. The Principal Chief Conservator of Forests, West Bengal                                | - | Member         |
| 5. The Principal Chief Conservator of Forests<br>(Wildlife & Biodiversity) and CWLW, W.B. | - | Member         |
| 6. Member Secretary, Central Zoo Authority  | - | Member         |
| 7. Member Secretary, Zoo Authority West Bengal  | - | Member         |
| 8. Director, Animal Husbandary & Vet, Services, W.B.                                      | - | Member         |
| 9. Director, Padmaja Naidu Himalayan Zoological Park                                      | - | Member         |
| 10. Director, Zoological Gardens, Alipore, Kolkota  | - | Member         |
| 11. Chairman, Sri Sankar Dhar, People's for Animals, Alipurduar                           | - | Member         |
| 12. Chairman, Sri Nantu Paul, Siliguri Municipal Corporation                              | - | Member         |
| 13. President, Sri Mihir Chakraborty,<br>All Backward Class Relief & Development Mission  | - | Member         |

The establishment of the Zoological Park is headed by one full time Director in the rank of Conservator of Forests. The Director, as the Principal Executive Officer of the Park is responsible for the day to day management and administration of the affairs of the Park under the general direction and guidance of the Governing Body and the Chairman. For the better control and co-ordination among different sections and works in the Zoological park a separate section known as "Director's Personal Section" has been created and housed in the main administrative building. The Section is headed by the PA to the Director and assisted by one driver and one orderly peon. Management of the conference room/auditorium, visitor's rooms, rest house, zoo vehicle, telephones, mobile printer, scanner, Laptop, digital camera, video camera, still camera, LCD projector, Slide projector, Overhead projector, TV/VCR, Fax machine and Photo copier, computer networks etc. are other responsibilities of the sections.

## CHAPTER – 2

### 2.1. ADMINISTRATIVE SECTION

It is housed on the top floor of the administrative building next to the Director's Personal Section and is headed by the Head Clerk. The section has been further divided into two sections namely Account Section with one Accountant, one Clerk Typist, one Ticket Clerk and one Office Peon and the Establishment Section with one UDC and one LDC. The entire establishment section of the Zoological Park of 58 personnel is organized into 5 different wings and ten different sections. The total staff strength as on 31.3.2013 is stated below.

#### ESTABLISHMENT (As on 31.3.2014)

Sl. No.	Designation	Sanctioned Strength	Existing Strength	Vacancy
1.	Director	1	1	0
2.	Dy. Director	1	0	1
3.	Asst. Director-Cum-Veterinary Officer	1	0	1
4.	Scientific Officer	1	0	1
5.	Estate Officer	1	1	0
6.	Education Assistant	1	0	1
7.	Head Clerk	1	1	0
8.	Accountant	1	1	0
9.	Stenographer	1	1	0
10.	UDC	1	1	0
11.	Supervisor(Animals)	1	1	0
12.	Store Keeper	1	1	0
13.	Laboratory Assistant	1	1	0
14.	Asst. Supervisor (Animals)	1	1	0
15.	Forester	1	0	1
16.	Veterinary Compounder	1	1	0
17.	LDC	1	1	0

18.	Clerk Typist	1	1	0
19.	Ticket Clerk	1	1	0
20.	Driver	1	0	1
21.	Black Smith-Cum-Carpenter	1	1	0
22.	Research Attendant	1	1	0
23.	Veterinary Attendant	1	0	1
24.	Zoo Keepers	14	14	0
25.	Forest Guards	6	3	3
26.	Cook	1	1	0
27.	Mali	4	3	1
28.	Darwan	2	1	1
29.	Office Peon	1	1	0
30.	Orderly Peon	2	2	0
31	Sweepers	5	5	0
	<b>Total -</b>	<b>58</b>	<b>45</b>	<b>12</b>

During the year 2013-14 following changes took place in the staff pattern –.

- a) Shri. J.B. Chettri WBFS who had joined in 11<sup>th</sup> August 2008 as the Deputy Director of the Park got transferred on 20.01.2014 and joined as a Divisional Forest Officer, Kurseong Soil Conservation Division.
- b) Shri.. Lilbaran Roy, Gardner of the park retired on 01.06.2013 after serving the Park for a period of thirty- three years

## 2.2. ACCOUNTS

This subsection is responsible for all matters pertaining to revenue and expenditure. As the Zoological Park is a joint venture of Govt. of India and Govt. of West Bengal, the Park is receiving maintenance budget from the Ministry of Environment and Forests, Govt. of India and Deptt. of Forests, Govt. of West Bengal. The Park is still receiving some maintenance funds from the Deptt. of School Education, Govt. of West Bengal, though the same has been very irregular.

### Receipts & Expenditure of the Zoological Park ( Society ) during the Year 2013-14

Source of Fund	Receipts in Rs		Expenditure in Rs	
	Non-plan	Plan	Non-plan	Plan
1. Zoo Authority of West Bengal under Admn Control of Deptt. of Forests, GOWB	<b>7,03,82,500.00</b>		<b>7,03,82,500.00</b>	
2. Zoo Authority of West Bengal under Admn Control of Deptt. of Forests , GOWB		1,77,97,326.00		1,77,97,326.00
3. Dept. of Tourism, GOWB		25,26,000.00		25,26,000.00
4. Central Zoo Authority, Govt. of India	32,27,000.00	1,26,20,000.00	32,27,000.00	1,26,27,000.00
5. Department of School Education, GOWB	NIL		NIL	NIL
6. Ministry of Environment and Forests, Govt. of India	9,00,000.00		9,00,000.00	
7. Ministry of Culture, Govt. of India		1,25,00,000.00		30,33,299.00
4. Gate fee Collection				
a. Zoo Ticket				
b. BNHM (Ticket)	87,04,910.00			87,04,910.00
c. Zoo camera	2,83,280.00			2,83,280.00
d. Animal Adoption	6,37,130.00			6,37,130.00
e. Guest House	1,73,500.00			1,73,500.00
f. Souvenir shop	37,000.00			37,000.00
g. Fees from rental stalls	3,23,171.00			3,23,171.00
	44,550.00			44,550.00
<b>TOTAL</b>	<b>8,47,13,041.00</b>	<b>4,54,43,326.00</b>	<b>8,47,13,041.00</b>	<b>3,59,76,625.00</b>
<b>GRAND TOTAL – Rs. 13,01,56,367.00 (Receipt)</b>				

Year	Govt. of India			Govt. of W.B.		
	MOEF Non Plan	CZA-Plan	Non Plan	Education Deptt	Other Sources	State Plan
1980-81	2,35,000.00	NA	3,38,500.00	NA	5,00,000.00	NA
1981-82	3,90,000.00	NA	3,25,000.00	NA	4,95,150.00	NA
1982-83	4,51,000.00		4,00,000.00		8,64,000.00	
1983-84	6,24,000.00	NA	3,75,000.00	NA	2,50,000.00	NA
1984-85	8,75,000.00	NA	9,00,000.00	NA	NA	NA
1985-86	1,25,000.00	NA	8,24,000.00	NA	NA	NA
1986-87	8,78,860.00	NA	8,00,000.00	NA		NA
1987-88	12,00,000.00	NA	9,64,000.00	NA	NA	NA
1988-89	NIL	NA	7,00,000.00	NA	NA	13,57,000.00
1989-90	10,70,000.00	NA	10,00,000.00	NA	NA	NA
1990-91	5,67,000.00	9,00,000.00	12,00,000.00	NA	NA	8,29,000.00
1991-92	14,76,000.00	2,22,000.00	10,50,000.00	NA	NA	NA
1992-93	Nil	NIL	6,25,000.00		NA	20,65,000.00
1993-94	6,40,000.00	19,75,000.00	23,30,000.00	NA	NA	3,00,000.00
1994-95	12,40,000.00	13,42,000.00	25,30,000.00	NA	NA	26,00,000.00
1995-96	6,40,000.00	18,55,000.00	43,39,000.00	NA	NA	19,50,000.00
1996-97	6,40,000.00		51,79,750.00	NA		20,68,000.00
1997-98	Nil	35,19,000.00	55,53,000.00	NA	NA	17,99,720.00
1998-99	15,62,000.00	7,69,000.00	68,81,250.00	NA	NA	14,50,000.00
1999-00	16,00,000.00	45,74,000.00	85,15,200.00	NA	6,00,000.00	22,50,000.00
2000-01	10,00,000.00	23,00,000.00	1,17,63,400.00	NA	NA	NA
2001-02	Nil	65,23,000.00	1,85,57,670.00	NA	NA	NA
2002-03	NIL	51,46,000.00	1,47,20,068.00	NA	NA	68,46,551.00
2003-04	21,68,000.00	58,21,650.00	1,58,45,921.00	NA	NA	6,00,000.00
2004-05	NIL	16,00,000.00	1,60,44,588.00	NA	NA	7,56,000.00
2005-06	10,62,000.00	29,75,000.00	1,78,14,750.00	NA	NA	9,15,080.00
2006-07	9,56,000.00	30,50,000.00	1,98,29,142.00	41,910.00	75,000.00	39,52,988.00
2007-08	10,00,000.00	29,51,000.00	2,19,80,571.00	2,96,000.00	2,00,000.00	29,51,000.00
2008-09	NIL	1,14,40,000.00	2,27,68,000.00	15,840.00	2,66,875.00	30,00,000.00
2009-10	10,00,000.00	9,50,000.00	4,44,69,574.00	3,07,800.00	1,535.00	30,16,348.00
2010-11	NIL	3,64,600.00	4,88,87,000.00	3,23,100.00	NA	1,11,88,738.00
2011-12	10,00,000.00	2,83,49,050.00	5,45,76,000.00	3,59,000.00	1,63,535.00	1,30,54,461.00
2012-13	11,00,000.00	3,46,52,373.00	6,53,80,000.00	NIL	25,25,000.00	1,02,04,107.00
2013-14	9,00,000.00	1,58,47,000.00	6,71,73,500.00	NIL	25,26,000.00	1,77,97,326.00

### 2.3.ANIMAL SECTION:

Ex-situ conservation breeding of targeted endangered animal species is the primary objective of the Padmaja Naidu Himalayan Zoological Park. The Zoo has done excellent works with planned conservation breeding of some of the highly endangered animal species of the Himalayas like

Breeding was observed in the year 2013-14 in respect of barking deer, blue sheep, goral, red panda, Grey peacock pheasant, Himalayan Monal, Temminck's tragopan, Kalij pheasant, Red jungle fowl. Silver pheasant and Golden pheasant.

Death was also not uncommon. In the year 2013-14, 17 deaths were recorded in mammals, 28 in pheasants, 6 in Birds and 1 in Reptiles. There has been considerable improvement in infant mortality of both mammals and pheasants due to constant medical supervision and Zoo keeper alertness.

### **2.4. DETAILS OF BIRTHS, DEATHS, ADDITION & DEDUCTION OF ANIMAL THROUGH EXCHANGE PROGRAMME.**

#### **BIRTHS OF MAMMALS/BIRDS/AMPHIBIA AT PNHZ PARK, DARJEELING**

SI No.	Name of the Animal	Male	Female	Unknown
1.	Blue Sheep ( <i>Pseudois nayaur</i> )	2	0	0
2.	Barking deer ( <i>Muntiacus muntjac</i> )	1	3	0
3.	Himalayan Goral ( <i>Nemorhaedus goral</i> )	1	0	0
4.	Himalayan Thar ( <i>Hemitragus jemlachus</i> )	1	1	0
5.	Sambar deer ( <i>Rusa unicolor</i> )	0	1	0
6.	Markhor ( <i>Capra falconeri</i> )	3	1	0
	Red panda ( <i>Ailurus fulgens</i> )	1	2	0
8	Grey peacock Pheasant ( <i>Polyplectron bicalcaratum</i> )	0	0	3
9	Himalayan Monal ( <i>Lophophorus impejanus</i> )	0	0	2
10	Red Jungle Fowl ( <i>Gallus gallus</i> )	0	0	7
11	Kalij Pheasant ( <i>Lophura leucomelana</i> )	0	0	10
12	Golden Pheasant ( <i>Chrysolophus pictus</i> )	0	0	15
13	Silver Pheasant ( <i>Lophura nycthemera</i> )	0	0	13
	Temminck's Tragopan ( <i>Tragopan temminckii</i> )	0	0	3
	<b>TOTAL</b>	<b>9</b>	<b>8</b>	<b>53</b>

**DEATH OF MAMMALS/PHEASANTS/BIRDS**

Sl No.	Name of the Animal	Male	Female	Unidentified	Cause of death
1.	Markhor ( <i>Capra falconeri</i> )	1	0	0	Death may be due to suspected ill nursing broncho-pneumonia and asphyxia condition.
2.	Himalayan palm Civet ( <i>Pamuga larvata</i> )	1	0	0	. Death may be due to as suspected of old age stress.
3	Himalayan Thar ( <i>Hemitragus jemlahicus</i> )faun	1	0	0	Death may be due to as suspected of ill nursing and broncho pneumonia.
4	Himalayan Thar ( <i>Hemitragus jemlahicus</i> )faun	0	1	0	Death may be due to as suspected of ill nursing and broncho pneumonia
5	Common leopard ( <i>Panthera pardus</i> )	1	0	0	Death may be due to feline Peritonitis (FIP) and benign gastro intestinal tumor.
6	Common leopard ( <i>Panthera pardus</i> )	0	1	0	Death may be due to old age and multi organ failure.
7	Jackal ( <i>Canis aures</i> )	0	1	0	Death may be due to sudden cardiac respiratory failure
8	Snow leopard ( <i>Uncia uncia</i> )	1	0	0	Death may be due to old age and prostritis.
9	Barking deer ( <i>Muntiacus muntjac</i> )	1	0	0	Due to weakness.
10	Asian palm Civet ( <i>Paradoxurus hermaphroditus</i> )	0	1	0	Death may be due to old age
11	Jackal ( <i>Canis aures</i> )	1	0	0	Death may be due to suspected 1 old age
12	Barking deer ( <i>Muntiacus muntjac</i> )	1	0	0	Death may be due to suspected pleural pneumonia.
13	Barking deer ( <i>Muntiacus muntjac</i> )	1	0	0	Due to weakness.
13	Barking deer ( <i>Muntiacus muntjac</i> )	0	1	0	Death may be due to cardiac arrest
14	Himalayan Wolf ( <i>Canis lupus himalayansis</i> )	0	1	0	Old age
15	Himalayan Wolf ( <i>Canis lupus himalayansis</i> )	0	1	0	Old age



16	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	1	0	0	Death may be due to infighting
17	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
18	Temminck's tragopan ( <i>Tragopan temminckii</i> )	0	1	0	Due to suspected enteritis
19	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
20	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
21	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
22	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
23	Temminck's tragopan ( <i>Tragopan temminckii</i> )	0	0	1	gastroenteritis
24	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
25	Temminck's tragopan ( <i>Tragopan temminckii</i> )	0	0	1	gastroenteritis
26	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
27	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
28	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
29	Silver pheasant ( <i>Lophura nycthemera</i> )	0	0	1	Ill nursing
30	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	0	0	1	Due to Hypothermia
31	<i>Himalayan Monal (Lophophura</i>	0	0	1	Death may be due to infighting and external injury.
32	<i>Himalayan Monal (Lophophura</i>	0	0	1	Death may be due to suspected gastroenteritis
33	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	0	0	1	Death may be due to cardio respiratory failure
34	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	0	0	1	Death may be due to cold shock
35	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	0	0	1	Death may be due to dashing
36	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	0	0	1	Death may be due to hypothermia
37	<i>Kaleej Pheasant (Lophura leucomelnos)</i>	0	0	1	Death may be due to hypothermia

38	<i>Kaleej Pheasant (Lophura leucomelanos)</i>	0	0	1	Death may be due to hypothermia
39	Silver pheasant ( <i>Lophura nycthemera</i> )	1	0	0	Death may be due to suspected heart attack
40	<i>Kaleej Pheasant (Lophura leucomelanos)</i>	0	1	0	Death may be due to injury at right thorax region, flight accident is indicated.
41	Grey peacock pheasant ( <i>Polyplectron bicalcaratum</i> )	0	0	1	Ill nursing
42	Grey peacock pheasant ( <i>Polyplectron bicalcaratum</i> )	0	0	1	Ill nursing
43	Grey peacock pheasant ( <i>Polyplectron bicalcaratum</i> )	0	1	0	Death may be due to liver cirrhosis of liver and chronic diarrhoea
44	Star Tortoise ( <i>Geochelone elegans</i> )	0	1	0	Death may be due to cold
45	Hill Myna ( <i>Gracula religiosa</i> )	0	0	1	Due to cold
46	Hill Myna( <i>Gracula religiosa</i> )	0	0	1	Old age
47	Hill Myna( <i>Gracula religiosa</i> )	0	0	1	Enteritis
48	Hill Myna( <i>Gracula religiosa</i> )	0	0	1	Enteritis
49	African grey parrot	0	1	0	Enteritis
50	Torraco grey	0	1	0	Death may be due to suspected hypothermia.
	<b>TOTAL</b>	<b>10</b>	<b>13</b>	<b>27</b>	

**BIRTHS OF MAMMALS/BIRDS/AMPHIBIA AT SATELLITE FACILITY DOW HILL, KURSEONG**

SI No.	Name of the Animal	Male	Female	Unidentified
1	Barking deer( <i>Muntiacus Muntjac</i> )	4	1	0
2	Blue Sheep ( <i>Pseudois nayaur</i> )	1	1	0
3	Himalayan goral ( <i>Nemorhaedus goral</i> )	1	0	0
4	Golden Pheasant ( <i>Crysolophus pictus</i> )	0	0	12
3	Kaleej Pheasant ( <i>Lophura leucomelanos</i> )	0	0	2
	<b>TOTAL</b>	<b>6</b>	<b>2</b>	<b>14</b>

**DEATH OF MAMMALS/PHEASANTS/BIRDS AT SATELLITE FACILITY DOWHILL, KURSEONG**

Sl No.	Name of the Animal	Male	Female	Unidentified	Cause of death
1.	Barkingdeer( <i>Muntiacus Muntjac</i> )	1	0	0	Due infighting and may be due to shock
2	Temminck's tragopan ( <i>Tragopan temminckii</i> )	0	1	0	Due to suspect of enteritis
3	Kaleej Pheasant ( <i>Lophura leucomelnos</i> )	0	0	1	Ill nursing
4.	Silver pheasant ( <i>Lophura nycthemera</i> )	1	0	0	Old age , stress and respiratory failure.
5	Barkingdeer ( <i>Muntiacus Muntjac</i> )	1	0	0	Due to weakness since birth
7	Kaleej Pheasant ( <i>Lophura leucomelnos</i> )	0	1	0	Due to dashing at the iron angle post
8	Satyr Tragopan ( <i>Tragopan satyra</i> )	1	0	0	Due to suspect of nerve damage of both legs.
	<b>TOTAL</b>	<b>4</b>	<b>2</b>	<b>1</b>	

