MASTER PLAN Of
KANPUR ZOOLOGICAL PARK,
KANPUR, U.P.

2013-14 TO 2034-35

WRITTEN BY

MUKESH KUMAR IFS

DIRECTOR

KANPUR ZOOLOGICAL PARK

KANPUR, U.P.

UNDER GUIDANCE OF

RUPAK DE IFS

PRINCIPAL CHIEF CONSERVATOR OF FOREST

WILDLIFE

U.P.LUCKNOW

CERTIFICATE

This is to certify that the preparation of the Master plan was initiated by Mr. Kuruvilla Thomas, IFS, Chief Conservator / exDirector, Kanpur Zoological Park, Kanpur, U.P. and completed by Mr. Mukesh Kumar, IFS, Chief Conservator / Director, Kanpur Zoological Park, Kanpur, U.P. The master plan has been prepared for the period from 2013-14 to 2034 - 35.

Counter signed

(Mukesh Kumar)
Chief Conservator/Director
Kanpur Zoological Park
Kanpur, U.P.

(Vinod Ranjan)
Member Secretary
Central Zoo Authority of India,New Delhi

PREFACE

Kanpur Zoological Park was established and opened for the public on 4th February, 1974. The area of the zoological park is 76.56 ha. It is established in a manmade forest. The terrain of the park is undulating and resembles a high forest. It is one of those zoological parks which have given much importance to modern line of zoo building principles. The animals inhabited in the zoological park have been put in open and moated enclosures. The moated enclosures give the animal ample space for movement and help in expressing to their biological and physiological expressions. The enclosures are screened by terrain in such a way that one enclosure is not visible from the other. Thus the animals inhabiting the enclosures do not feel undue psychological pressure of the animals of adjoining enclosures.

Kanpur Zoological Park has been headed by the directors who themselves were very good wildlife lovers. Mr. R. S. Bhadauria, Mr. S. C. Sharma, Mr. G. C. Mishra, Mr. Mohd Ahsan, Mr. G. P. Sharma, Ms. Mamta Sharma, Mrs. Pratibha Singh, Mr. R. Hemant Kumar Mr. Praveen Rao and Mr. Kuruvilla Thomas, were among the illustrious directors of the Zoo. Thus the park was managed in such a way that every activity proposed in the zoo gave utmost consideration for wildlife conservation and animal welfare.

The natural settings of the zoo and the wild animal favorable inputs given by the managers helped in conservation of many endangered and exotic wild animal species in the park. Almost all the species of animals which were kept in the park have a very good breeding and survival history.

Central Zoo Authority was established in the early ‘90s for the scientific management of the zoological parks. The founder member secretary Mr. S.C. Sharma was the former Director of the Kanpur Zoological Park. The CZA laid various guidelines for the upkeep and management of the zoological parks. In continuation of the same it has issued guidelines for preparing a long term master plan for the zoological parks, which has to be submitted to CZA for its approval. Activities in the zoo have to be as per the approved master plan. Thus the zoological parks have a long term plan in developing a zoo.

Keeping the above guidelines regarding the preparation of master plan in view, Kanpur Zoological Park has prepared a master plan and sent to the Central Zoo Authority for its approval. The Master Plan after the scrutiny by a panel has sent back with certain observations, based on the observations of CZA. It has been revived according to panel’s guide lines and prepared for the period 2013 -14 to 2033-34.