**2.5. ADDITION AND DEDUCTION OF ANIMALS AND PHEASANTS THROUGH EXCHANGE PROGRAMME**

**(a) ANIMALS AND PHEASANTS ADDED TO PNHZP**

Sl No.	Name of the Animal	Male	Female	Unidentified	Received from
1	Himalayan Goral ( <i>Nemorhaedus goral</i> )	1	1	0	Pt. Govind Ballabh Pant High Altitude Zoo
2	Snow leopard ( <i>Uncia uncia</i> )	0	2	0	Lodz Zoo, Germany

3	Red Panda ( <i>Ailurus fulgens fulgens</i> )	0	1	0	Himalayan Zoological Park, Bulbuley, Sikkim.
4	Golden Pheasant ( <i>Chrysolophus pictus</i> )	1	1	0	Alipore Zoological Gardens, Kolkota.
5	Grey Peacock Pheasant ( <i>Polyplectron bicalcaratum</i> )	1	0	0	Alipore Zoological Gardens, Kolkota.
6	Common leopard ( <i>Panthera pardus</i> )	1	1	0	Rasikbeel, Cooch Behar.
		<b>4</b>	<b>6</b>	<b>0</b>	

**(b) ANIMALS AND PHEASANTS TRANSFERRED FROM PNHZ PARK**

SI No	Name of the Animal	Male	Female	Unidentified	Transferred to
1	Common Grey langur ( <i>Seminopethicus entellus</i> )	0	2	0	Rajkot Zoo, Gujarat
2	Common Grey langur ( <i>Seminopethicus entellus</i> )	1	1	0	National Zoological Park, Delhi
3	Blue Sheep ( <i>Pseudois nayaur</i> )	1	1	0	Himalayan Zoological park Sikkim.
4	Common leopard ( <i>Panthera pardus</i> )	1	0	0	Himalayan Zoological park Sikkim.
5	Grey peacock pheasant ( <i>Polyplectron bicalcaratum</i> )	0	1	0	Himalayan Zoological Park, Sikkim
6	Golden Pheasant ( <i>Chrysolophus pictus</i> )	1	1	0	Alipore Zoological Gardens, Alipore.
7	Golden Pheasant ( <i>Chrysolophus pictus</i> )	1	1	0	Himalayan Zoological park Sikkim.
8	Golden Pheasant ( <i>Chrysolophus pictus</i> )	1	1	0	Mini Zoo, Jhargram
9	Red Jungle Fowl ( <i>Gallus gallus</i> )	1	1	0	Mini Zoo, Jhargram
10	Kaleej Pheasant ( <i>Lophura leucomelanos</i> )	1	1	0	Mini Zoo, Jhargram
11	Kaleej Pheasant ( <i>Lophura leucomelanos</i> )	1	2	0	National Zoological Park, Delhi
12	Kaleej Pheasant ( <i>Lophura leucomelanos</i> )	1	1	0	Alipore Zoological Park, Kolkata

13	Golden Pheasant ( <i>Chrysolophus pictus</i> )	1	3	0	National Zoological Park, Delhi
14	Lady Amherst	1	1	0	National Zoological Park, Delhi
		<b>14</b>	<b>18</b>	0	Rasikbeel

## 2.6. VETERINARY SECTION

The veterinary hospital is housed in the ground floor of the hospital building. The hospital is equipped with almost all the equipments required for the up keeping of the health and maintenance of the animals in the zoo. The section is headed by Veterinary Officer (on contract) who is assisted by a Compounder. The treatment cards, Out patient register, In patient register, Post mortem register and report, Laboratory analysis register, Stock register of medicines/instrument etc. are maintained and updated.

Daily diet of meat like beef, mutton, chicken along with dry ration etc. are inspected by the Veterinary Officer for their quality and quantity on daily basis. Thursday is a non-feed day for carnivores. The bamboo leaves and tree fodder given to herbivores is also weighed and checked by the Animal Supervisor before it is fed to the animals.

Animal health care receives utmost attention in the zoo. A Veterinary Doctor assisted by one Compounder and technical assistant carry out day to day check ups and treatments of the animals.

Snow leopard – Male ‘Tyson’ aged 18 years suffered from prostritis since 2012. The animal was treated regularly for a period of one year. The animal died on 14.09.13.

Successful treatment of female Royal Bengal Tiger ‘Mukti’ for Blood discharge from vulva.

Castration of male Common leopard.

The section also was also involved in rescue work. Following were the animals rescued during the year 2013-14

1. One injured female barking deer with one front leg broken was brought from Maneybhangyang road on 01.06.2013. The animal was treated and then sent back.
2. One male Himalayan Palm Civet approximately 2 months from Upper Neora Range rescued in good and healthy condition. The animal is currently being housed at the Park.
3. An injured female barking deer, inflicted with bite wound rescued from 8<sup>th</sup> Mile Gorabari Block , The animal was treated but the animal died on 11.10.2013.
4. One injured flying Squirrel rescued from Jorebunglow Senchal West range. The animal died on 25.11.2013.

All the enclosures, cages are thoroughly washed with disinfectants early in the morning before the zoo is opened for the day to the visitors. Filtered water and blowers are provided to every animal. As part of the animal health care, deworming, testing of stool, urine and blood samples of all the animals are done on regular basis.

The Government of West Bengal has been repeatedly requested to post a regular Veterinary Doctor .

### **2.6.1. Dis-infection programme**

- 1) As a part of daily programme, the concrete and the wooden floor are cleaned with Savlon. Feeding and watering trough are cleaned with Kmn04 @ 2gm/ltr. Water. The drains are cleaned thoroughly by the Zoo Keepers. The daily Dis-infection works are completed before the Zoo opens for the public in the morning.
- 2) As annual programme the floors, rods and wires were sterilized with blow torch, once during rainy season. The walls of the cages were white washed and the rods, wires were painted.

Due attention is also given for ensuring a good health care to the Zoo staffs. All the Zoo keepers and other field staffs who are in direct and indirect contact with the zoo animals are vaccinated against Rabies and Tetanus to control communicable diseases.

The veterinary section this year successfully treated prolonged illness of a case of prostritis in an 18 year old Snow leopard and a common leopard with feline peritonitis and benign gastro intestinal tumor.

No major problems were witnessed in any of the animals at the Park. The veterinary section remained involved in rescuing animals and their treatment from the wild. The section also assisted the Forest Department in conducting post mortem of Common Leopard and Barking Deer.

## **2.7. OTHER IMPORTANT SECTIONS**

### **2.7.1. COMMISSARY SECTION**

The Zoological Park has a well established Commissary section with dry ration store, meat house, modern Kitchen using LPG. The Commissary Section weighs all diet materials they receive in the weighing machine. Meat and fruits if required early the next day are kept in deep freezer. All dry rations are stored in polydrums. All the animal diets are acquired by annual tenders. All the diet items are checked for quality and quantity by the Veterinary Officer before issuing the same to the animal section on proper challan. One full time storekeeper and one trained cook constitute the establishment of the Commissary section.

### **2.7.2 Education**

The Education Section is headed by the Scientific Officer. The section is in-charge of regular school visits, visit by the college and university students including forest officials. The section is in-charge of publication of pamphlets and books concerning zoo issues and also updating the sinages of different kinds.

### **2.7.3 Education Section:**

In the year 2014-2015, the zoo was visited by students and faculty members of schools, colleges and university students including forest officials. The section is in charge of publications of pamphlets and book concerning zoo issues and also updating the sinages of different kind.

The Park celebrated World Environment day on 5<sup>th</sup> June 2014, the theme for this year was “*Raise your Voice Not the Sea level*”. Different schools from Darjeeling were invited to participate in the programme to promote awareness on the importance of trees and biodiversity and its impact on the environment and our lives in general. Sit and Draw competition was organized for the students from

Grade I-III and Grade V-VIII. The topic for the sit and draw competition was “*My Favourite Wild Animal*” and *A Tree saves many lives*’ respectively. Ten school with a total of forty students participated.

The winner of the Sit and Draw competition were as follows:

1. Pratiksha Subba, Loreto Convent School.
2. Priyankush Das, St. Joshep’s School.
3. Vinayak Moktan, Gyanoday Niketan

For essay competition:

1. Mohammad Hasim Abedeen, Gyanoday Niketan
2. Raman Mohora, St. Joseph’s School
3. Raksha Rai, St. Teresa’s Girls’ Higher Secondary School

Pamphlets were distributed to the students including the other participants based on the theme. The prize distribution ceremony was held in the zoo auditorium where the director of the Park interacted with the students on the theme based issues. The students were provided with booklets about the Park and its biodiversity. The day’s programme concluded distributing refreshments to all the participants.

#### SCHOOL & COLLEGE VISITS

DATE	NAME OF THE SCHOOL	NO.OF STUDENTS	NO.OF TEACHERS	EDUCATIONAL INCENTIVES
05.04.2013	Glendale Academy	13	04	Assisted field tour
17.04.2013	Bright Academy	45	10	Assisted field tour
19.04.2013	Little Flower Nursery School	25	4	Assisted field tour
21.05.2013		40	10	Assisted field tour
27.04.2013	Shalom English School	12	7	Assisted field tour
30.04.2013	Nepali High School, Naxalbari	100	15	Assisted field tour
07.06.2013	St. Michael’s H.S.School, Darjeeling	259	5	Assisted field tour
14.06.2013	Swami Vivekananda Primary School	45	5	Assisted field tour and an interaction session.
14.06.2013	Soom T.E. Primary School	40	5	Assisted field tour and an interaction session.

15.06.2013	Hayden Hall	52	5	Assisted field tour and an interaction session.
18.06.2013	Singamari Primary School	37	7	Assisted field tour and an interaction session.
19.06.2013	Municipal Boys Primary School	54	2	Assisted field tour and an interaction session
25.06.2013	Rangers from Forest Training Academy, Uttarkhand	37	2	Assisted field tour and an interaction session
23.09.2013	State Forest Service Trainee, Forest Research Institute, Dehradun	42	1	Assisted field tour and an interaction session
15.09.2013	State Forest Service	40	1	Assisted field tour and an interaction session
08.10.2013	Gyanoday Niketan	122	6	Visit to zoo and interaction
09.10.2013	Gyanoday Niketan	94	6	Visit to zoo and interaction
30.10.2013	Saraswati Vidhyadan Lebong	336	20	Visit to zoo and interaction
11.11.2013	Little Angles Children's Home, Pedong	85	10	Visit to zoo and interaction
12.11.2013	Forest Guard training Center, Rajabhatkhawa 55 <sup>th</sup> Batch	31	2	Visit to zoo and interaction
13.11.2013	Rose Berry Nursery School	55	5	Visit to zoo and interaction
14.11.2013	Feat Foundation Academy, Lebong	45	7	Visit to zoo and interaction
14.11.2013	Mount Carmel School	280	21	Visit to zoo and interaction
14.11.2013	Gyanoday Niketan, Darjeeling	190	6	Visit to zoo and interaction



14.11.2013	EFRC, Kurseong	10	1	Visit to zoo and interaction
14.11.2013	Lower Tongsong Tea Estate, MSK	21	5	Visit to zoo and interaction
15.11.2013	Army Public School, Lebung	220	25	Visit to zoo and interaction
15.11.2013	Vidhyasagar Primary School, Bijanbari	30	11	Visit to zoo and interaction
15.11.2013	World Vision India, NGO	60	13	Visit to zoo and interaction
15.11.2013	Wisdom Academy Darjeeling	54	14	Visit to zoo and interaction
15.11.2013	Tashiding Junior Basic School, Academy	25	6	Visit to zoo and interaction
15.11.2013	Monalisa English School, Pokhriabong	25	6	Visit to zoo and interaction
16.11.2013	Notre Dame School, Kaijaley	50	5	Visit to zoo and interaction
16.11.2013	Greendale Academy Aligarh Bajar	30	4	Visit to zoo and interaction
16.11.2013	St.Joseph's Convent Kalimpong	25	3	Visit to zoo and interaction
16.11.2013	Vidhyavani MSK Batasia	70	7	Visit to zoo and interaction
23.11.2013	Kumudini Homes Higher Secondary School	50	1	Visit to zoo and interaction
24.11.2013	Namchi Public School	45	3	Visit to zoo and interaction
27.11.2013	Eastern Forest Rangers College, Kurseong	28	1	Visit to zoo and interaction
27.11.2013	Balason Bhanjang, Forest Village, Ghoom	28	5	Visit to zoo and interaction
01.12.2013	SSK, Kurseong	19	4	Visit to zoo and interaction
18.12.2013	Pulbazar Junior Basic School	25	8	Visit to zoo and interaction

29.12.2013	Patikabari High School	52	8	Visit to zoo and interaction
05.02.2014	Bridge of Hope, Pragati Gram, P.B. Gurung road, Darjeeling	23	08	Visit to Zoo and interaction
12.02.2014	HSH/RTE Course 2014	27	03	Visit to zoo and interaction
10.03.2014	DRF Kurseong	22	01	Visit to zoo and interaction
11.03.2014	Central School for Tibetans, Sonada	50	05	Visit to zoo and interaction
25.03.2014	Municipal Girl's Primary School, Darjeeling	66	07	Visit to zoo and interaction
		<b>3134</b>	<b>320</b>	

#### 2.7.4 Research

The update of animal records such as History cards, Stud books, and others were done using the International Species Information System. Two research projects were submitted to the Central Zoo for short term research grant. 1) **Red Panda Nutrition- Towards an Integrated Approach** and b) **Studies on Biology, breeding behaviour and Aviary practices for improved performance of captive Himalayan Pheasants.** Miss Pranita Gupta, M.Sc. in Medical Microbiology joined the park on 01.11.2013 for the project on **Red Panda Nutrition** and Mr. Aditya Mitra M.Sc. in Zoology joined the Park on 14 .01.2014 for the research on pheasants. The project report on the “Study of Snow leopard at PNHZ Park” was compiled and submitted to the Central Zoo Authority.

Closed Circuit television was installed in the Temminck's tragopan enclosure to study the pheasant's behaviour in captivity. The recordings have put an insight on the pheasants behaviour like display behaviour by the male, timings and frequency of display including the female's duration, number of eggs and interval of egg laying, incubation period, time of hatching, rearing of chicks etc.

CCTV installed both in the enclosure and night shelter of the Clouded leopard to study the behaviour of the two housed individuals especially during the night hours as the species is nocturnal and active only during the night time.

Genetic analysis of the captive individuals of red Panda, Snow leopard and Himalayan Wolf was also conducted at centre for cellular and Molecular Biology, Hyderabad. The park also conducted Hormonal analysis of Red panda and Snow leopard at Centre for Cellular and Molecular Biology.

#### **MEETINGS AND TRAINING ATTENDED BY ZOO OFFICERS & STAFF:**

NAME OF THE TRAINING	NAME OF THE PERSON	PLACE	PERIOD
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“Zoos as a tool for scientific management of endangered animals with a special focus on research and publication”	Miss Upashna Rai (Zoo Biologist)	Jaipur	25th- 28th June 2013
Workshop on Molecular Phylogeny	Mr. Bhupen Roka (Research Scholar)	Bangalore	1 <sup>st</sup> -5 <sup>th</sup> August
Conservation Breeding of Endangered species in Zoological Parks	A.K. Jha (IFS) Director, Miss Upashna Rai, (Zoo Biologist)  Miss Shradhanjali Rai, Research Scholar.	Nandankanan Zoological Park, Bhubaneswar, Odhisa	16th– 19th September 2013
Building National Capacity for ex-situ Amphibian Management & Conservation	Upashna Rai, (Zoo Biologist)	Assam State Zoo cum Botanical Garden, Guwahati	10th – 13th December 2013

Mr. Sudhir Ghatraj Dy. Ranger/ Forester and Mr. Pradeep Singh Veterinary Compounder visited Pheasant Breeding Centre at Sarahan and Chail, Himachal Pradesh to know about the breeding of pheasants especially Cheer Pheasant and Himalayan Monal. They also visited the Vulture Conservation Breeding Centre at Pinjore, Haryana during the month of April 13’ for a period of one week.

Padmaja Naidu Himalayan Zoological Park, Darjeeling with the Ministry of Environment and Forest, Govt. of India conducted a five day training programme from 27<sup>th</sup> May to 31<sup>st</sup> May 2013 on “*Endangered Species Recovery- Linkages of ex-situ and in-situ efforts*” for the IFS Officers.

Twenty eight participants from 15 states of India in the programme were senior and middle level officers from diverse educational and work background holding posts of Managing Director, (State Rural Development Corporation Ltd, Women’s Finance Corporation Ltd, Fisheries Federation), Director of Handloom and textiles, Regional Passport Officer, posts of Dy. Conservator of Forest, Conservator of Forest, Chief Conservator of Forest, Addl. Principal Chief Conservator of Forest and Principal Chief Conservator of Forest.

The programme coordinators were Mr. A.K. Jha IFS Director and Mr. J.B. Chettri WBFS Dy. Director Padmaja Naidu Himalayan Zoological Park. The sessions were taken over by the coordinator himself Mr. A.K. Jha IFS whose deliberation focused on the Conservation Breeding Programmes of the Red Panda and Snow leopard at PNHZ Park. Forest Officials Mr. N.C. Bahuguna IFS, PCCF, Wildlife & CWLW; Dr. Brij Raj Sharma IFS, CCF, South- West gave an insight on “*Conservation Breeding and In-situ and Ex-situ Linkage for wildlife Conservation*” The presentation of Mr. S. Sundriyal IFS, CCF, Hill Circle focused on “*Linking for wildlife future.... Ex-situ in-situ endeavours*”. Ms. Sumita Ghatak IFS, Divisional forest officer, wildlife II, highlighted the flora and faunal diversity of Neora Valley National Park. Dr. Brij Kishore Gupta from the Central Zoo Authority, Ministry of Environment and forest deliberated on the “*Acts, Rules, Regulations, Policies, Guidelines of Zoos in India with special reference to in situ and ex-situ Conservation Linkages*” and “*Principles of animal enrichment: What should all senior managers and directors should know*” and Dr. G. Umapaty from LaCONES, Centre for Cellular and Molecular Biology highlighted the “*Wildlife Conservation using biotechnological tools*”. Few of the participants too participated in presenting some of their work in their respective fields that included – “*Vulture Conservation: Status and Issues*” by Mr Jagdish Chander from Harayana, “*Tiger Rescue in*

*Padarauna (UP) and Sirisia (Bihar)*” by Mr Nand Kishore from Bihar and “*An insight of the Conservation Breeding Programme of Sepahijala Zoological Park* by Mr. Prasanjit Biswas from Tripura.