In this regard I thank to Mr. Rupek De,IFS, Prinicipal Chief Conservator of Forests Wildlife / Chief wildlife warden U.P. for his encouragement, technical inputs and valuable advice. I thank to Mr.J.S, Asthana, IFS, Principal Chief Conservator of Forests, U.P. Lucknow for the support he extended in completing the master plan. I thank to Mr. B.S. Bonal, IFS, Member Secretary, Central Zoo Authority of India, New

Delhi for providing valuable inputs and financial assistance in preparing the master plan. I thank to the expert group for Master planning, especially Mr. V. K. Patnaik, IFS(Retd.), for scrutinizing the master plan in depth and giving timely advice for the completion of the plan. I thank to Mr. Kuruvilla Thomas, IFS, former Director, Kanpur Zoological Park, who has initiated the preparation of this Master Plan, for the detailed discussion while preparing the plan, which helped me in bringing out this document. I thank to Dr. R.K. Singh, Veterinary Officer, Mr. Y.P. Shukla, ACF, Mr. Kewal Prasad ACF, Mr. Vishwajeet Singh, Junior Clerk in Director's Office and all other officers and staff for their support in completing this plan. I sincerely thank to one and all, who have helped me in writing this plan.

With regards

Mukesh Kumar, IFS
Chief Conservator/Director,
Kanpur Zoological Park,
Kanpur, U.P.

FORE WORD

Wildlife management has two components. The in-situ conservation of wild animals and exsitu conservation of wild animals.In the insitu conservation of wild animals the wild animal species is conserved in the very area to which it belongs. In ex-situ conservation the wild animal species is conserved in an area which is other than its natural habitat. Thus the zoo management is part of ex-situ conservation effort of wild animals. Thus the ex-situ conservation of wild animals i.e., zoo management is equally important as compared to insitu conservation. The ex-situ is more challenging as compared to in-situ management given the fact that the animal has to be provided all the requirements of an insitu area.

Preparation of a long term master plan is important for a planned development of the zoo, otherwise the zoos will lose their importance as conservation centres and awareness centres. The mushrooming of unplanned zoos will adversely affect the conservation efforts. In this direction Central Zoo Authority is trying to get the master plans of the zoos prepared by the competent authority/ zoo operators for a period 20/10 years with a provision for its revision. Expert groups have been formed by the CZA who are scrutinising the master plans prepared by zoo managers and helping in finalising the master plans.

Kanpur zoological park is spread in an area of 76.56 Ha and is most suitable for the exsitu conservation of wild animals.The area of the zoo and the landscaping of the zoo provides ample space and area for animal enclosures and gives the feel of a forest to the animals. The visitors also enjoy the sylvan sorroundings and develop empathy for the wild animals.

The present Master plan has been prepared for a period from 2013-14 to 2033-34. The zoo animals have been classified and grouped on broad taxonomical basis in to Mammals (carnivores,Herbivores, Primates), reptiles, aves, exotic animals etc., Proper enclosures have been provided and modifications proposed according to recent CZA guidelines.Present constraints in the zoo management and proposal for addressing them have been incorporated.

The staff requirement at present and for the future development has been considered and provided accordingly. The awareness efforts and Research imputs for the zoo are given proper place in the document.

Hope this master plan provides for the better future of the zoo and helps in conservation of endangered wild animals, throw some light on the research in regard to various aspects relating to wild animals and serve the purpose of educating the masses and inculcate empathy for wild animals in the visitors.

I wish the zoo administration good luck in their efforts.

(Rupak De)
Prinicipal Chief Conservator of Forests(Wildlife)
& Chief Wildlife Warden, U.P. Lucknow, U.P.

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Part I

Summary of Facts

Chapter – I

Introduction

1.1. History of the Zoo

Kanpur Zoological Park is situated on the fringes of industrial city of Kanpur. The park is spread in an area of 76.56 hectare. It is a part of lush green Allen-forest. The construction of the park started in the year 1971 and has been developed on the modern management principles. It was opened for public on 4th February 1974. In the last three decades, the zoological park has played an important role in the care of wildlife and creating awareness among public regarding wildlife conservation.

Allen forest was developed during the British rule between the years 1913-1918 by Mr. George Burney Allen, a famous British industrialist of Kanpur. The forest has been developed on the banks of the river Ganges. This was a resting place of Mr. Allen. He constructed a rest house called lake view on the banks of a lake. The lake had continuous water supply from Ramganga canal. During rains the water use to overflow from the lake and fall in to Ganges. Due to this, big fishes and tortoises used to escape in to the river Ganges. To keep a check on this, a bund was built with sluice gates. During the British rule this area was situated 5 K.M. away from the city and was a hunting place for English-Businessman. Due to the efforts of Mr. George Burney Allen and the then Governor, the land was taken into Government possession. A lake, spread in an area of 18 hectares, is a center of attraction since the beginning, as many fishes were in the lake and water birds use to visit the area regularly. Some of the areas of Allen forest were sold to the Singhanias, who too are famous industrialists of the city. Singhanias have developed a retreat on this land by the name Kamla Retreat. Kamla Retreat adjoining the Kanpur Zoological Park too has ample greenery. Certain areas of the Allen Forest were transferred to Transport Corporation. The continuously increasing population was a threat to the Allen Forest as there were chances of destruction of this forest due to the increasing biotic interference. Because of the far sightedness of the state Government and the forest department, a portion of the forest area has been converted into a modern zoological park.

Construction of the zoological park started in the year 1971 and by the year 1975-1976 first 10 enclosures were built. Mr. R. S. Bhadauria was appointed as the first Director of Kanpur zoological park, in the year 1971. It was a great challenge for him to convert this area in to a zoo because at that time the entire forest area was known for the criminal activities. Many times the people who were involved in illegal fishing were punished. This also led sometimes to bloody struggle with the people who indulged in illegal fishing in the zoo's lake. Three enclosures were constructed in the first phase of the development of the zoological park. Otter, caught by

fisherman from the river Chambal and gifted to the Director by one of his relatives from Etawah, was the first animal of the zoo.

The construction of the zoological park, which started in April 1971, continued uninterrupted and by the end of 1973 about half of the planned construction was completed. Many animals were brought in and the number of visitors also increased. Official inaugural of the zoo was organized by Mr. N.D. Bachkheti, the then Conservator of Forests, Southern Circle, Allahabad, under whose official control and direction the zoological park was constructed. According to Mr. Bachkheti, the zoological park was the children's favorite entertainer. Hence the zoo was inaugurated by a child on the 4th of February, 1974 in a very simple ceremony at the Zoo.

The enclosures are designed according to the modern management principles. Every enclosure had ample greenery and effort was made to provide natural habitat ambiance in every enclosure so that the animals could feel at home. Feeding houses were constructed with squeeze cages in the houses of the tiger, lion, leopard and other similar species. This arrangement was very helpful for the treatment when they were sick. Moats have been so designed in the tiger's enclosure that there is water in it and the tiger can be seen enjoying and playing in the water. Later many more enclosures were added to accommodate other animals and birds and other development works continued according to the availability of the budget of the State Government and Central Zoo Authority (CZA).

The enclosures for animals and birds were designed on the latest trends in the field of zoo building and is well spread along the lake on either side of a semicircular arterial road of about 9 km. length. Design has been done in such a manner that the natural look of the forest was not disturbed and the natural topography and floral richness of Allen Forest was fully utilized.

Though so many enclosures, buildings and roads are constructed in the zoo premises, still there is vast undisturbed area, which gives it a look of dense forest. A variety of free roaming animals are thriving in the zoo premises. They consist of Crocodiles, Spotted deer, Rhesus monkeys Hanuman Langurs, many varieties of Civets, Hares, Porcupines, Squirrels, Bats, Mongoose, Lizards, Snakes, Pythons, Common pea fowls, Partridges, Parakeets, Owls and many other varieties of birds.

1.2 Theme of Display

The basic theme of display of the animals in the zoological park is in the following pattern.

i. Broad taxonomical display of wild animal species of National importance with emphasis on fauna of Gangetic plains.
ii. Off Display life time care facility for 20 Monkeys and Leopards

iii. Conservation breeding of Thamin deer, Swamp deer, Rhinoceros.

1.3 Mission Statement

Conserve wildlife, impart knowledge on wildlife and inspire visitors to protect Forests and Wildlife.

1.4 Vision

Kanpur Zoo Park has the following vision to be achieved in a period of next 20 years.