The training programme was very much appreciated by the participants and assessed the course to be structured. The participants found the training to be useful in their jobs or shall be useful whenever given an opportunity to work for wildlife or Conservation works. The participants also felt that they had benefited considerably from the interaction that they had with the fellow participants in the course. The participants also found the course material supplied to them relevant and related to the course content. They were also satisfied when it came to the aspect of class room facilities. The participants also rated the resource persons delivering lectures, sessions and demonstrations that ranged from excellent to very good to good to fair. At the end of the session an obligatory panel discussion was also held on “Improvement in working of Forest Department- Need for career development through training and improvement of skills”.

Two day training workshop on “*Zoos as Window for Conservation of Species*” was conducted by Padmaja Naidu Himalayan Zoological Park, Darjeeling for the Indian Forest Service Officers (IFS) sponsored by the Ministry of Environment and Forest Govt. of India from 7<sup>th</sup> – 8<sup>th</sup> November 2013 held at Siliguri.

On 7<sup>th</sup> morning the programme began with an inaugural session in the presence of Mr. P.T. Bhutia IFS, CCF, Northern Circle after which a total of sixteen participants departed for Darjeeling where a visit to Darjeeling Zoo, Conservation Breeding Center for Snow leopard and Red Panda including interaction with the Deputy Director and other officers of the Park was organized. The participants were exposed to the various Conservation Breeding Programmes of the Park, the need for breeding the endangered species in captivity, earlier reintroduction programme of Red Panda and ex-situ Management of the animals at the Park.

The second day included lecture by Dr. B.R. Sharma IFS on “*Role of Conservation Breeding in Wildlife Conservation*” where threats to Wildlife were highlighted with an urgent need to conserve India’s forests and wildlife and the role played by the Zoos towards Conservation of species. The presentation also highlighted the need for Zoos, and linking Zoos with in-situ wildlife Conservation. Mr. A.K. Jha IFS, Director, Padmaja Naidu Himalayan Zoological Park, Darjeeling in his presentation focused on the Conservation Breeding Programmes of the Park with special emphasis on the Red Pandas, Snow leopard and other high altitude animals. Dr. S. Panda IFS, Director Nandankanan Biological Park, dealt with the Conservation Breeding Programme of Indian Pangolin another endangered species. The participants in the second half of the session were divided into two groups A and B where two topics were allotted to each groups “*Zoos as an extension tool for society for group A and role of Zoos in Conservation for group B*” after an hours discussion on the topics by the two groups each group presented their views as follows:

Groups – a Topic- Zoos as an extension tool for society

- Since the zoos are playing an important role in education, awareness, conservation and developing species specific data base the definition of the zoo as defined in Wildlife Protection Act 1972 be replaced so as to incorporate and encompass the above stated roles of zoos.
- Interpretation room is required in the zoos with displays highlighting the various aspects of animals housed in the zoo.
- Nature education camps/orientation program be organized for different target groups like students, professionals, researcher, NGOs, policy makers, judiciary, hotel association, press and media, police, tourism corporations etc.

- A long term plan for research/extension/ communication programs be developed and various sources of funding like CAMPA/Corporate sector/State/MOEF/Department of Biotechnology (GOI) and International funding be tied up.
- Development of literature including films, effective signage with basic information and professional guides for conducting the visits for the visitors.
- Coordinating with the Education Department for enhancing the level of participation of students/teachers.
- On the foundation day of the zoo visitors may be allowed without any fees.
- Showcasing the significance of Himalayan Zoo.
- “Concepts of Zoos as a window for conservation of species” may be included in school curriculum.

#### Group ‘B’ “Role of Zoos in Conservation”

##### Role of zoos:

1. Paradigm shift in zoo mandate- from exhibit to research and conservation.
2. Biodiversity showcase.
3. Conservation education.
4. Animals difficult to observe in wild can be studied closely.
5. Higher level of research
6. Conservation breeding programmes for endangered species.
7. Awareness programmes through education at all levels.
8. High quality of interpretation activity.

##### B: Constraints

1. Adequate and continuous funding.
2. Trained manpower.
3. Management models.
4. Lack of awareness at all levels.
5. Sharing of knowledge/ technical expertise.

##### C. Recommendations:

1. Steady funding for ensuring conservation efforts.
2. Dedicated cadre of people.
3. Donations (Corporate/ individuals/ foreigners).
4. Networking of zoos, conservations bodies, individuals, NGO’S.
5. Training programmes at all levels.

A PHVA workshop for the Red panda (*Ailurus fulgens*) was organized by Rotterdam Zoo of The Netherlands, the Central Zoo Authority, and Zoo Outreach Organization of Coimbatore, India and was hosted by Padmaja Naidu Himalayan Zoological Park, Darjeeling from 26<sup>th</sup> – 29<sup>th</sup> November 2013 .The format of the workshop was similar to PHVA workshops conducted by the IUCN's Conservation Breeding Specialist Group (**CBSG 1993**). Funding was provided by Central Zoo Authority (for Indian participants), WWF Germany, Rotterdam Zoo and members of the European Association of Zoos and Aquaria (EAZA) (for foreign participants and resource people). Workshop participants included representatives of three range countries – India, Nepal and Bhutan as well as from USA and Europe who had either direct research experience, direct association with managing the species' habitat, or responsibility for education programs that would benefit recovery. The

participants were divided into three groups to facilitate discussion on three aspects: Habitat of the species, Threats and awareness strategies with a vision for “*Securing long-term viable populations of Red panda in the eastern Himalayan sacred landscape, by conserving habitat quality and connectivity, including requisite management initiatives, while maintaining socio-ecological stability for the region and promoting the value of the species*”

The workshop had several steps to achieve the above stated vision where the three groups discussed on the following aspects based on the available data on the species

- Update and describe range-wide distribution and status.
- Update information on habitat characteristics.
- Identify and rank threats.
- Outreach programmes as major awareness tool.
- Potential roles of ex-situ management

With goals in hand, each working group then began the task of identifying specific actions that would achieve those goals. These actions were intended to include important details such as the individual responsible for moving the action forward, a timeline for completion of the action, important collaborators, and specific obstacles to be overcome if the action is to be completed. The discussions by the groups on their respective issues involved population dynamics, conduct simulation models, estimate population extinction (range wide, special cases), define viable population size, identify stakeholders for implementing recovery, evaluate data on critical biological parameters, trans-boundary issues, develop outreach strategy and need for research. The groups drafted a report on the discussions followed with recommendations where each group based on the above issues framed goals and defined objectives to make it achievable.

#### **GOALS:**

1. To achieve/maintain viable populations of red panda by connecting fragmented population in the eastern Himalayan Landscape by 2050
2. Minimize the threats imposed by dogs, poaching and upcoming developmental activities.
3. Establish red panda as a priority species among communities, policy makers, military and paramilitary forces and ecotourism stakeholders through popularisation of red panda as a model of ecological and cultural value.
4. Ex-situ populations to contribute most effectively to species management in the wild.

#### **Objectives for goal 1**

1. Assess the current status of the red panda population, habitat contiguity, connectivity, suitability & identify critical areas or sensitive corridors by 2018 in the eastern Himalayan landscapes.
2. Improve and manage red panda habitats (corridors as well as habitats)

#### **Objectives for Goal 2**

1. Identify threats imposed (hunting as well as disease) on red panda by different types of dogs and formulating a dog management plan by 2018.
2. Curb poaching and other illegal activities leading to red panda mortality and enhance trans-boundary cooperation on these aspects.

3. Promote eco-friendly and sustainable development with minimal impact on red panda habitat.

### **Objective FOR Goal 3**

1. Educate, sensitize and promote community participation to mitigate threats to the red panda and its habitat.
2. Develop a steering group for red panda in the lines of NTCA on a smaller scale to regulate, monitor and coordinate various agencies working for red pandas
3. To undertake assimilation of the baseline information regarding red panda resources – physical, financial and intellectual – in India and its neighbouring countries
4. Enhance knowledge about red pandas among stakeholders across the Eastern Himalayas

### **Objective for Goal 4**

1. **Basic behavioural studies on the ex-situ and in-situ population:** Behavioural observations of captive red pandas can be used to understand biology of wild populations and *vice versa*
  - a. Create a knowledge base for stakeholders (Zoo Managers, Protected Area Managers and Researchers as well as local people) and aid in further studies to evaluate, manage and improve the current population
2. **Better awareness and knowledge dissemination:** There are knowledge gaps where lay person or forester may not be able to recognize for e.g. a baby red panda, whereas a zoo keeper would have no such difficulty.
  - a. Share existing information on the basic biology of the species to enhance knowledge about the species in the local communities and the frontline staff. (Research biologists, better signages at the zoo, interpretation centers, visual aids, etc. with help from international red panda community)
  - b. Raise awareness for Red Panda through various publicity campaigns (booklets, post-cards, stamps, hoardings at strategic places, occasions like celebrations of environmental days like Wildlife Week, International Red Panda Day on 3<sup>rd</sup> Saturday of September, etc.)
3. **Compilation of husbandry guidelines for red panda:**
  - a. Compile and share husbandry and management guidelines for red panda including rescued cubs and making them available in local languages such as Nepali in West Bengal, Sikkim.
  - b. Synthesizing available information to meet local needs.
  - c. Develop and implement guidelines for veterinarians and keepers for proper care and handling of animals to minimize disease propagation (since many locally available traditional methods are seen to work or be practiced in this region).
4. **Rescue and treatment of wild pandas:**
  - a. Compile from local and international red panda community and share information on hand-rearing of wild, abandoned and orphaned cubs
  - b. Capacity building for frontline staff for tranquilization, capture, handle, transport, and other rescue and care operations.
5. **Formulate population management plan:**
  - a. Formulation of species survival plan for better management of captive stock to assist in-situ conservation
  - b. Update and maintain both national and international studbooks to ensure gene flow and diversity in captive population.

## **6. Translocation and restocking of wild population:**

- a. Identifying and testing potential habitats for soft release in the identified conservation clusters which can be developed where needed in time for future re-stocking.
- b. Capacity building with concerned agencies including local participation for knowledge-sharing on the technical part.
- c. Long-term monitoring of translocated / restocked animals using radio collars.
- d. Seek corporate support to highlight Red Panda as a symbol of peace and harmony.

**7. Zoos and other organizations routinely conduct surveys of one or more PAs (genetic/population) - to identify threats, population numbers, habitat status and genetic connectivity.**

## **8. Opportunities for Zoo/Wildlife Veterinarians and Researchers**

- a. Policy interventions to create a separate cadre of wildlife veterinarians. Veterinarians have no incentive to work as zoo veterinarians and are usually on short-term deputation from Animal Husbandry Departments or on contract basis; hence need is felt
- b. Create opportunities for research biologists to conduct long-term studies on the wild/captive populations.
- c. Zoos need well equipped research facilities to attract motivated veterinarians and zoo conservation biologists

**9. Upgrade the status of zoo keepers** as in India, zoo keepers are treated as menial labourers with no incentives or motivation to move up in life; a simple cadre needs to be created where the keeper moves up the ladder based on experience and capacity as well as educational qualification. It is hence very necessary to remove the social stigma associated with zoo animal keeping and increasing their profile by

- a. Increase the minimum qualification of zoo keepers
- b. Providing appropriate salary scales
- c. Regular compulsory training on various aspects of husbandry locally, regionally, nationally and even internationally.
- d. Regular Keeper exchange programme with zoos involved in global red panda breeding programme

## **10. Take up advanced studies with the research organisations for**

- a. **Genetic studies** to understand genetic diversity in captive and wild populations and population structure in the wild.
- b. **Germplasm banking** – recovery of testes and ovaries from recent post-mortem animals and develop protocols for cryopreservation, xenografting, IVF and embryo transfer.
- c. **Disease screening** – for outbreaks of viral or bacterial diseases
- d. **Hormonal & behavioural studies** – to understand reproductive status and stress

## **11. Organise funds for various activities**

The reports from the PHVA workshop shall be a framework from which managers can develop habitat in such a way that it will help to meet the report recommendations. The final report will include population targets and habitat recommendations that can be used by agencies, organizations, and individuals to plan, justify, and guide conservation actions.

## **Publications:**



1. Conservation Breeding Programme of Snow Leopard- A.K. Jha and U. Rai. Ex-situ Updates (Central Zoo Authority) April 2013 (Volume 2 issue 1).
  2. Introduction to Zoos: Padmaja Naidu Himalayan Zoological Park, Darjeeling- A.K. Jha. Ex-situ Updates (Central Zoo Authority) April 2013, Volume 2 Issue 1.
  3. Population and habitat Viability Assessment Workshop (PHVA) for “Red Pandas (*Ailurus fulgens*): A species Conservation Strategic Plan”. A.K. Jha, S. Molur, Kristen Leus and Angela Glatston. Zoos’ Print XXIX, No 1, January 2014.
  4. Cryptorchidism in a male Blue Sheep (*Pseudois nayur*) at Padmaja Naidu Himalayan Zoological Park. P. Kumar and A.K. Jha. Zoos’ Print XXIX, No. 2 February 2014.
  5. Emerging parasitic diseases in wildlife- A case study at Singalila National Park and Neora Valley National Park, West Bengal. V. Chettri, A.K. Jha and U.Rai. India Zoo Year Book, Volume-VII, 2013.
1. Research papers of Darjeeling Zoo 1983-2014- A.K. Jha. Published March 2014.
  2. Conservation breeding records of Animals of Darjeeling Zoo. Published March 2014.
  3. Reading material for Red panda Population and Habitat Viability Assessment- A species Conservation Strategic Plan for Red Panda (26-29 Nov, 2013)- A.K. Jha. Published November 2013.

#### **2.7.5.GARDEN SECTION**

The Garden Section under the supervision of the Scientific Officer was given proper attention. For proper care of the orchids, succulent and ornamental plants, glass house was constructed which housed a store room at the ground floor. Proper storage room has also been created for storing of manure throughout the year in the Zoological Park. Nursery has been made for seasonal flowering plants. All the peasantries, lesser cats enclosures and Red Panda enclosures have been carpeted with grass to give a natural look. Regular infilling and new plantation are done to provide suitable habitat for the zoo animals. The work has been outsourced by way of tender, to technical persons. This was warranted by old age and death of Malis.

The trees at the peripheral areas/display areas of the park were labelled for the the convinence of the visitors, students, researcher’s etc with name plates which includes scientific name, local name and family.

#### **2.7.6.SANITATION SECTION**

Sanitation in the Zoological Park has been given due importance. On one hand enclosures are being cleaned with disinfectants every morning and on the other hand cleaning of the debris as well as remains of the animal waste and left over of animal feeds are done every day. In the mean time, all the left out bones of the animals feeds, excreta, of the animals is being burnt regularly in the burning shades using diesel and fire wood. A new electric incinerator has been installed at this park with the Central Zoo Authority funding in the last year for safe disposal of carcass and other waste.

Large number of dustbins have been provided at different locations in the Zoological Park. Wasteful materials, polythene & waste papers are regularly cleaned. Installation of an incinerator is thought of. There are

separate dustbins for plastic and non plastic waste. A underground sewerage system has also been developed, for removal of animals waste, urine and excreta , and to avoid foul smell of these.

### **2.7.7. SECURITY SECTION**

The section under the supervision of the Estate Officer looks after the security of the Zoological Park both day & night. The main area of the Zoological Park has been encircled by 7 feet high concrete boundary wall with coiled concertina wire on top. This has stopped the fear of encroachment. Private security personnel have been engaged in addition to the regular forest guards and they have also been provided with Khukuri/lathis and torches. One additional security guard room was also constructed.

### **2.7.8. MAINTENANCE SECTION**

The Section in the year 2013-14undertook works like

- Maintenance of Himalayan Thar enclosure damaged by landslide.
- Repair and painting of all animal enclosures.
- Replacement of fibre glass in Aviaries of Beat 1 and Beat 2.
- Painting of the interior of hospital.
- Renewing of guard house for security.
- Repair of boundary walls.
- New cubing boxes for pandas.
- Breeding cell for snow leopard
- Rain shed at Topkedara.
- Providing soil conservation work along HMI road and above snow leopard enclosure.
- Extension of road at Tiger and common leopard junction with provision of parapets. sepee

### **3.1. PROJECT SNOW LEOPARD**

The Padmaja Naidu Himalayan Zoological Park, Darjeeling is dedicated to conservation of wildlife. It started work on captive breeding project of this rare species in the Year 1983. It was selected as an ideal site for this captive breeding project. Experts Dr. Ingo Rieger and D. Walzthoeny inspected the site in July 1983 and gave their approval. The site selected for off-display conservation breeding center of Snow Leopard is the North-Western corner of the Jawahar Parbat (Birch Hill ) at a latitude of 27°, and longitude 88°E. Altitude is 6900 ft. a little above the Lebong Cart Road within the compound wall of the Zoological Park, opposite St. Joseph's College, Darjeeling.

This was the first instance of an Asian Zoo participating in the Snow Leopard Master Plan which was conceptualized by Mrs. Helen Freeman, President of the International Snow Leopard Trust and was also species coordinator of the "Species Survival Plan" for Snow Leopards.