- Conservation of fauna of Indo-Gangetic plains
- Providing an alternate home for the species of national importance.
- Conservation breeding of rare and endangered species of the region.
- Creating opportunities for education and awareness amongst the masses
- To carry out research on Animal Biology and Ecology
- Strengthen linkages between ex-situ and in-situ conservation
- Modify all the enclosures to suite CZA guidelines and provide maximum ambience of occupant's habitat.
- To give best facilities for the visitors

1.5 Theme

As mentioned earlier in the objectives, the Zoological Park is mainly concentrating on conserving the endangered animal species of the Indo-Gangetic plains; efforts are made to provide naturalistic conditions to them as far as possible.

Making use of the vast area available with the Zoo, measures are taken to provide big enclosures for the animals and to create a good sylvan environment within the Zoo.

1.6 Plan Objectives

Kanpur Zoological Park was started with the primary objective of conservation of endangered animals of Gangetic plains and the efforts are still on, to carry out this mission for which the following objectives have been focused upon. The main management objectives of Kanpur Zoo Park are CARE an acronym for Care, Awareness, Research, and Education

Captive breeding of the endangered animal species of the Indo-Gangetic plains, with an aim to make the animal fit for reintroduction/ restocking in their natural habitat is another major objective of the plan. Initiating basic and applied research and providing proper veterinary facilities. Education, motivation and rising

awareness among the local people, students and visitors about the importance of conserving wildlife is major objective of this plan.

1.7 Location

The Kanpur zoological park is located on the North West part of the Kanpur city. HBTI campus is situated on the southeast side of the zoo, Kamala Retreat is on the south west of the zoo and on the west side of the zoo is the Uttar Pradesh State Transport Corporation work shop. The Ganges flows at a distance on the north east side of the zoological park.

Kanpur Zoological Park is located in Azad Nagar of Nawab Ganj Area.

1.8 Approach and access

The industrial town Kanpur is one of the largest and thickly populated cities of Uttar Pradesh. There are a large number of industrial units in Kanpur, doing brisk business in the fields of chemicals, textiles, leather, plastics and its products. The city is visited by a number of foreign buyers. The city is well connected by rail, road and air to various places in U.P. and India.

Kanpur Zoo is the major attraction for the people of Kanpur city, as the Zoo provides green environs in one of the most polluted cities of U.P. The Zoo is acting as a green lung for the people of the city. The Zoo with its rich collection, proper display of animals, lawns, green environs attracts around 600,000 guests every year. There is a lot of potential for the Zoo to attract more visitors.

The Kanpur zoological park is connected by road to all the important places of Kanpur. The place is well connected by city buses, tempos and cycle rickshaws with all parts of Kanpur. The distance from the main places is given below

1. Central Railway Station - 9 Km.
2. Parade - 6 Kim.
3. Bada Chauraha - 7 Km.
4. Chunniganj Bus Stand - 4 Km.
5. Rawatpur Railway Station- 4 K.m.
6. Jhakarkati (Main) Bus Stand- 9 K.m.

The Zoo is closed every Monday for visitors, as rest is necessary for all the zoo inmates.

1.9 Topography

Kanpur is a part of Ganga – Yamuna Doab of Upper Gangetic plains. The topography is undulating with highlands known as Bangar and are named as Varanasi old flood plains and low lands that indicate the flood plains. The altitude of

the area varies between 98mts to 138 mts above mean sea level. The areas called Khadar are situated at 98mts to 129mts above mean sea level and are spread to about 1 to 3 Kms from the rivers

1.10 Geology, Rock and Soil

Geologically the area belongs to Bundelkhand granite group and Vindhya sub group of shail group. The soil is based on the rocks of the above with the reminiscent of the crust of the flood plains.

The area has the minor forest produce such as Grit, salt petre the raw material for Potassium nitrate and reh.