A pair of unrelated Snow Leopards was flown to Darjeeling from Zurich Zoo via London and New Delhi on 21<sup>st</sup> March 1986. These beautiful specimens were "Kashi", the female and "Vishna", the male. The female was born on 26<sup>th</sup> August 1983 in the Zurich Zoo. The male was born on 23<sup>rd</sup> June 1978 in Helsinki Zoo. Another pair ( Hank and Persia ) came to Darjeeling Zoo from US. Zoos on 16.01.1989. The male " Hank" was born at Littlerock on June 6, 1985 and female "Persia" at San Anton on April 23, 1980. The pair gave birth to two female cubs on May 20, 1989. This was the first successful breeding of Snow Leopards in Darjeeling Zoo. "Quizil" ( Male, d.o.b. – May 23, 1990, Zurich ), "Quila" (female, d.o.b. – May 23, 1990, Zurich ) and "Quetta" ( female, d.o.b. – May 23, 1990, Zurich ) were later added to the collection of the Zoological Park on January, 28, 1992 to induce new blood and continue planned breeding programme at Darjeeling. Another male " Tyson" (d.o.b. - Aug 8, 1995) from Hunbstand arrived at Darjeeling on January, 27, 2000 for the same purpose. Two wild/rescued females "Neeta and Meeta" from Leh-Ladakh region of Jammu and Kashmir were also air lifted to Darjeeling by Chartered Plane of Ministry of Defence on May 17, 2000, again to continue with the breeding project of which ' Meeta' unfortunately died within few days of its arrival.

In the last twenty six years there are in total 47 births of Snow Leopards in captivity in the Padmaja Naidu Himalayan Zoological Park, Darjeeling. The Snow Leopard Breeding Project at Padmaja Naidu Himalayan Zoological Park, Darjeeling is one of the most successful and only breeding programme of the species in South East Asia.

The next step being taken by Darjeeling Zoo during the year 2004-05 was to provide six stable captive population of Snow Leopards at Shimla, Nainital and Sikkim Zoos. Necessary approval for transfer of these six Snow Leopards ( under exchange ) from Darjeeling Zoo to Gangtok, Nainital and Shimla Zoos was accorded by the Central Zoo Authority of India ( CZA ) and they were successfully transported.

All the record keeping of programme and animals is not only done in Darjeeling Zoo, but is also recorded with the International Stud Book Keeper of the species at Helsinki. A short term research project is ongoing in the the Park funded by Central Zoo Authority. The research project mainly shall focus on the ex-situ management of Snow leopards. Further more construction of a offdisplay Conservation Breeding facility is in progress at Topkeydara, Block under Senchel Wildlife Sanctuary.

Padmaja Naidu Himalayan Zoological Park, has on 31.3. 2013 (10) Snow Leopards ( 5 Males and 5 Females ), one of the largest captive population, in a single zoo. The details are as below---

Birth of one female snow leopard “Rare” at the Park has been recorded with an acquisition of one female snow leopard “Kim” from Nurnberg Zoo, Germany .one captive male Snow leopard “Subash” born at PNHZ Park was brought back from Shimla Zoo.

The Park received two female snow leopard from Lodz Zoo Germany.

<b>S L. no</b>	<b>Name</b>	<b>Stud#</b>	<b>Sex</b>	<b>Birth Date</b>	<b>Sire</b>	<b>Dam</b>	<b>Location</b>	<b>Transponder</b>	<b>National studbook number</b>
	Tyson	1850	M	8.081995	1723	1285	Hunbstrnd Darj	00-0611-163B	14
	Karan	1897	M	23.10.1995	1059	1474	Darj	981098102057256	16
	Tista	2399	F	29.03.2002	1897	2228	Darj	00-0611-4DB1	40
	Budha	2401	M	19.06.2002	1850	1797	Darj	00-061-FA9B	38
	Prabhat	2405	M	8.07.2002	1850	1899	Darj	00-0618-24E0	34
	Ritu	2538	F	11.03.2004	1897	2228	Darj	981098102056547	37
	Yasmin	2540	F	25.05.2004	1850	1797	Darj	ID-00-00F6-8A38	44
	Rare	2994	F	19.06.2012	2405	2538	Darj	956000002158446	-
	Kim	2846	F	29.05.2012	2566	2430	Nurnberg, Darj	3968000005548177	-
	Subash	2402	M	08.07.2002	1850	1899	Darj	00-0617-C8C5	-
	Lavani	2861	F	06.05.2010	2469	2274	Lodz, Darj	968000005545293	-
	Zima	2862	F	06.05.2010	2469	2274	Lodz, Darj	968000005542846	-

On 08.10.2013 Subash (M) and Teesta (F) was transferred to the Conservation Breeding Centre at Topkedara from the Conservation Breeding Centre of PNHZ Park. Again on 17.11.2013 Prabhat and Ritu transferred to Conservation Breeding Centre Topkedara and on 21.01.2014 Lavani transferred to Topkedara and Teesta brought back to Conservation Breeding Centre, PNHZ Park.

#### 4.1. PROJECT RED PANDA

**The main objective of the Project are as follows :-**

1. To provide opportunity to Scientists and Naturalists for study of various aspects of hitherto unknown biology/behaviour of the rare species.
2. Make efforts to establish subsidiary Conservation Breeding Centre in suitable location in Eastern Himalayas.
3. To raise public awareness about this endangered species and to cater popular and scientific information related to this species among people.
4. To restock the dwindling population of Red Panda in the Singhalila and Neora Valley Natural Parks and re-introduce the Red Panda back in the Senechal Wildlife Sanctuary.
- 5.

A major step in conservation of Red Panda was taken by Darjeeling Zoo under the Project Red Panda which started in the 1990's as part of the Global Red Panda Management Plan. Under this program, the zoo received six Pandas from various foreign zoos to augment the population from the already existing five wild Red Pandas in the zoo. The project aimed at systematically breeding the Red Panda in captivity and ultimately releases them in the wild. On 5.6.2006 one male red panda (house name – Sahani) was born. A total of thirty five births of Red Pandas in the zoo were recorded in the last thirteen years.

Today, Padmaja Naidu Himalayan Zoological Park, Darjeeling has a genetically healthy population of thirteen Red Pandas ( 10 males and 3 females ) in captivity ( as on 31.3.2006 ) and the Zoological Park has partially realized ultimate objective of the project of releasing zoo bred Red Pandas in the wild in Singhalila National Park. In fact, during 2003-04, and more precisely on 15<sup>th</sup> August 2003, two female Red Pandas namely Mini and Sweety were selected for the ultimate goal of release and on 14<sup>th</sup> November 2003, they were released into the wild following the IUCN guidelines for re-introduction/re-stocking of captivity born wild animals in totality. Before their release, into the wild, they were kept in the soft release facility set near the site where it is to be released. Both of the Pandas were monitored and their movements were recorded and both of the animals were radio collared. Despite all positive signs of adjustments and survival of Mini in the wild, the project lost here when she was predated upon, probably by a leopard and her remains ( skull, a portion of her tail and paw ) along with the attached collar were found on the 15<sup>th</sup> March, 2004.

The Year 2004-05 also saw the release of yet another captive born female Red Panda ( d.o.b. 18.06.2001 ), Neelam, into the wild at Singalila National Park. Before its release into the wild, Neelam was kept in the intermediary release facility w.e.f. 16.11.2003 to acclimatize and adapt to the environment there. During the eleven months of her stay there, she showed good signs of adaptation to the environment and habitat in the prerelease facility. She completely sustained herself on the wild food ( Bamboo & fruits ) available there and showed no signs of any adverse effect on her health and behaviour. Hence, she was deemed fit to be released in the wild before the breeding season of the Red Panda commenced. Neelam was radio collared on the 12.10.2004 and released on 14.10.2004 at the site where Sweety ( female Red Panda released on 2003 ) was also doing well. The area supports good habitat and treated as safe.

The next step being taken by Darjeeling Zoo during the year 1996-97 was to provide two stable captive population of Red Panda at Sikkim Zoos. Necessary approval for transfer of these two Red Panda ( under exchange ) from Darjeeling Zoo to Gangtok Zoos was accorded by the Central Zoo Authority of India ( CZA ) and they were successfully transported. PNHZ Park acquired one wild caught male red panda in 2008 from Darjeeling. 1:1 Red pandas were acquired from Gangtok Zoo as a part of the exchange programme approved by Central Zoo Authority on 31.10.2011.

Birth of one female red panda “Smile” at PNHZ Park on 19.06.2012. Genetic analysis of the captive stock of red panda has been done at Center for Cellular and Molecular Biology, Hyderabad. The analysis shows the

population to be heterozygous. A PHVA shall be conducted from 26<sup>th</sup> -29<sup>th</sup> November 2013 towards future conservation strategies.

The park acquired one female Red panda from Himalayan Zoological Park, Bulbuley.

SL NO	NAME	STUD BOOK NO.	SEX	SIRE	DAM	DT OF ACQ	DOB	TRANSPONDER NO
1.	Siddartha	01130	M	Gora	Ekta	-	18.6.01	0006CDBA8F
2.	Shakya	01127	M	Omin	Kalita	-	28.6.01	ID-00-0611-3083
3.	Sheetal	0354	F	Omin	Kalita	-	02.07.03	981-0981-02055661
4.	Shainee	0600	M	Shakhya	Annie	-	05.06.06	981-0981-0256336
5.	Shaan	0788	M	Siddartha	Sheetal	-	04.07.07	0006B71789
6.	Samridhi	0886	F	John	Sheetal	-	06.07.08	9810-9810-205573
7.	John	0561	M	Wild	Wild	3.4.07 from Gtk.	-	981-0981-02058449
8.	Kaijalee	0885	M	Wild	Wild	8.3.2008	-	981098102056409
9.	Pokhraj	01128	M	Gora	Ekta	-	18.6.01	ID-00-061-FD19
10.	Ram	1088	M	John	Sheetal	-	22.06.10	0006B82659
11.	Janaki	1089	F	John	Sheetal	-	22.06.10	0006B7428B
12.	Rahul	02111	M	Jugal	Preeti	31.10.11	20.06.02	0006B74A7F
13.	Rigsel	0789	F	Rahul	Lucky	31.10.11	28.05.07	0006B7107E
14.	Smile	-	U	Kaijalay	Samridhi	-	19.06.2012	956000002159372
15.	Shifu	-	M	Kaijalay	Rigsel	-	27.06.2013	956000002147924
16.	kitchi	-	M	Kaijalay	Rigsel	-	27.06.2013	956000002145534
17.	Sonam	-	F	John	Sheetal	-	28.06.2013	-
18.	Shova	-	F	ram	Lucky	23.02.2014	07.06.2011	956000002158277

On 23.01.2014 a pair of red panda Janaki and Siddartha was transferred to the Conservation Breeding centre at Topkedara. Later a pair kaijalay and Shova was also shifted to the new facility

**CHAPTER - 5**

**5.1. INVENTORY OF ANIMAL**

**PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK, DARJEELING, WEST BENGAL**

**ANIMAL INVENTORY FORM**

		<b>Animal listed from 1st April 2013</b> <b>31st March 2014</b>

Sl. No.	SPECIES	Opening Stock as on:				During the Period												Closing stock as on:			
		01.04.2012				Births			Acquisitions			Disposals			Deaths			31.03.2013			
		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
1	BEAR ASIATIC BLACK	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
	<i>Ursus thibetanus</i>																				
2	BLUE SHEEP	3	3	0	6	2	0	0	0	0	0	1	1	0	0	0	0	4	2	0	6
	<i>Pseudois nayaur</i>																				

Sl. No.	SPECIES	Opening Stock as on:			During the Period												Closing stock as on:				
3	CIVET HIMALAYAN PALM	3	1	0	4	0	0	0	0	1	0	0	0	0	1	0	0	2	2	0	4
	<i>Paguma larvata</i>																				
4	CIVET ASIAN PALM	1	3	0	4	0	0	0	1	2	0	0	0	0	0	1	0	1	5	0	6
	<i>Paradoxurus hermaphroditus</i>																				
5	DEER BARKING	3	2	0	5	1	3	0	0	0	0	0	0	0	2	1	0	2	4	0	6
	<i>Muntiacus muntjac</i>																				
6	DEER MUSK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<i>Moschus moschiferus</i>																				
7	DEER SAMBAR	1	3	0	4	0	1	0	0	0	0	0	0	0	0	0	0	1	4	0	5
	<i>Cervus unicolor</i>																				
8	GORAL	4	1	0	5	1	0	0	1	0	0	1	1	0	0	0	0	5	0	0	5
	<i>Nemorhaedus goral</i>																				



Sl. No.	SPECIES	Opening Stock as on:							During the Period									Closing stock as on:			
9	JACKAL	1	1	0	2	0	0	0	1	0	0	0	0	0	1	1	0	1	0	0	1
	<i>Canis aures</i>																				
10	LANGUR COMMON	3	6	1	10	0	0	0	0	0	0	1	3	0	0	0	0	2	3	1	6
	<i>Seminopithecus entellus</i>																				
11	LEOPARD CAT	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	<i>Prionailurus bengalensis</i>																				
12	LEOPARD CLOUDED	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	<i>Neofelis nebulosa</i>																				
13	LEOPARD COMMON	3	2	0	5	0	0	0	1	1	0	1	0	0	1	1	0	2	2	0	4
	<i>Panthera pardus</i>																				
14	LEOPARD SNOW	5	5	0	10	0	0	0	0	2	0	0	0	0	1	0	0	4	7	0	11

Sl. No.	SPECIES	Opening Stock as on:				During the Period												Closing stock as on:			
	<i>Uncia uncia</i>																				
15	SLOW LORIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	<i>Nycticebus coucang</i>																				
16	RED PANDA	9	5	0	14	1	2	0	0	1	0	0	0	0	0	0	0	10	8	0	18
	<i>Ailurus fulgens</i>																				
17	TAHR HIMALAYAN	3	3	0	6	1	1	0	0	0	0	0	0	0	1	1	0	3	3	0	6
	<i>Hemitragus jemlachius</i>																				
18	WOLF TIBETAN	2	10	0	12	0	0	0	0	0	0	0	0	0	0	2	0	2	8	0	10
	<i>Canis lupus himalayensis</i>																				
19	TIGER ROYAL BENGAL	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
	<i>Panthera pardus</i>																				

Sl. No.	SPECIES	Opening Stock as on:				During the Period												Closing stock as on:				
20	CAT JUNGLE	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
	<i>Felis chaus</i>																					
21	MARKHOR	1	4	0	5	3	1	0	0	0	0	0	0	0	1	0	0	3	5	0	8	
	<i>Capra falconeri</i>																					
	<b>TOTAL MAMMALS</b>	<b>49</b>	<b>54</b>	<b>1</b>	<b>104</b>	<b>9</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>7</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>8</b>	<b>7</b>	<b>0</b>	<b>49</b>	<b>58</b>	<b>1</b>	<b>108</b>	

**PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK,  
DARJEELING, WEST BENGAL**

**ANIMAL INVENTORY FORM**

**Animal Listed from 1st April 2013 to 31st March 2014**

Sl. No.	Species	Opening Stock as on:				During the period												Closing stock as on:			
		01.04.2013				Births			Acquisitions			Disposals			Deaths			31.03.2014			
		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
1	HIMALAYAN NEWT	6	7	11	29	0	0	0	0			0	0	0	0	0	0	6	7	11	24
	<i>Tylototriton verrucosus</i>																				

	<b>TOTAL AMPHIBIA</b>	6	7	11	29	0	0	0	0			0	0	0	0	0	0	6	7	11	24
	<b>REPTILE</b>																				
1	STAR TORTOISE	4	3	0	7	0	0	0		0	0	0	0	0	0	1	0	4	2	0	6
	<i>Geochelone elegans</i>																				
	<b>TOTAL REPTILE</b>	4	3	0	7	0	0	0		0	0	0	0	0	0	1	0	4	2	0	6
	<b>PHEASANTS &amp; BIRDS</b>																				
1	PHEASANT GREY PEACOCK	2	3	0	5	0	0	3	1	0	0	0	1	0	0	1	2	3	1	1	5
	<i>Polypectron bicalcaratum</i>																				
2	PHEASANT IMPEYAN (Monal)	1	1	0	2	0	0	2	0	0	0	0	0	0	0	0	2	1	1	0	2
	<i>Lophophorus impejanus</i>																				
3	RED JUNGLE FOWL	10	7	4	21	0	0	7	0	0	0	1	1	0	0	0	0	9	6	11	26
	<i>Galus galus</i>																				

4	PHEASANT KALIJ	13	6	0	19	0	0	10	0	0	0	2	4	0	1	1	7	11	3	0	14
	<i>Lophura leucomelana</i>																				
5	PHEASANT GOLDEN	7	13	0	20	0	0	15	0	0	0	4	6	0	0	0	0	11	14	0	25
	<i>Chrysolophus pictus</i>																				
6	PHEASANT SILVER	4	11	0	15	0	0	13	0	0	0	1	0	0	1	0	10	3	13	0	16
	<i>Lophura nycthemera</i>																				
7	PHEASANT LADY AMHERST	1	6	0	7	0	0	0	0	0	0	1	1	0	0	0	0	0	5	0	5
	<i>Lophura leucomelana</i>																				
8	PHEASANT RING NECKED	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	<i>Phasianus colchicus</i>																				
9	PHEASANT GREEN	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	<i>Phasianus versicolor</i>																				
10	PHEASANT CHEER	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	<i>Catreus wallichii</i>																				

11	MYNA HILL	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
	<i>Gracula regillosa</i>																				
12	ROSE RINGED PARAKEET	0	1	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	6
	<i>Psittacula krameri</i>																				
13	TORRACO GREY	1	2	0	3	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	2
	<i>Corythaixoides concolor</i>																				
14	PARROT ARFICAN GREY	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1
	<i>Psittacus erithacus</i>																				
15	MACAW BLUE AND GOLD	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	<i>Ara ararrauna</i>																				
16	MACAW RED AND BLUE	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
	<i>Ara chloroptera</i>																				
17	AMAZONE ORANGE WINGED	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2

	<i>Amazona amazonica</i>																					
18	TRAGOPAN TEMMINICK'S	0	2	0	2	0	0	3	1	0	0	0	0	0	0	1	2	1	0	0	1	
	<i>Tragopan temminckii</i>																					
	<b>TOTAL PHEASANTS &amp; BIRDS</b>	<b>46</b>	<b>59</b>	<b>13</b>	<b>118</b>	<b>0</b>	<b>0</b>	<b>53</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>13</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>27</b>	<b>47</b>	<b>51</b>	<b>17</b>	<b>115</b>	