1.11 Climate and Seasons

The climate is similar to the sub tropical climate of indo- gangetic plains. During winter season the weather is cool and dry and the summer is very hot. During summers the hot winds called 'loo' along with dusty storms are a common feature. The monsoon starts in July and ends in September or early October. During monsoon period the weather is hot and humid**.**

Various seasons according to Hindu calendar are as follows

- Sharad –September to October, The weather is pleasant and the temperature is comfortable. End of the rainy season.
- Shishir – November to December, Starting of winter season and dormancy in the plants
- Hemanth/Sheeth – January to February, The weather conditions are colder and frost is common.
- Basant – March to April, The weather conditions are again comfortable. The new leaves start coming on the deciduous trees.
- Greeshm – May to June, The temperatures are very high, hot winds and dust storms are common.
- Varsha – July to August, The highest precipitation, the weather is hot and humid, and gives much scope for afforestation.

1.12 Temperature & Rainfall

During summer months the city temperature reaches up to 40-42 degrees centigrade, where as in the Zoo the temperature is generally 2 - 3 degree centigrade less than the city temperature. In winter the temperature goes down up to 4-6 degree centigrade. Kanpur receives moderate rainfall. Most of the rain fall is during July to September. The rain fall in the month of July is in the range of 125mm

to 320mm mostly, with an exception of the year 2008 which received a rainfall of 465mm during the month of July. Frost is more frequent from December to early February.

The temperature and Rain fall figures that were collected in the meteorology station of Chandra Shekhar Azad Agricultural University have been given as **annexure I**

1.13 Flora

The floral richness of the zoological park is enormous. A diverse variety of trees, shrubs, herbs & grasses are present in the zoo park. Some of the tree species are naturally occurring in the area whereas some others were planted as early as the second decade of the nineteenth century. All these trees give a look of natural forest to the landscape. Some more trees of ornamental & flowering nature have been added in the recent years. Likewise the naturally growing, shrubs and planted ones grow side by side. A number of hedge plants have been added in the last 10 to 15 years. Bamboos were planted along the wire-mesh in many enclosures. At many places Bamboos form dense thickets and add to the greenery of the area. A number of grasses, both coarse and palatable also exist and add to the floral diversity of the park. Many neem trees exist in the forest from the beginning and the efforts are on to increase the numbers but have not yielded good results owing to monkey menace in the park. On the other hand *Prosopis juliflora* is spreading very fast and encroaching the landscape of the zoological park. The *P. juliflora* in the park is straight boled and takes the shape of a tree. Sometimes it appears like a weed but in the winters this helps in keeping the fireplaces for the herbivores.

Main Tree Species

Chilbil (*Holoptelia integrifolia*), Kaitha (*Feronia elephantum*), Neem (*Azadirachta indica*), Vilayti Babul (*Prosopis juliflora*) are found almost everywhere. Prosopis is growing like noxious weed at many places; Jamun (*Syzygium cumini*) and Kanji (*Pongamia pinnata*) grow profusely along the shoreline of the lake and in depressions. By and large these are the main tree species found the zoo park. The list of other Trees, shrubs and herbs are given in **Annexure II**

1.14 Fauna

The zoological park as such looks like a natural forest with undulating terrain, with a big lake inside the park. Thus it attracts many birds and smaller mammals. Apart from this, certain animals which have escaped from the enclosures and are free ranging animals add to the beauty of the zoological park. The Zoo has

free ranging animals like Chitals, Peacocks, Mongoose, Rhesus monkeys, Hanuman Langurs, many common civets, hares, porcupines, squirrels, bats, lizards, snakes, pythons, crocodiles, common pea fowls, partridges, parakeets owls, crow pheasant and a variety of local and migratory birds etc. The list of fauna has been annexed as **Annexure III**.