## MORTALITY LIST

### PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK

1<sup>st</sup> April 2013- 31<sup>st</sup> March 2014

	Date	Animal	Sex	No	Cause of Death
<b>Mammals</b>					
	05.05.2013	Markhor	M	1	Death may be due to suspected ill nursing broncho-pneumonia and asphyxia condition.
	24.05.2013	Himalayan Palm Civet	M	1	Death may be due to suspected of old age stress.
	01.06.2013	Himalayan Thar faun	M	1	Death may be due to suspected of ill nursing and broncho pneumonia
	03.06.2013	Himalayan Thar faun	F	1	Death may be due to suspected of ill nursing and broncho pneumonia
	27.07.2013	Common leopard	M	1	Death may be due to feline Peritonitis(FIP) and benign gastro intestinal tumor
	13.08.2013	Common Leopard	F	1	Death may be due to old age

					and multi organ failure
	02.09.2013	Jackal	F	1	Death may be due to sudden cardiac respiratory failure
	14.09.2013	Snow leopard	M	1	Death may be due to old age and prostrits.
	01.10.2013	Barking Deer	M	1	Due to weakness since death
	10.10.2013	Asian Palm Civet	F	1	Death may be due to old age
	15.10.2013	Jackal	M	1	Death may be due to suspected old age
	18.10.2013	Blue sheep	F	1	Death may be due to suspected cardiac failure and kidney damage
	21.10.2013	Blue sheep	M	1	Death may be due to suspected old age
	31.10.2013	Barking deer	M	1	Death may be due to suspected pleural pneumonia
	19.11.2013	Barking deer	F	1	Death maybe due to cardiac arrest

	12.02.2014	Himalayan Wolf	F	1	Death may be due to old age
	20.2.2014	Himalayan Wolf	F	1	
<b>Pheasants</b>					
	04.05.2013	Kalij Pheasant	M	1	Death may be due infighting
	11.05.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	16.05.2013	Temminck's Tragopan	F	1	Due to suspected enteritis
	24.05.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	27.05.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	27.05.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	27.05.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	30.05.2013	Temminck's Tragopan	U	1	Gastroenteritis
	28.05.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing

	04.06.2014	Temminck's Tragopan	U	1	Gastroenteritis
	04.06.2013	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	10.06.2014	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	10.06.2014	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	10.06.2014	Silver Pheasant	U	1	Death may be due to suspected ill nursing
	29.06.2013	Kalij Pheasant	U	1	Due to Hypothermia
	01.07.2013	Himalayan Monal	U	1	Death may be due to infighting and external injury
	10.08.2013	Himalayan Monal	U	1	Death may be due to suspected gastroenteritis
	28.08.2013	Kalij Pheasant	U	1	Death may be due to cardio respiratory failure
	31.08.2013	Kalij Pheasant	U	1	Death may be due to cold shock
	02.09.2013	Kalij Pheasant	U	1	Death may be due to dashing

	11.09.2013	Kalij Pheasant	U	1	Death may be due to Hypothermia
	01.10.2013	Kalij Pheasant	U	1	Death may be due to Hypothermia
	01.10.2013	Kalij Pheasant	U	1	Death may be due to Hypothermia
	03.11.2013	Silver Pheasant Male	M	1	Death may be due to suspected heart attack
	30.11.2013	Kalij Pheasant	F	1	Death may be due to injury at the right thorax region, flight accident is indicated
	27.2.2014	Grey Peacock Pheasant	U	1	Death may be due to ill nursing
	27.2.2014	Grey Peacock Pheasant	U	1	Death may be due to ill nursing
	23.3.2014	Grey Peacock Pheasant	F	1	Death may be due to Cholangitis of liver and chronic diarrhoea
<b>Reptiles</b>					
	07.10.2013	Star Tortoise	F	1	Death may be due to cold.
<b>Birds</b>					
	10.04.2014	Hill Myna	U	1	Due to cold
	26.04.2013	Hill Myna	U	1	Old age

	27.04.2013	Hill Myna	U	1	Enteritis
	30.04.2013	Hill Myna	U	1	Enteritis
	24.06.2013	African Grey Parrot	F	1	Enteritis
	04.06.2013	Torraco grey	F	1	Death may be due to Suspected Hypothermia

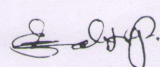
**Veterinary Officer,  
Padmaja Naidu  
Himalayan Zoological Park,  
Darjeeling, W.B.**

**SATELLITE ZOO DOWHILL**  
**PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK**  
**ANNUAL ANIMAL INVENTORY FORM**  
**FROM 1<sup>ST</sup> APRIL 2013 – 31<sup>ST</sup> MARCH 2014**

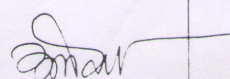
	Species	Opening Bal.				During the Period												Closing Balance					
		As on 01.04.2013				Birth			Acquisition			Transfer			Death			As on 31.03.2014					
		M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T		
01	BARKING DEER <i>Muntiacus Muntjac</i>	6	7	0	13	4	1	0	0	0	0	0	0	0	0	0	2	0	0	8	8	0	16
02	DEER SAMBAR <i>Carvus Unicolar</i>	0	1	0	01	0	0	0	0	0	0	0	0	0	0	0	00	0	0	0	1	0	01
03	BLUE SHEEP <i>Pseudo Nayaar</i>	3	2	0	05	1	1	0	0	0	0	1	1	0	0	0	0	0	0	3	2	0	05
04	HIMALAYAN GORAL <i>Nemorhaedus goral</i>	1	1	0	02	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3	2	0	05
05	HIMALAYAN THAR	0	0	0	00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	02
TOTAL MAMMALS		10	11	0	21	6	3	0	2	2	0	1	1	0	2	0	0	0	15	14	0	29	
BIRDS/PHEASANTS																							
06	GOLDEN PHEASANT <i>Chrysolophus Pictus</i>	1	4	0	05	0	0	12	0	0	0	0	0	0	0	0	0	0	0	5	12	00	17
07	LADY AMHEREST <i>Lophura leucomelana</i>	1	4	0	05	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	5	0	07
08	SILVER PHEASANTS <i>Lophura Nycthemera</i>	1	1	0	02	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	02
09	MONAL PHEASANTS <i>Lophophorus Impejanus</i>	1	1	0	02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	02
10	PHEASANTS <i>Lophura leucomelanato</i>	1	2	0	03	0	0	2	0	1	0	0	0	0	0	0	1	1	2	2	0	04	
11	SATYR TRAGOPAN <i>Tragopan Satyra</i>	2	1	0	03	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	02	
12	TEMMINCK'S TRAGOPAN <i>Tragopan Temminckii</i>	3	3	0	06	0	0	14	1	2	0	0	0	0	0	1	0	0	4	4	0	08	
TOTAL PHEASANTS		10	16	0	26	0	0	14	3	4	0	0	0	0	2	2	1	16	26	0	42		

NO 01 / SZD/24 DATE 1.04.2014

Seen & Forwarded to  
The Director, PNHZP  
Darjeeling.

Submitted:  
  
Rent Officer

Forwarded:  
  
Dy. Director  
DNLH7 Park

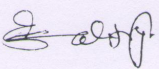
SEEN:  
  
Director  
DNLH7 Park



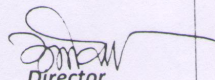
**SATELLITE ZOO DOWHILL  
PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK  
ANIMAL INVENTORY FORM  
FROM 1<sup>ST</sup> JANUARY 2014 - 31<sup>ST</sup> MARCH 2014**

Species	Opening Bal.				During the Period												Closing Balance						
	As on 1-01-2014				Birth			Acquisition			Transfer			Deaths			As on 31-03-2014						
	M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T			
<b>MAMMALS</b>																							
1 BARKING DEER <i>Muntiacus Muntjac</i>	8	8	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	16
2 DEER SAMBAR <i>Carvus Unicolor</i>	0	1	0	01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	01
3 BLUE SHEEP <i>Pseudo Nayaar</i>	3	2	0	05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	05
4 HIMALAYAN GORAL <i>Nemorhaedus goral</i>	2	1	0	03	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3	2	0	05
5 HIMALAYAN THAR <i>Hemitragus jemlahicus</i>	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	02
<b>TOTAL MAMMALS</b>	<b>13</b>	<b>12</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>14</b>	<b>0</b>	<b>29</b>
<b>BIRDS / PHEASANTS</b>																							
15 GOLDEN PHEASANT <i>Chrysolophus Pictus</i>	5	12	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	12	0	17
16 LADY AMHEREST <i>Lophura leucomelana</i>	1	4	0	05	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	5	0	07
17 SILVER PHEASANTS <i>Lophura Nycthemera</i>	1	1	0	02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	02
18 MONAL PHEASANTS <i>Lophophorus impejanus</i>	1	1	0	02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	02
19 KALIJ PHEASANTS <i>Lophura leucomelanota</i>	2	1	0	03	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	2	0	04
10 SATYR TRAGOPAN <i>Tragopan Satyra</i>	1	1	0	02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	02
11 TEMMINCK'S TRAGOPAN <i>Tragopan Temminckii</i>	3	2	0	05	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4	4	0	08
<b>TOTAL PHEASANTS</b>	<b>14</b>	<b>22</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>26</b>	<b>0</b>	<b>42</b>

NO 02 / SZD/24 DATE 1.04.2014  
Seen & Forwarded to  
The Director, PNHZP  
Darjeeling.

Submitted:  


Forwarded:  
  
Dy. Director

SEEN:  
  
Director

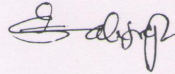


DEATH REPORT FROM 1<sup>ST</sup> APRIL 2013 TO 31<sup>ST</sup> MARCH 2014

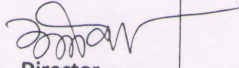
SL.NO.	NAME OF ANIMAL	M	F	U	DATE OF DEATH	CAUSE OF DEATH
01	Barking Deer	1	-	-	16.04.2013	Due to infighting & also may be due to Shock.
02	Temmincks Tragopan	-	1	-	16.05.2013	Due to suspect of Enteritis.
03	Kalij Pheasant	-	-	1	8.07.2013	Due to ill nursing.
04	silver Pheasant	1	-	-	19.08.2013	Due to old age, stress & respiratory failure.
05	Barking Deer	1	-	-	1.10.2013	Due to weakness since birth
06	Kalij Pheasant	-	1	-	24.10.2013	Due to dashing with the iron angle post.
07	Satyr Tragopan	1	-	-	3.12.2013	Due to suspect of Nerve damage of both legs.

No. 01 /SZD/24 DATE 1.04.2014.

Seen and forwarded to  
The Director,  
PNHZP, Darjeeling.

Submitted:  
  
Beat officer  
SZD

Forwarded:  
  
Dy. Director  
PNHZP  
Dowhill & Darjeeling

Seen:  
  
Director  
PNHZP  
Darjeeling

## 5.2. PHEASANTS AND ANIMALS IN THE ZOO AS ON 31<sup>ST</sup> MARCH, 2014- AN ABSTRACT

<b>AMPHIBIAN</b>	
HIMALAYAN NEWT ( <i>Tylotriton verrucosus</i> )	29
<b>TOTAL AMBHIIBIAN</b>	<b>29</b>
<b>PHEASANTS &amp; BIRDS</b>	
PHEASANT GREY PEACOCK ( <i>Polyplectron bicalcaratum</i> )	7
PHEASANT IMPEYAN MONAL ( <i>Lophophorus impejanus</i> )	4
RED JUNGLE FOWL ( <i>Gallus gallus</i> )	40
PHEASANT KALEEJ ( <i>Lophura leucomelanos</i> )	17
PHEASANT CHEER ( <i>Catreus wallichii</i> )	2
SATYR TRAGOPAN ( <i>Tragopan satyra</i> )	2
TEMMINCK'S TRAGOPAN ( <i>Tragopan temminckii</i> )	10
LADY AMHERST ( <i>Chrysolophus amherstiae</i> )	12
PHEASANT SILVER ( <i>Lophura nycthemera</i> )	18
PHEASANT GOLDEN ( <i>Chrysolophus pictus</i> )	42
PHEASANT GREEN ( <i>Phasianus versicolor</i> )	2
PHEASANT RING NECKED ( <i>Phasianus colchicus</i> )	2
HILL MYNA ( <i>Gracula religiosa</i> )	0
ROSE RINGED PARAKEET ( <i>Psittacula krameri</i> )	2
RED AND BLUE MACAW ( <i>Ara chloroptera</i> )	2
BLUE AND GOLD MACAW ( <i>Ara ararauna</i> )	2
GREY TORRACO ( <i>Corythaixoides concolor</i> )	2
ORANGE WINGED AMAZON ( <i>Amazona amazonica</i> )	2
AFRICAN GREY PARROT ( <i>Psittacus erithacus</i> )	1
<b>TOTAL BIRDS &amp; PHEASANTS</b>	<b>169</b>
<b>MAMMALS</b>	
INDIAN TIGER ( <i>Panthera tigris</i> )	3
CLOUDED LEOPARD ( <i>Neofelis nebulosa</i> )	2
COMMON LEOPARD ( <i>Panthera pardus</i> )	4
SNOW LEOPARD ( <i>Uncia uncia</i> )	11
BLACK PANTHER ( <i>Panthera pardus</i> )	1
TIBETAN WOLF ( <i>Canis lupus himalayensis</i> )	10
JACKAL ( <i>Canis aures</i> )	1
ASIATIC BLACK BEAR ( <i>Ursus thibetanus</i> )	4
RED PANDA ( <i>Ailurus fulgens</i> )	18
LEOPARD CAT ( <i>Prilonarius bengalensis</i> )	1
JUNGLE CAT ( <i>Chaus chaus</i> )	2
HIMALAYAN PALM CIVET ( <i>Pamuga larvata</i> )	4
COMMON GREY LANGUR ( <i>Seminopithecus entellus</i> )	6
ASIAN PALM CIVET ( <i>Paradoxurus hermophroditus</i> )	6
HIMALAYAN GORAL ( <i>Nemorhaedus goral</i> )	10
HIMALAYAN THAR ( <i>Hemitragus jemlahicus</i> )	8
BLUE SHEEP ( <i>Pseudois nayaur</i> )	11
SAMBAR DEER ( <i>Cervus unicolor</i> )	5
BARKING DEER ( <i>Muntiacus muntjac</i> )	22
YAK ( <i>Bos grueins</i> )	2
<b>TOTAL MAMMALS</b>	<b>131</b>
<b>REPTILES</b>	
STAR TORTOISE	6
<b>TOTAL REPTILES</b>	<b>6</b>
<b>TOTAL ANIMALS</b>	<b>335</b>

- a) Amphibian : 29  
b) Pheasants/Birds : 169  
c) Mammals : 131  
d) Reptiles : 6

-----  
**TOTAL ANIMALS : 335**

**HISTORY SHEET OF ENDANGERED ZOO ANIMALS FOR THE YEAR 2013-2014**

**Red Panda (*Ailurus fulgens*)**

House Name	Sex	Int. Stud Book No.	Transponder No.	Sire	Dam	Date of Birth	Place of Birth
Shifu	M	Applied for	95600002147924	0885	0789	27.06.2013	PNHZ Park
Kitchi	F	Applied for	95600002145534	0885	0789	27.06.2013	PNHZ Park
Sonam	F	Applied for		0561	0354	28.06.2013	PNHZ Park

**Blue Sheep (*Pseudois nayaur*)**

House Name	Sex	Int. Stud Book No.	Transponder No.	Sire	Dam	DOB	Place of Birth
Brad	M	-	PNHZPDARJAO33	PNHZPDARJAO16	PNHZPDARJAO17	23.5.2013	PNHZ Park
Nutan	F	-	PNHZPDARJAO43	PNHZPDARJAO13	PNHZPDARJAO14	27.05.2013	PNHZ Park
Angelina	F	-	PNHZPDARJAO47	PNHZPDARJAO26	PNHZPDARJAO23	27.05.2013	Satellite facility, Dow Hill.
Sunny	M	-	PNHZPDARJAO48	PNHZPDARJAO20	PNHZPDARJAO19	07.07.2013	Satellite facility, Dow Hill

**Himalayan Goral (*Nemorhaedus goral*)**

House Name	Sex	Int. Stud Book No.	Transponder No.	Sire	Dam	Date of Birth	Place of Birth
unnamed	M	-	-	PNHZPDARJAO02	PNHZPDARJA004	15.07.2013	PNHZ Park
unnamed	M	-	-	PNHZPDARJAO24	PNHZPDARJA025	02.09.2013	Satellite facility, Dow Hill

**Himalayan Thar**

House Name	Sex	Int. Stud Book No.	Transponder No.	Sire	Dam	Date of Birth	Place of Birth
------------	-----	--------------------	-----------------	------	-----	---------------	----------------

unnamed	U	-	-	PNHZPDARJAO05	PNHZPDARJA008	25.05.2013	PNHZ Park
unnamed	U	-	-	PNHZPDARJAO07	PNHZPDARJA009	31.05.2013	PNHZ Park

Markhor

<b>House Name</b>	<b>Sex</b>	<b>Int. Stud Book No.</b>	<b>Transponder No.</b>	<b>Sire</b>	<b>Dam</b>	<b>Date of Birth</b>	<b>Place of Birth</b>
<b>deepika</b>	F	-	-	PNHZPDARJAO40	PNHZPDARJA035	10.5.2013	PNHZ park
<b>Ranbeer</b>	M	-	-	PNHZPDARJAO40	PNHZPDARJA035	10.5.2013	PNHZ park
<b>Narendra</b>	M	-	-	PNHZPDARJAO40	PNHZPDARJA039	03.05.2013	PNHZ Park
<b>unnamed</b>	M	-	-	PNHZPDARJAO40	PNHZPDARJA038	04.05.2013	PNHZ Park.

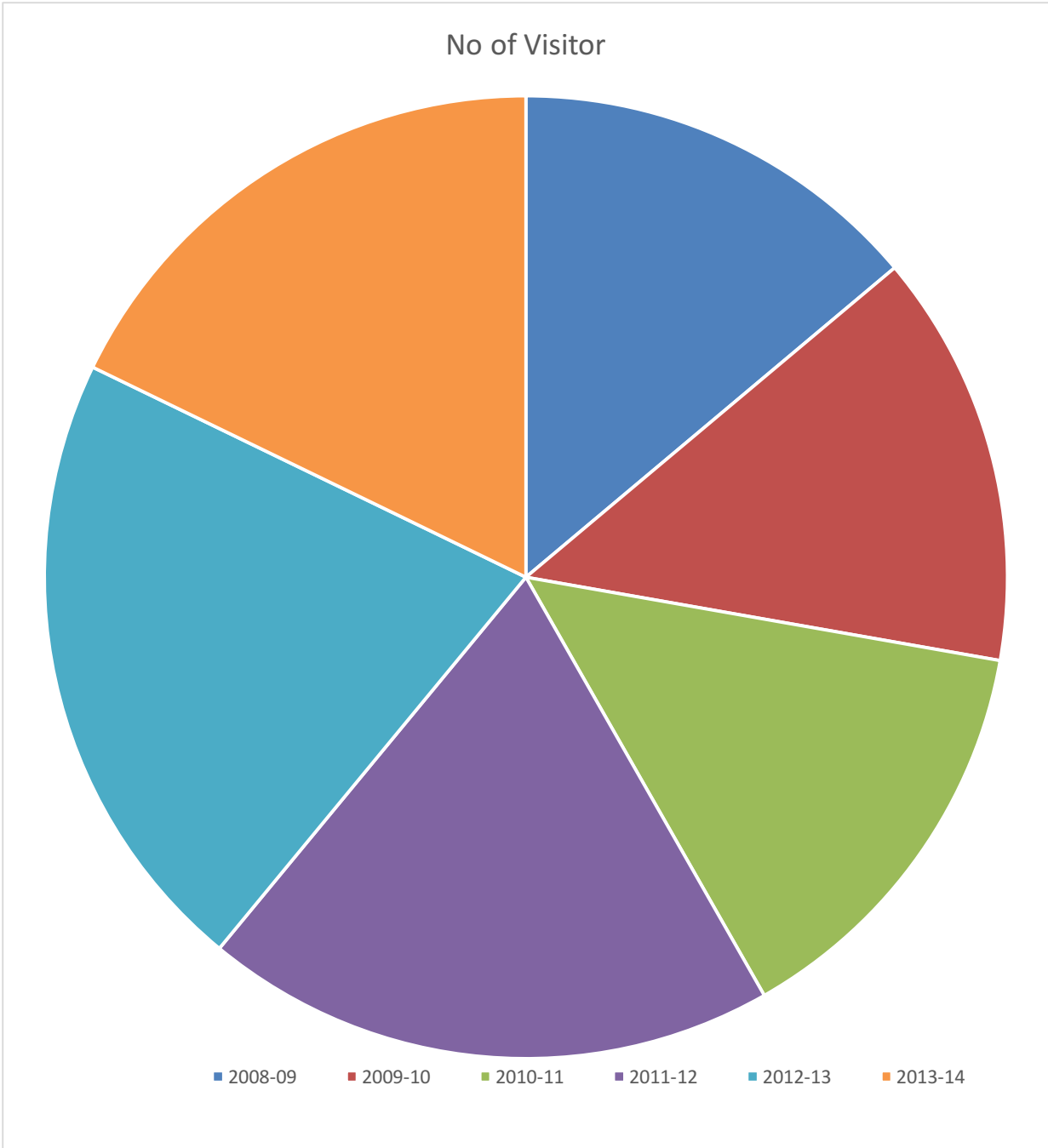
## CHAPTER 6

### 6.1. VISITORS STATISTICS

The visitor flow for last six years was as below---

<b>MONTH</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>April</b>	27549	28187	52834	35788	<b>50857</b>	50308
<b>May</b>	48325	49775	55587	61977	83161	73933
<b>June</b>	15867	47202	30112	60810	67198	65857
<b>July</b>	2974	7779	12267	19119	18120	13825
<b>August</b>	6929	8646	8133	14191	15208	476
<b>September</b>	11782	20723	13584	17862	16251	6515
<b>October</b>	37047	42257	39869	63237	48415	32512
<b>November</b>	23018	25644	31386	35463	43510	25588
<b>December</b>	20478	19703	27950	35503	40474	35922
<b>January</b>	10198	15716	12321	25599	26011	23405
<b>February</b>	9078	16027	5680	20574	19443	19692
<b>March</b>	17291	26458	20615	36545	41814	47256
	<b>308117</b>	<b>308117</b>	<b>310338</b>	<b>426668</b>	<b>470462</b>	<b>395289</b>

TOURIST FLOW –COMPARATIVE ( CHART )



<b>MONTH</b>	<b>NO.OF INDIAN VISITORS</b>	<b>NO.OF FOREIGN VISITORS</b>	<b>TOTAL VISITORS</b>	<b>REVENUE EARNED</b>
<b>April 2013</b>	48342	1966	50308	10,65,140.00
<b>May 2013</b>	72988	945	73933	15,07,010.00
<b>June 2013</b>	65433	424	65857	13,29,860.00
<b>July 2013</b>	13395	430	13825	2,89,400.00
<b>August 2013</b>	488	28	516	10,360.00
<b>September 2013</b>	5967	548	6515	1,46,740.00
<b>October 2013</b>	30334	2178	32512	7,15,580.00
<b>November 2013</b>	21859	3729	25588	6,23,630.00
<b>December 2013</b>	32882	3040	35922	8,09,640.00
<b>January 2014</b>	22694	711	23405	4,89,430.00
<b>February 2014</b>	18719	973	19692	4,23,030.00
<b>March 2014</b>	45729	1527	47256	9,90,930.00
<b>Total -</b>	<b>378790</b>	<b>16499</b>	<b>395289</b>	<b>84,00,750.00</b>

## 6.2 What the visiting Dignitaries had to say:-

Sl No.	Name	Degisnation	Date of visit	Comments
1	Mr. Panupat Chavananikul	Royal Thai Consulate General, Kolkota	27.04.2013	I'd have to say that the zoo is amazingly nice, cozy with good hospitability. Hope to visit the zoo again and again.
2	Miss Apakorn Dussarak	Royal Thai Consulate General, Kolkota	27.04.2013	Very good zoo and maintained.
3	Mr. karun Roy Choudhury	Royal Thai Consulate General, Kolkota	27.04.2013	It is really worth to see and as well as visiting this zoo. Land constraints but elaborately presented.
4	Mr Rajesh Mittal IFS	Principal CCF (FS) Andhra Pradesh, Hyderabad	17.05.2013	I find the guest house and logistics very homely and very descent. The staff is amicable. It was a home away from home. Thanks to the Director Zoo and staff. All best Wishes.
5	Shri. U.M. Sahai IFS	PCCF (Hoff) Rajasthan, Jaipur	24.05.2013	Visited the Zoo along with my wife. Mr Purna Ghishing, the Animal Supervisor took us around and shown the various species like Red panda, Clouded leopard, Blue Sheep, Black Panther, Snow leopard etc. The maintenance and upkeep of the Zoo was found to be very good and tidy. The Staff and the Director deserve appreciation for pat on their back. Please keep it up.
6	Mr. Chiranjiv Choudhury IFS	Commissioner, WD CW & Govt. of Andhra Pradesh, Hyderabad	26.05.2013	Zoo is compact beautifully maintained with rare collection of animals. Staff is very cordial and provided all possible assistance during our visit. Congratulate the zoo staff and wish them best of luck.
7	Mr. D.K. Sharma IFS	CCF, Gujarat	26.05.2013	It was really nice to visit one of the oldest zoos along with my family. It is well maintained zoo in the lap of Himalayas and felt happy to learn that captive breeding programme is also in operation. Staff is very devoted. Excellent tourist destination in Darjeeling. I wish good luck to the managers of zoo.



8	Brig General Brayan	BGB, Dhaka, Bangladesh	28.05.2013	It is a great pleasure to have an opportunity to visit a world class zoo (PNHZZP) a part of our visit to India. There are some special category of animals here which are not found in other parts of India. This zoo is also famous for conservation breeding. Thanks to the authority who are maintaining the zoo very nicely. Thanks for nice cooperation and hospitality. Wishing you all the best. may God Bless you all. Thanks.
9	Rajiv Ahir IPS	SIB Gangtok	30.05.2013	It was wonderful experience at the Darjeeling Zoo watching wildlife in their natural habitats. Very well maintained and managed would love to visit again.  Best Wishes.
10	Ms Renu Tiwari IAS	Bhopal, MP	04.06.2013	It was life time experience. Very clean natural atmosphere, very healthy animals shows the dedication of staff and excellent management. Would love to come again. staff is very sweet, polite and smart. Best wishes.
11	Mr. N.V. Singh	CCF/Director, Uttarakhand Forestry Training Academy	24.06.2013	Here Zoo is being managed with more natural ambience. It is outstanding management. The staff is also very qualified. Animal behaviour is praise worthy. The rest house is also one of the best forest rest houses.
12	Shri R.D. Meena IAS	Pr. Secy, GTA Darjeeling	28.06.2013	I visited Zoo and HMI alongwith my family. It is a wonderful experience to see these two institutions. This zoo is a unique one, maintained and managed very well. We would love to visit again and again.
13	Col. Md. Rustom Ali	Bangladesh	28.06.2013	It has been a wonderfully experience to visit HMI and museum. Thanks to the authority who are taking lot of care to maintain and allow the general people of home and abroad. Zoo inside is one of the very resourceful attracts. Wishing all the best.

14	Mrs. Susie Walker Munro	-	23.06.2013	.Such a pleasure to see such happy birds in 5 star accommodation! Thank you for letting me take so many photos as there are a lot of WPA members looking forward to hearing an update on such excellent progress. This is abredding programme that is an example to be rolled out internationally.
15	Mr. Ashwin Gulaati IFS	PCCF (Wildlife), CWLW, Shimla Himachal Pradesh	24.07.2013	<p>At last I got a chance to see the excellent Conservation breeding facilities so much talked about.</p> <p>Congratulation to the Director and his team for being so passionate and persistent with their mission.</p> <p>The facilities are excellent being improved further. I am pleased to see the passion in the staff to learn and implement.</p> <p>In coming years the facilities here are going to be useful for other zoos and breeding centres to evaluate.</p> <p>Keep it up.</p> <p>I look forward to regular interaction and exchange programme with the centre and Darjeeling Zoo.</p> <p>I would like to see the field staff and keepers to come to Himachal Pradesh and would certainly like to send my zoo and pheasantry staff to learn, interact and exchange. Congratulations once again for such excellent facilities.</p>
16	Dr. John Corder	Vice President WPA	24.07.2013	It gives me immense pleasure to see how the pheasant places have developed from concept to realty. This is the equal of the very best pheasantries in the world and all those involved in construction, planning and keeping are to be praised. Having had a small input in the conceptual development and later having a large group of Tragopans to come here from Europe, I am delighted to see what you have achieved I have no doubt that

				India's Conservation Breeding Programmes for Satyr and Temminck's Tragopan are in very good hands here.
17	14.11.2013	Mr. B.C. Choudhary	Rettd Professor & CZA Zoo Evaluation Wildlife Institute of India Dehradun	PNHZP has only progressed upward in Zoo management and is setting standards for itself and other zoos. The zoo staff need to be complemented and special thanks to the leadership.
18	19.11.2013	Mr. Ajit Dey Mrs. Nalini Dey Mr. Tarun Dey Ms. Sneha Dey	22 Embassy Ct Great Neck New York ,USA	Overwhelming memories from the time my father Dilip Dey, forwarded the Park; happy to see that it has flourished on .....in the spirit of my father's vision. My wife Nalini, son Tarun, daughter Sneha joins me in thanking the staff for their hospitality.
19	20.11. 2013	Mr. Ing. Jiri Travnicek	Zoo Plzen, CZECH REP	Thank you
20	30.11.2013	Dr. Angela Glatson	Rotterdam Zoo, NL	Nice to see PNHZ Park again!
21	11.01.2014	Dr. R.Sharma	Hon'ble MLA, 24 Kurseong A/C	Visited the zoo. Impressed with the upkeep of animals. Interacted with the research scholars. They have done a great job. I wish them all the success in the venture. Impressed with the research activities. The authorities have given a new dimension to the project. Best wishes.
22	11.01.2014	Mr. Chandi Charam Dey	West Bengal Legislative Assembly	It is a nice zoo and in this hill region it is a very good and fantastic zoo.
23	11.01.2014	Dr. A.K. Ba .....	SSO, DST, G.W.B. Bikash Bhawan, Salt Lake, Kolkata.	It is a splendid effort. Please keep it up. Thanks.
24	23.01.2014	Mr. Sanjay Mitra	Chief Secretary	Wonderful place. One of the best Conservation center of the country.
25	13.03.2014	Mr. S.J. Chandra Shekar	Deputy Director, Sr Chamarajendra Zoological Garden, Mysore (Mysore Zoo)	I visited along with my staff (Engineer, RFO & Administrative Asst.). Enrichment in the zoo is excellent, good place, nice weather. Interaction with the staff and research scholars enlightened us in many things. Good. Keep it up. Thanks a lot.
26	14.03.2014	Mr. Shanta Shrestha	NTNC, Kathmandu, Nepal	Rare species and good maintained as location.
27	14.03.2014	Mr. Raju Chaudhary	National Trust for Nature Conservation, Khumaltar, Nepal	Very good maintenance and good weather for every animals.
28	31.03.2014	Mr. Krishna P.Acharya	Joint Secretary,	Center of excellence.

			Ministry of Forests & Soil Conservation, Nepal.	
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## CHAPTER – 7

### A Brief History of Dowhill and Topkedara

#### **Dowhill Satellite Park, Kurseong.**

Dowhill Deer Park, Kurseong is located at uphill of Kurseong town, 4 km away amidst hilly forested tracts under Kurseong Forest Division. It was established in 1980 over 5.2 hectares of land. The Deer Park before housed Yak, Barking Deer, Mountain Goat, Rabbit. There is one abandoned Interpretation Center 8m x 8m. At present 2 CDL Quarter and a Rest Shed is on the other side of the Park. There is one shed near the gate. Before the Deer Park was managed by a Beat Officer assisted by two Group 'D' Staff and 3 daily wage worker. Most of the area of the existing deer park is mainly covered with thick wood having steep slope.

#### **NEED TO DEVELOP THE DEER PARK, DOWHILL, KURSEONG AS SATELLITE ZOO.**

Eastern Himlayan Zone, notably, Sikkim & Darjeeling forest are rich in biodiversity. Some herbivore species are rare and endemic and in the wild, their population is in dwindling state. A huge and partial infrastructural facility for creation of pheasantry and other breeding projects, so with the renovation of existing infrastructure conservation breeding of different herbivore and pheasants species can be done.

#### **PLANNING FOR EXTENSION ACTIVITY OF PROPOSED SATELLITE ZOO, DOWHILL, KURSEONG.**

In XXVIII Annual General Body Meeting and XXXIII Governing Body Meeting, the animal collection plan of this zoo was reviewed for inclusion in animal and birds collection plan of the zoo which may be kept in the proposed Satellite Zoo, Dowhill, Kurseong.

With reference to the Principal Conservator of Forests, West Bengal vide Letter No. 4428/CS/2M - 379/08 dated 29/09/08, and area of 4.65 hectares and 1.28 hectares of forest land under Kurseong Forest Division has been handed over for construction of Satellite Zoo and staff quarters respectively to Padmaja Naidu Himalayan Zoological Park, Darjeeling to develop it into a satellite zoo for the purpose of pheasantry as well as conservation breeding projects as dated 25/02/09.

After the handing of the Deer Park, Kurseong to PNHZ Park following work has been initiated.

1. Area Survey of Dowhill Eco Park.
2. Contouring of the Dowhill area has been done indicating landforms and elevations, hydrography, transportation, vegetation boundaries, urban areas, buildings and a variety of other features.
3. Construction of aviary, herbivore enclosures, staff quarters, Dy. Directors residential quarter, construction of suspension bridge.
4. Transfer of animals –Himalayan Monal, Golden Pheasant, Lady Amherst Pheasant, Satyr tragopan, Silver pheasant, Temminck's tragopan, Kaleej pheasant, Blue sheep, Himalayan Thar, Barking Deer, Himalayan goral.
5. The breeding centre has been doing remarkably well with successful births of endangered high altitude herbivores.
6. Birds of exotic and indigenous pheasants have also taken place.

## CONSERVATION BREEDING CENTRE FOR SNOW LEOPARD AND RED PANDA AT TOPKEDARA

5 hctrs of land in Topkedara block under Senchal Wildlife Sanctuary has been handed over to Padmaja Naidu Himalayan Zoological Park for the construction of the off- display Conservation Breeding Centre for Snow leopard and Red Panda. The area was inspected by the Chief Conservator of the Forests/Wildlife (North and Director/PNHZ Park on 30 November 2010. Survey of the area has been completed and contouring of the area is in process.

The new off-display Conservation Breeding Centre for Snow leopard (*Uncia uncia*) and Red Panda (*Ailurus fulgens*) at Topkedara funded by the Govt.of West Bengal and Central Zoo Authority, MoEF was inaugurated on 08.10.2013 by the Honorable Minister in Charge (Forest) Shri. Hiten Barman along with North Bengal Development Minister Shri. Gautam Deb. The inauguration was followed up by the release of a pair of Snow leopard (*Uncia uncia*) by the two ministers.

Views on the Conservation Breeding Centre

Date	Name	Remarks
30.11.2013	Dr. Angela Glatston	I really like this facility for red pandas. My only suggestion would be more climbing opportunities and perhaps sorbus plants.
30.11.2013	Dr Awadesh Kumar Department of Forestry NERIST, Nirjuli, Itanagar Arunachal Pradesh	I am very happy after looking entire conservationbreeding enclosures of Red panda and Snow leopard. Its really systematic and scientifically design and prepared. I hope you will get good and remarkable results from this hard work. Good luck.
30.11.2013	Ms. Sonam Choden WWF Bhutan	It's a very nice facility for Red Pandas and Snow leopard. I'm sure they will be happy here. All the best. Thank you for your hospitality and nice visit.
23.01.2014	Shri. Sanjay Mitra Chief Secretary, Govt. of West Bengal	It was a unique experience. Have been sold on Snow leopards since Peter Matthiessen's book. Thanks to the Director and staff of the PNHZ park. Wish them the best.
14.03.2014	Mr. S.J. Chandra Shekar Seputy Director, Mysore Zoo.	I was told about Snow leopard and red Panda in Wildlife Institute of India, Dehradun during my training (wildlife). I got the opportunity to see those animals here. Thanks to the Conservation breeding centre.

**Natural Interpretation Centre ( NIC ) and Bengal Natural History Museum BNHM )**

**NATURE INTERPRETATION CENTRE AND BENGAL NATURAL HISTORY MUSEUM AT PADMAJA NAIDU HIMALAYAN ZOOLOGICAL PARK, DARJEELING**

Inauguration of the first ever Nature Interpretation Centre at Padmaja Naidu Himalayan Zoological Park, Darjeeling on 19. 12.1999 under the initiative of the then Director Mr. D. Biswas IFS pointing out that tourists besides wildlife activists could collect information related to wildlife and biodiversity of the North- eastern region.

Interpretation is defined as an Educational Activity, which aims to reveal meanings and relationship, not simply by factual information, but through the use of original objects by first hand experience and by illustrative media. Interpretation provides a first – hand opportunity to enrich the experience of nature and thus is a very important communication tool in protected areas. Interpretation has the potential to educate visitors about the natural resources, the relationship between humans and natural resources and the need for conservation and park management policies. In turn, increased understanding of natural resources may generate visitors support for conservation of the park's resources.

Nature interpretation is one of the many methods used to disseminate quality information to the visitors in a way that it supports the better management of the area and encourages real appreciation for the park. Nature Interpretation serves two main functions – Education & Recreation. Through interpretation one hopes to raise awareness of environmental issues, to sensitize, to create understanding and appreciation of the site and to make then whole experience more meaningful. It is the most effective and exciting media for interpreting the Nature to the large number of visitors.

THE MAIN AIM OF NATURE INTERPRETATION CENTRE IS TO PLAY A SUPPORTIVE ROLE AND ENCOURAGE BETTER INTERACTION WITH THE VISITORS WHO ARE GENUINELY INTERESTED IN INTERACTING WITH NATURE, LEARNING FROM IT AND BRINGING ABOUT A SYSTEMATIC CHANGE IN THE ENVIRONMENT FOR THEIR OWN SUSTENANCE.

The Nature Interpretation Centre, was located at the premises of the Park, a close look at the one-storied building itself filled the visitors with a sense of joy and thrill as the inside of the centre depicted – two rooms – One in the form of a corridor and the other a circular one. The entire concept was to depict a “Typical Himalayan Forest” The entire one – storied building was divided into two sections – The outer and the deeper part of the forest. On entering the centre the visitors were allowed to walk through a path where on both the sides a typical Himalayan forest lies. As the visitors walked they could experience a Himalayan forest and its biodiversity- The forest included both the flora and fauna of the North- Eastern regions, The forest is inhabited by different types of pheasants and birds – Satyr Tragopan, Himalayan Monal, Red Jungle Fowl and birds like woodpecker, Mynas etc added excitement amongst the visitors. The call of the Red pandas keeps the visitors in awe. As we move deeper inside the forest it is inhabited by larger mammals. Each well-organized diorams depicted the food habits, habitat, survival strategy, behaviour etc of these mammals in the wild. A pack of Tibetan Wolves feeding on a carcass with a vulture watching from a branch of a tree, different species of high altitude herbivores – The Himalayan Goral, Blue Sheep, Himalayan Thar etc feeding . A flowing stream showing a few highly endangered amphibian- The Salamanders. Moving forward the visitors learn more about another endangered carnivore, the Clouded leopard (*Neofelis nebulosa*) feeding over a

barking deer. The two Asiatic Black bears (*Ursus thibetanus*) playing amongst the Himalayan backdrop and the Snow leopard hunting in the wild keeps the visitors wondering about the North- Eastern wildlife. As they walk out of the jungle, they can see the sun setting, the birds chirping, animals retiring etc. This Nature Interpretation Centre at the Park has been successful in creating awareness and promoting biodiversity, conservation and eco-tourism. People from all age groups took keen interest in this Nature Interpretation Centre with an aim to enjoy and learn something through this simple form of Interpretation of Himalayan flora and fauna.

### **BENGAL NATURAL HISTORY MUSEUM :**

With the establishment of the Northern Bengal State Railway in 1878 and connection with Darjeeling in 1881 with the name Darjeeling Himalayan Railway the popularity of Darjeeling as Hill Station spread eventually and visitors began thronging the Hill Station, many were amazed by the faunal diversity of this place. As recorded during that period the mammalian species comprised between 80-90 species including some of the rarer cats, pandas and the Himalayan flying squirrel. About 450 species of birds- nearly one-fifth of the total species found in the Indian sub- continent, 100 species of Snakes, exceedingly rich in insects and butterflies.

With this richness in 1903 the Lt. Governor of Bengal intimated the Govt. of India of his idea of starting a small Museum at Darjeeling allowing the visitors to the hill station an opportunity to obtain information about Birds and Butterflies of the district.

A suitable site was chosen in the Lloyd's Botanical Garden and a building was constructed for the purpose. The Museum was looked after by the committee comprising the Dy. Commissioner, Tea Planter, a vice Chairman of Darjeeling Municipality, Dy. Conservator of Forest and Executive Engineer. This arrangement proved unsatisfactory and in 1915 Lord Carmichael, Governor of Bengal took an interest in the Museum and the present building was completed in 1915. The maintenance was still a problem and in spite of approaching the Indian Museum, Calcutta and the Zoological Survey of India the offer was turned down for the upkeep of the Museum. It was finally decided that the Bengal PWD would be responsible for the building; the committee for arrangement directly saw the requirement of a Curator. In 1922 it was proposed that a Natural History Society should be established to take over the Museum and be responsible for its maintenance and the publication of small quarterly periodicals. Thus Darjeeling Natural History Society was accordingly formed which took over the management of the Museum in 1923 with the aims and objectives as follows:

- ✍ To promote the study of Natural History of Northern Bengal and Eastern Himalayas and to get together a representative collection of the fauna of North Bengal and the adjoining parts of Sikkim, Nepal and Bhutan.
- ✍ Maintaining the Natural History Museum
- ✍ To engage in such other acts as are incidental or conducive to the attainment of the above objects.

Mr. Charles M. Inglis, an amateur ornithologist was persuaded to accept the post of the curator. He served the Museum for 26 years from 1923- 1948 and built up the Museum by also adding his own private collection.

### **HANDING OVER OF BENGAL NATURAL HISTORY MUSEUM TO PADMAJA NAIDU**

## HIMALAYAN ZOOLOGICAL PARK

On the keen interest of the Ex- Governor of West Bengal Mr. Gopal Krishna Gandhi who wanted the museum to be shifted to Padmaja Naidu Himalayan Zoological Park, the museum was Officially handed over to the Park on 07.01.2010 till date which was directly under the control of the Wildlife Division I for its upkeep and maintenance and further upliftment of the museum in the near future Bengal Natural History Museum, Darjeeling, provides the keen visitors with precious knowledge on the natural world and resources, significant enough to generate the commoner's awareness about natural environ. Bengal Natural History Museum, Darjeeling, enchants visitors with a fascinating presentation of diverse nature, full of flora and fauna , the museum is not only important form the archaeological point of view , but also focuses on the process of natural evolution.

There are a wide variety of items in the exhibit area at present. All the items on display including the stock have been inventorised. Later these items have been digitized by photographing each items and also providing informations of the items thus making it easier to preserve, access, and share in the form of a book. The items at the museum includes Skull, Antlers, Horns, Head mounts, Full body mounts, Skin of different animals, Tusk & feet of Elephant, Birds, Pheasants, Nests and Eggs of various birds and Pheasants, Dragonflies, Insects, Grasshoppers, Moths, Beetles, butterflies, snakes, fishes etc.details as below.

Sl no.	Items	Species
1	Skull	Ibex, Blue sheep, Great Tibetan sheep, Marcopolo sheep, Takin, Serow, Goral, Shap Black buck, Tibetan Antilope, Shou, Shamber Deer, Spotted Deer, Indian Gaur
2	Anklers	Barasingha, Shou, Barking Deer, Hog Deer, Kashmir stag, Sambhar Deer, Spotted Deer,
3	Horns	Goral, Black buck, Indian Gazella, Nilgiri Thar,
4	Head mount	Nilgiri Thar, Indian Gazella, Black buck, Barasingha, Barking deer, Hog deer, Kashm stag, Shamber Deer, Spotted Deer, Indian gaur, Wild Buffalo, Indian Wild Boar, Tige Asiatic Black Bear, Snow Leopard, Yak,
5	Full body mount	Clouded Leopard, Royal Bengal tiger, Common Leopard, Spotted Deer Calf, Yello Throated Martin, Asiatic Black Bear, Red Panda, Common Indian Mongoose, Easter Pangolin, Estuarine Crocodile,
6	Skin	Monitor Lizard, Royal Bengal Tiger, Snow Leopard, Otter, common Leopard, Asiatic Blac Bear, Shamber, Spotted Deer, Himalayan Palm Civet, Martin, Yak, Goral, Leopard Cæ Flying Squirrel, etc.
7	Tusk & Feet	Elephant .



8	Birds	Mynas , Night jar, Thrush, Warblers, Flycatchers ,Kingfisher, Snipe, Wood peckers, Bird of prey, Swifts, Niltava, Water birds, Barbets, Hornbills, Cuckoos, parrots & Parakeet Owls , Minivets, Fantails, Chats, Robin , Buntings, Sunbirds , Broadbills , Finche Nutcrackers, Suthora, Jay, Weaver birds, Munia, Sparrows, Swallows, Shrikes, Leothri Cutia, Barbing, Bablers,Larks, Vulture, Bustards, etc.
9	Pheasants	Koklas, Satyr Tragopon, Red Jungle Fowl, Himalayan Monal, Indian Peacock, Mrs. Hun Barred Backed, Cheer,
10	Nest	Warblers, Flycatcher, Thrush, Tit, Bablers, Chat, Flowerpeckers, Bulbul, Finch, Swift,
11	Eggs	Thrush , Jacana, Kingfisher, Mynas, Bushchat, warbler, Plover, Curlews, Weaver, Partidg Robins, Cracke, Baye, Kite, Koel, Pheasant, Owl, White eye,
12	Dragon, Flies & Insects	Cicadidae, Fulgaidae, Pentatoenidae, Cosmomcorta, Longicora, Coleoptera, Elatrida Chycomellidae, Curculionidae,
13	Grasshoppers	-
14	Moths	-
15	Beetles	-
16	Butterflies	Lime Butterfly, Western Courtier, Autumn Leaf, Blue Admiral, Plain Tiger, Blue Bottl Red Helen, Paris Peacock etc.
17	Snakes	Vipers, Krait, whip Snake, Rat Snake, Cat Snake, Cobra, Coral Snake etc.
18	Fishes	Katla, Bagha, Chega, Pabda, Singhi, Magur, Tengra, Katle,etc.
19	Others	Green Turtle Star Fish, Giant Leech, Indian Salamander etc.

#### Number of visitors and revenue collected at Bengal Natural History museum 2013-2014

MONTH	TOTAL VISITORS	REVENUE COLLECTED
April 2013	2366	23660
May 2013	4186	41860
June 2013	6127	61270
July 2013	2279	22790
August 2013	0	0
September 2013	0	0

October 2013	1867	18670
November 2013	0	0
December 2013	2428	24280
January 2014	3079	30790
February 2014	1582	15820
March 2014	4944	49440
	<b>28858</b>	<b>288580</b>

### BIODIVERSITY OF DARJEELING ZOO

<b>BIRDS</b>		
1	<i>Aethopyga Nipalensis</i>	Green tailed sunbird
2	<i>Alcippe castaneiceps</i>	Rufous winged fulvetta
3	<i>Arachnothera longirostra</i>	Little spider hunter
4	<i>Certhia nipalensis</i>	Rusty flanked tree creeper
5	<i>Cissa chinensis</i>	Common green magpie
6	<i>Corvus macrorhynchos</i>	Largebilled crow
7	<i>Culicicapa ceylonensis</i>	Gray headed canary flycatcher
8	<i>Dendrocopos canicapillus</i>	Grey-capped pygmy woodpecker
9	<i>Dendrocopos darjellensis</i>	Darjeeling woodpecker
10	<i>Dendrocopos macei</i>	Fulvous breasted woodpecker
11	<i>Eumyias thalassina</i>	Verditer flycatcher

12	<i>Ficedula hyperythra</i>	Snowy browed flycatcher
13	<i>Ficedula westermanni</i>	Little pied flycatcher
14	<i>Garrulax erythrocephalus</i>	Chestnut crowned laughing thrush
15	<i>Gracula religiosa</i>	Hill myna
16	<i>Heterophasia capiatrata</i>	Rufous sibia
17	<i>Hypsipetes leucocephalus</i>	Black bulbul
18	<i>Icinaetus malayansis</i>	Black eagle
19	<i>Lanius tephronotus</i>	Grey backed shrike
20	<i>Leiothrix argenteauris</i>	Silver eared mesia
21	<i>Minla ignotincta</i>	Red tailed minla
22	<i>Minla strigula</i>	Chestnut tailed minla
23	<i>Monticola rufiventris</i>	Chestnut bellied rock thrush
24	<i>Myiomela leucora</i>	White tailed robin
25	<i>Myophonus caeruleus</i>	Blue whistling thrust
26	<i>Niltava grandis</i>	Large niltava
27	<i>Orthotomus cuculatus</i>	Mountain tailorbird
28	<i>Parus monticolus</i>	Green backed tit
29	<i>Passer montanus</i>	Urasian tree sparrow
30	<i>Pericrocotus ethologus</i>	Long tailed minivet
31	<i>Pericrocotus flammeus</i>	Scarlet minivet
32	<i>Phylloscopus affinis</i>	
33	<i>Phylloscopus trochiloides</i>	Greenish tree warbler

34	<i>Picus chlorolophus</i>	Lesser yellownape
35	<i>Picus flavinucha</i>	Greater yellownape
36	<i>Psittacula eupatria</i>	Alexandrine parakeet
37	<i>Psittacula krameri</i>	Rose ringed parakeet/ green parrot
38	<i>Pycnonotus flaviventris</i>	Black crested bulbul
39	<i>Rhipidura albicollis</i>	White throated fantail
40	<i>Rhipidura aureola</i>	White browed fantail
41	<i>Rhyacornis fuliginosus</i>	Plumbeous water redstart
42	<i>Seicercus castaniceps</i>	Chestnut crowned warbler
43	<i>Sitta himalayensis</i>	White tailed nuthatch
44	<i>Tesia castaneocoronata</i>	Chestnut headed tesia
45	<i>Turdus boulboul</i>	Grey winged black bird
46	<i>Yuhina flavicollis</i>	Whiskered yuhina
47	<i>Yuhina gularis</i>	Stripe throated yuhina

#### Flowering plants

Trees		
Sl No.	Scientific Name	Local Name
1	<i>Acer campbellii</i> Hk . f.& T.	Kapasi
2	<i>Acer laevigatum</i> W all.	Putli

3	<i>Acer osmastonii</i> Ga mble.	Kapasi
4	<i>Acer thomsonii</i> M iq.	Melo kapasi
5	<i>Actinodaphne sikkimensis</i> M e issn.	Siksiki / Phurke sissi
6	<i>Alnus nepalensis</i> D. Don.	Utis
7	<i>Beilschmiedia sikkimensis</i> Kin g.	Tarsing
8	<i>Betula alnoides</i>	Saur
9	<i>Brassaiopsis hispida</i>	Phutta.
10	<i>Bucklandia populnea</i> R.B r.	Pipli
11	<i>Casearia glomerata</i> Ro xb.	Barkaunle
12	<i>Castanopsis hystrix</i> A. DC.	. Katus
13	<i>Toona ciliata</i> M .Roem.	Tooni
14	<i>Cinnamomum bejolghata</i> (Bu ch.Ham)Sweet	.Bhale sinkoli
15	<i>Cryptomeria japonica</i> Do n.	Dhupi
16	<i>Elaeocarpus sikkimensis</i> Ma st.	Bhadrase
17	<i>Engelhardtia spicata</i> Blu me.	Mauwa
18	<i>Eriobotrya petiolata</i> Hk .f.	Maya
19	<i>Erythrina arborescens</i> Ro xb	Phaledo
20	<i>Eurya acuminata</i> DC .	Sanu jhingani
21	<i>Evodia fraxinifolia</i> Hk .f.	Khanakpa
22	<i>Ficus hookeri</i> M iq.	Nevaro
23	<i>Ficus nemoralis</i> W all.	Dudilo
24	<i>Glochidion acuminatum</i> Mu ell.	Dole malata
25	<i>Hovenia dulcis</i> Th unb.	Bangikath

26	<i>Ilex sikkimensis</i> Ki ng.	Hare/Lise.
27	<i>Juglans regia</i> Li nn.	Okhar
28	<i>Leuceptrum canum</i> Sm .	Ghurpis
29	. <i>Litsaea citrata</i> Bl ume.	. Siltimur
30	<i>Macaranga denticulata</i> Mu ell.	Latikath
31	<i>Macaranga pustulata</i> Ki ng.	Sanu malata
32	<i>Machilus edulis</i> King.	Lapche kawla
33	<i>Maesa chisia</i> D on.	Bilaune
34	<i>Mahonia acanthifolia</i> G.D on.	Chutro
35	<i>Meliosma wallichii</i> Pla nch.	Lekh dabdabe
36	<i>Michelia cathcartii</i> Hk .f.& T.	Tite champ
37	<i>Michelia excelsa</i> Bl ume.	Rani champ
38	<i>Nyssa javanica</i> W angerin	Lekh chilauna
39	<i>Pentapanax leschenaultia</i> See m.	Chinde
40.	<i>Pieris ovalifolia</i> W all.	Angeri
41.	<i>Prunus cerasoides</i> Do n.	Paiyun
42.	<i>Prunus nepaulensis</i> C. K.Schn.	Arupate
43.	<i>Pyrularia edulis</i> A. DC.	Amphi
44.	<i>Quercus fenestrata</i> Ro xb.	Arkawla

Qdrt no.	Name of the species	Local Name	Breast height girth	Approx. height (mt)
Q <sub>1</sub>	<i>Andromeda elliptica</i> Sieb & Zucc.	Angeri	1.10 mt	15
	<i>Andromeda elliptica</i> Sieb & Zucc.	Angeri	1.10 mt	16
	<i>Castanopsis hystrix</i> A.DC.	Katus	2.60 mt	25
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.40 mt	18
	<i>Machilus sp</i>	Lise kawla	1.30 mt	20
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	91 cm	18
	<i>Bucklandia populnea</i> R.Br.	Pipli	1.40 mt	30
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.10 mt	25
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.90 mt	30
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.10 mt	25
	<i>Alnus nepalensis</i> D.Don.	Utis	1.50 mt	50
	<i>Erythrina arborescens</i> Roxb.	Phaledo	91 cm	18
	<i>Symplocos theifolia</i> Don.	Kharane	91 cm	25
Q <sub>2</sub>	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.40 mt	45
	<i>Symplocos theifolia</i> Don.	Kharane	95 cm	12
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1 mt	20
	<i>Castanopsis hystrix</i> A.DC.	Katus	2.10 mt	25
	<i>Machilus edulis</i> King.	Lapche kawla	1.63 mt	30
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.27 mt	25
	<i>Meliosma wallichii</i> Planch.	Lekh dabdabe	90 cm	10
	<i>Nyssa javanica</i> Wangerin	Lise chilaune	1.30 mt	27
	<i>Eriobotrya petiolata</i> Hk.f.	Maya	1.60 mt	30
	<i>Machilus sp</i>	Lise kawla	1.65 mt	27
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.65 mt	29
	<i>Machilus sp</i>	Lise kawla	1.55 mt	25
Q <sub>3</sub>	<i>Quercus lamellose</i> Smith.	Buk	1.37 mt	35
	<i>Quercus lamellose</i> Smith.	Buk	1.45 mt	36
	<i>Alnus nepalensis</i> D.Don.	Utis	1.37 mt	38
	<i>Quercus lamellosa</i> Smith.	Buk	1.20 mt	37
	<i>Quercus lamellose</i> Smith.	Buk	1.10 mt	34
	<i>Machilus edulis</i> King.	Lapche kawla	1.15 mt	40
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.32 mt	41
	<i>Machilus edulis</i> King.	Lapche kawla	1.20 mt	40
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.84 mt	35
	<i>Meliosma wallichii</i> Planch.	Dabdabe	91 cm	20
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.10 mt	35
	<i>Nyssa javanica</i> Wangerin	Likh chilaune	1.36 mt	36
		<i>Quercus lamellosa</i> Smith.	Buk	2.30 mt

<b>Q<sub>4</sub></b>	<i>Nyssa javanica</i> Wangerin	lekh chilaune	91 cm	25
	<i>Machilus gammieana</i> King.	Chiple kawla	91 cm	19
	<i>Machilus edulis</i> King.	Lapche kawla	2 mt	35
<b>Q<sub>5</sub></b>	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.30 mt	20
	<i>Michelia cathcartii</i> Hk.f.	Tite chanp	91 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	18
	<i>Quercus lamellosa</i> Smith.	Buk	1.45 mt	30
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.45 mt	25
	<i>Quercus lamellosa</i> Smith.	Buk	1.35 mt	30
	<i>Michelia cathcartii</i> Hk.f.	Tite chanp	1.06 mt	35
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.53 mt	30
	<i>Beilschmiedia sikkimensis</i> King.	Tarsing	1.06 mt	32
	<i>Acer laevigatum</i> Wall.	Putli	91 cm	30
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	17
	<i>Evodia fraxinifolia</i> Hk.f.	Khanakpa	91 cm	19
<b>Q<sub>6</sub></b>	<i>Beilschmiedia sikkimensis</i> King.	Tarsing	1.50 mt	40
	<i>Glochidion acuminatum</i> Muell.	Latikath	91 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	93 cm	20
	<i>Castanopsis hystrix</i> A.DC.	Katus	3 mt	40
<b>Q<sub>7</sub></b>	<i>Cryptomeria japonica</i> Don.	Dhupi	1.38 mt	35
	<i>Cryptomeria japonica</i> Don.	Dhupi	1.50 mt	36
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.38 mt	30
	<i>Eurya acuminata</i> DC.	Jhingeni	91 cm	20
	<i>Michelia cathcartii</i> Hk.f.	Tite chanp	95 cm	25
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.26 mt	30
	<i>Michelia excels</i> Blume.	Rani chanp	1.13 mt	35
	<i>Elaeocarpus varunua</i> Ham.	Bhadrase	1.32 mt	32
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.13 mt	35
	<i>Machilus gammieana</i> King.	Chipli kawla	1.09 mt	33
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.51 mt	35
	<i>Quercus lamellosa</i> Smith.	Buk	91 cm	36
	<i>Beilschmiedia sikkimensis</i> King.	Tarsing	91 cm	35
	<i>Beilschmiedia sikkimensis</i> King.	Tarsing	1.23 mt	40
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.40 mt	40
	<i>Quercus lamellosa</i> Smith.	Buk	94 cm	35
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	1.34 mt	40
<b>Q<sub>8</sub></b>	<i>Castanopsis hystrix</i> A.DC.	Katus	1.9 0 mt	30
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	96 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	15
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	22
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	21



	<i>Castanopsis hystrix</i> A.DC.	Katus	90 cm	23
	<i>Symplocos theifolia</i> Don.	Kharane	91 cm	23
	<i>Betula alnoides</i> Ham.	Saur	91 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	20
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	20
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	20
	<i>Castanopsis hystrix</i> A.DC.	Katus	91 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	20
	<i>Castanopsis hystrix</i> A.DC.	Katus	91 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	20
	<i>Quercus fenestrata</i> Roxb.	Arkaula	94 cm	25
	<i>Quercus fenestrata</i> Roxb.	Arkaula	91 cm	22
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	90 cm	23
	<i>Symplocos theifolia</i> Don.	Kharane	91 cm	24
	<i>Symplocos theifolia</i> Don.	kharane	91 cm	23
<b>Q<sub>9</sub></b>	<i>Quercus lamellosa</i> Smith.	Buk	3.09 mt	20
	<i>Michelia lanuginosa</i> Wall.	Phusre chanp	91 cm	20
	<i>Beilschmiedia sikkimensis</i> King.	Tarsing	1.27 mt	25
	<i>Michelia cathcartii</i> Hk.f.	Tite chanp	91 cm	18
	<i>Bucklandia populnea</i> R.Br.	Pipli	1.97 mt	35
	<i>Castanopsis hystrix</i> A.DC.	Katus	2.24 mt	35
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.25 mt	30
	<i>Beilschmiedia sikkimensis</i> King.	Tarsing	1.40 mt	35
	<i>Bucklandia populnea</i> R.Br.	Pipli	1.90 mt	37
<b>Q<sub>10</sub></b>	<i>Michelia lanuginosa</i> Wall.	Phusre chanp	2.24 mt	42
	<i>Prunus nepaulensis</i> CK.Schn.	Arupate	91 cm	30
	<i>Machilus gammieana</i> King.	Chipli kawla	92 cm	32
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	91 cm	30
	<i>Cinnamomum impressinervium</i> Meissn.	Sissi	1.87 mt	35
	<i>Machilus gammieana</i> King.	Chipli kawla	90 cm	35
	<i>Prunus nepaulensis</i> CK.Schn.	Arupate	92 cm	20
	<i>Michelia excels</i> Blume.	Rani chanp	1.58 mt	30
	<i>Michelia excels</i> Blume.	Rani chanp	1.47 mt	31
	<i>Prunus nepaulensis</i> CK.Schn.	Arupate	91 cm	22
	<i>Castanopsis hystrix</i> A.DC.	Katus	1.66 mt	25
	<i>Litsaea kingii</i> Hk.f.	Siltimur	1 mt	30
	<i>Castanopsis hystrix</i> A.DC.	Katus	2.76 mt	35
	<i>Cinnamomum impressinervium</i> Meissn.	Sissi	91 cm	20
	<i>Michelia lanuginosa</i> Wall.	Phusre chanp	95 cm	22
<b>Q<sub>11</sub></b>	<i>Castanopsis hystrix</i> A.DC.	Katus	1.20 mt	22

	<i>Quercus fenestrata</i> Roxb	Arkaula	91 cm	15
	<i>Quercus fenestrata</i> Roxb	Arkaula	91 cm	18
	<i>Michelia excelsa</i>	Rani chanp	2.30 mt	25
	<i>Castanopsis hystrix</i> A.DC	Katus	1.93 mt	25
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	95 cm	25
	<i>Quercus fenestrata</i> Roxb	Arkaula	91 cm	15
	<i>Quercus fenestrata</i> Roxb	Arkaula	91 cm	19
	<i>Castanopsis hystrix</i> A.DC	Katus	1.18 mt	30
	<i>Castanopsis hystrix</i> A.DC	Katus	2.30 mt	30
	<i>Quercus fenestrata</i> Roxb	Arkaula	91 cm	17
	<i>Castanopsis hystrix</i> A.DC	Katus	91cm	21
	<i>Machilus gamminieana</i> KING	Chipli kawla	91cm	18
	<i>Castanopsis hystrix</i> A.DC	Katus	2.35 mt	30
	<i>Nyssa javanica</i> Wangerin	Lekh chilaune	91 cm	25
	<i>Castanopsis hystrix</i> A.DC	Katus	91 cm	20
<b>Q<sub>12</sub></b>	<i>Castanopsis hystrix</i> A.DC	Katus	1.75 mt	25
	<i>Michelia excelsa</i> Blume	Rani chanp	1.57 mt	20
	<i>Castanopsis hystrix</i> A.DC	Katus	1.80 mt	27
	<i>Castanopsis hystrix</i> A.DC	Katus	1.24 mt	20
	<i>Castanopsis hystrix</i> A.DC	Katus	1.90 mt	30
	<i>Castanopsis hystrix</i> A.DC	Katus	2.32 mt	32
	<i>Castanopsis hystrix</i> A.DC	Katus	1.80 mt	30
	<i>Acer laevigatum</i> Wall	Putli	1.32 mt	25
	<i>Cinnamomum impressinervium</i>	Sissi	2 mt	35
<b>Q<sub>13</sub></b>	<i>Castanopsis hystrix</i> A.DC	Katus	1.73 mt	20
	<i>Beikschmiedia sikkimensis</i> King	Tarsing	1.80 mt	30
	<i>Bucklandia populnea</i> R.Br	Pipli	1.88 mt	27
	<i>Acer laevigatum</i> Wall	Putli	2.08 mt	38
<b>Q<sub>14</sub></b>	<i>Castanopsis hystrix</i> A.DC	Katus	1.83 mt	32
	<i>Castanopsis hystrix</i> A.DC	Katus	1.30 mt	30
	<i>Elaeocarpus varunua</i> Ham	Bhadrase	2.76 mt	32
	<i>Castanopsis hystrix</i> A.DC	Katus	1 mt	15
	<i>Castanopsis hystrix</i> A.DC	Katus	1.73 mt	20
	<i>Elaeocarpus varunua</i> Ham	Bhadrase	2.28 mt	35
	<i>Elaeocarpus varunua</i> Ham	Bhadrase	2.24 mt	35
	<i>Betula alnoides</i> Ham	Saur	91cm	20
	<i>Betula alnoides</i> Ham	Saur	91cm	20
	<i>Betula alnoides</i> Ham	Saur	1.40 mt	35
	<i>Betula alnoides</i> Ham	Saur	1.25 mt	35
<b>Q<sub>15</sub></b>	<i>Castanopsis hystrix</i> A.DC	Katus	2.92 mt	35

	<i>Michelia excelsa</i> Blume	Ranu chanp	1.25 mt	25
	<i>Beilschmiesia sikkimensis</i> King	Tarsing	1.68 mt	35
	<i>Castanopsis hystrix</i> A.DC	Katus	2.53 mt	40
	<i>Castanopsis hystrix</i> A.DC	Katus	2.76 mt	40
<b>Q16</b>				
	<i>Beilschmiesia sikkimensis</i> King	Tarsing	1.71 mt	42
	<i>Beilschmiesia sikkimensis</i> King	Tarsing	2.34 mt	45
	<i>Elaeocarpus varunua</i> Ham	Bhadrase	2.20 mt	46
	<i>Machilus gamminieana</i> KING	Chipli kawla	1.17 mt	15
	<i>Quercus lamellosa</i> Smith	Buk	1.04 mt	12
	<i>Quercus lamellosa</i> Smith	Buk	94 cm	13
	<i>Quercus lamellosa</i> Smith	Buk	1.13 mt	20
	<i>Quercus lamellosa</i> Smith	Buk	1.13 mt	21
	<i>Betula alnoides</i> Ham	Saur	1.82 cm	35
	<i>Quercus lamellosa</i> Smith	Buk	1.12 mt	18
	<i>Quercus lamellosa</i> Smith	Buk	1.12 mt	25
<b>Q17</b>				
	<i>Beilschmiesia sikkimensis</i> King	Tarsing	2.33 mt	45
	<i>Castanopsis hystrix</i> A.DC	Katus	1.46 mt	42
	<i>Acer laevigatum</i> Wall	Putli	1.31 mt	43
	<i>Castanopsis hystrix</i> A.DC	Katus	2.23 mt	43
	<i>Casearia glomerata</i> Roxb	Barkaunle	91 cm	15
	<i>Michelia excelsa</i> Blume	Ranu chanp	1.62 mt	45
	<i>Castanopsis hystrix</i> A.DC	Katus	1.93 mt	45
	<i>Castanopsis hystrix</i> A.DC	Katus	2 mt	45
	<i>Michelia excelsa</i> Blume	Ranu chanp	1.63 mt	40
	<i>Castanopsis hystrix</i> A.DC	Katus	2.30 mt	45

<b>FUNGI</b>	
Phylum	Scientific Name
Basidiomycota	<i>Amanita sp</i>
Basidiomycota	<i>Coprinus atramentarius</i>
Basidiomycota	<i>Crepidotus variabilis</i>
Basidiomycota	<i>Lycoperdon sp</i>
Basidiomycota	<i>Lycoperdon sp</i>
Basidiomycota	<i>Lycoperdon sp</i>
Basidiomycota	<i>Flammulina velטיפه</i>
Basidiomycota	<i>Marasmius sp</i>
Basidiomycota	<i>Marasmius sp</i>
Basidiomycota	<i>Marasmius sp</i>
Basidiomycota	<i>Oudesmansielliella mucida</i>
Basidiomycota	<i>Oudesmansielliella sp</i>

Basidiomycota	<i>Mycena sp</i>
Basidiomycota	<i>Hypholoma sp</i>
Basidiomycota	<i>Nematoloma fasciculare</i>
Basidiomycota	<i>Nematoloma sp</i>
Basidiomycota	<i>Clitocybe sp</i>
Basidiomycota	<i>Collybia sp</i>
Basidiomycota	<i>Pleurotus sp</i>
Basidiomycota	<i>Boletus sp</i>
Basidiomycota	<i>Boletus sp</i>
Basidiomycota	<i>Paxillus sp</i>
Basidiomycota	<i>Geastrum sp</i>
Basidiomycota	<i>Helvella sp</i>
Basidiomycota	<i>Phallus impudicus</i>
Basidiomycota	<i>Polyporus grammocephalus</i>
Basidiomycota	<i>Russula ochroleuca</i>
Basidiomycota	<i>Sparassis crispa</i>
Basidiomycota	<i>Trametes versicolor</i>
Basidiomycota	<i>Lacterius sp</i>
Basidiomycota	<i>Tremella sp</i>
	<i>Asterella sp</i>
	<i>Marchantia sp</i>
	<i>Plagiochasma sp</i>
	<i>Riccia sp</i>
	<i>Targionia sp</i>
	<i>Targionia sp</i>
	<i>Taxithelium sp</i>

<b>PLANTED ORCHID SPECIES AT PNHZ PARK</b>	
<b>SL NO.</b>	<b>NAME OF THE SPECIES</b>
1	<i>Aerides vandarum</i> Rehb.f.
2	<i>Aerides williamsii</i> Warn
3	<i>Agrostophyllum callosum</i> Rehb.f.
4	<i>Agrostophyllum myrianthum</i> King & Prantl
5	<i>Arachnis cathcartii</i> (Lindl)J.J. Sm.
6	<i>Arachnis clarkei</i> Rolfe, Gaud.
7	<i>Bulbophyllum affine</i>
8	<i>Bulbophyllum leopardinum</i> (Wall.) Lindl.
9	<i>Bulbophyllum reptans</i> Lindl.
10	<i>Coelogyne barbata</i> Griff.
11	<i>Coelogyne corymbosa</i> Lindl.

12	<i>Coelogyne flaccid</i> Lindl
13	<i>Coelogyne flavida</i> Wall & Hk.f.
14	<i>Coelogyne fuscescens</i> Lindl
15	<i>Coelogyne occultata</i> Hook.
16	<i>Coelogyne ovalis</i> Lindl.
17	<i>Crptochilus sanguinea</i>
18	<i>Coelogyen cristata</i> Lindl.
19	<i>Cryptochilus lutea</i> Lindl.
20	<i>Cymbidium devonianum</i> Paxter.
21	<i>Cymbidium mastersii</i> Griffith.
22	<i>Cymbidium elegans</i> Lindely.
23	<i>Cymbidium longifolium</i> Don.
24	<i>Dendroboium bicameratum</i> Lindely.
25	<i>Dendrobium chrysanthum</i>
26	<i>Dendrobium chrysotoxum</i>
27	<i>Dendrobium fimbriatum</i> var <i>oculatum</i> Lindl.& Hook.f.
28	<i>Dendrobium densiflorum</i> Lindl.
28	<i>Dendrobium lituiflorum</i> Lindl.
29	<i>Dendrobium hookerianum</i> Lindely.
30	<i>Dendrobium longicornu</i> Lindl.
31	<i>Dendrobium nobile</i>
32	<i>Ephemerantha macraei</i> (Lindl) P.F. Hunt & Summerh
33	<i>Epigenium fuscescens</i> (Griff.) Summerh.
34	<i>Epigenium rotundatum</i> Lindl.
35	<i>Eria coronaria</i> (Lindl.) Reichb.f.
36	<i>Eria excavate</i> Lindl.Ex.Hk.f.
37	<i>Eria clausa</i> King & Pantling.
39	<i>Eria paniculata</i> Lindely.
39	<i>Eria acervata</i> Lindl.
40	<i>Eria spicata</i> (D. Don) Handle- Mazz
41	<i>Liparis resupinata</i> Ridely.
42	<i>Liparis assamica</i> King & Pntl
43	<i>Liparis bootanensis</i> Griff.
44	<i>Ornithochilus fuscus</i> Wall ex. Lindl
45	<i>Otochilus fuscus</i> Lindl.
46	<i>Otochilus albus</i> Lindl
47	<i>Otochilus porrecta</i> Lindl.
48	<i>Pleione hookerianum</i> Lindl.
49	<i>Pleione humilis</i> Lindl.
50	<i>Pleione maculata</i> Lindl.
51	<i>Pleione praecox</i> (Sm) D.Don
52	<i>Podochilus khasianum</i> Hook.f.
53	<i>Renanthera imscootiana</i> Rolfe

54	<i>Thunia alba</i> (Lindl.) Reichb.f
55	<i>Trudeila cristata</i> Lindl.
56	<i>Vanda alpine</i> Lindl.
.57	<i>Vanda Coerulea</i> Griff.ex.Lindl
58	<i>Vanda stangeana</i> Rechb.f
59	<i>Sunipia intermedia</i> King & Pantling.
60	<i>Sunipia bicolor</i> Lindl.
61	<i>Trudelia cristata</i> Lindl.