The inventory list of animals of the Zoo is annexed as **Annexure LV**

1.15 Main attractions in the Zoo

The main attractions in the Zoo are

- The pleasant and green environs for the highly polluted industrial city.
- Easily approachable from the main city and important places in the city by affordable means of transport.
- A vast lake (about 18 hectares) that attracts a large number of resident and migratory birds, which nests and breeds giving impetus for *in situ* conservation of resident and migratory birds.
- Cheap entrance tickets, with very good visitor amenities like lawns, kiosks, benches, shades, toilets etc.
- Animals are nicely exhibited and are placed in forest like environs giving the visitor the feel of rich forest.
- The visit to the Zoo is educative not only for the children but also for the adults.
- Exhibits on Dinosaurs fascinate children very much and other major attractions for them are Aquarium, White Peacock, Tiger, Leopards, Chimpanzee, Orangutan etc

1.16 Sources of pollution

The zoological park has a lake spread in an area of 18 Ha. Earlier a feeder canal from the Ram Ganga Canal use to fill the water body in Kamla Retreat and the excess water use to flow into the lake. But during the course of time the city swelled and the feeder canal lost its existence and thus the water supply to the lake dwindled.

A small drainage inlet from the Nagar Nigam was also flowing in to the park. This was a main source of pollution. But due to the efforts of previous directors a lifting system was established by Kanpur Development Authority and is maintained by Jal Sansthan, Kanpur. The lift system is constructed adjoining the boundary wall of the zoo park and inside the Forest campus of Social Forestry Division, Kanpur. The maintenance expenditure of the lift system is borne by KDA. The funding for the

lifting pump is not released in time causing difficulty for the maintaining department in pumping the sewage out in time. This sewage water is entering the zoo premises and polluting the lake. During rainy season, when the flow of water is more and the sewage lifting system fails, the water enters the lake in large quantity. Zoo management has taken up this issue with the Nagar Nigam authorities and the Government. Nagar Nigam has posted additional staff and has installed a generator to ensure 24 hour pumping of sewage water. Because of this no dirty water is entering the zoo from 25, September, 2013. But during raining days, rain water enters the zoo. Efforts are being made to find a permanent solution by intercepting the drain upstream and divert it to the nearby sewer line by constructing a canal.

1.17 Zoo visitation

The visitor flow is increasing on a yearly basis. School children are the main visitors to the zoo. Zoo visit is part of the curriculum in the school syllabus. People from all strata also visit the zoo because zoo visit forms a cheapest mode of entertainment and they feel relaxed and enjoy the pristine sylvan environs of the zoo. The school students are given concession in the entry fee. Presently Rs 10.00 per student is charged. The students are allowed free entry into the zoo during the first week of October, when Wildlife Week is celebrated. During this week more than 10,000 students utilize this facility. The information on the zoo visitation is given in Table-1

Table – 1 Zoo visitation from year 2001-02

S. No	Year	Number of Visitors visited the Zoo (Nos)	Revenue received (in Rs)
3	2001-02	3,49,089	34,68,704-00
4	2002-03	3,56,842	37,77,672-00
5	2003-04	3,70,771	42,77,677-00
6	2004-05	4,13,043	48,69,504-00
7	2005-06	4,37,386	50,96,956-00
8	2006-07	4,57,129	53,44,473-00
9	2007-08	4,59,654	55,00,360-00
10	2008-09	4,37,642	60,17,460-00
11	2009-10	4,65,928	79,64,085-00
12	2010-11	5,30,334	90,09,828-00
13	2011-12	5,27,976	97,37,962-00
14	2012-13	4,78,145	1,23,48,800-00
15	2013-14	5,19,533	1,38,03,906-00

1.18 Directors of the Zoo

Mr. R.S. Bhadauria was the first Director of the Zoo and under his supervision; the construction of the zoo was started and took the shape of a zoological park. He was succeeded by Mr. S.C. Sharma as Director, Kanpur Zoo. In the due course of time Mr. Sharma became founder Member secretary of the Central Zoo Authority of India. The later Zoo directors too are strong wildlife lovers. Most of the Directors had tenure of more than three years. Thus the directors had ample opportunity for planning and implementing their ideas of ex-situ management. Names of Directors who headed the Zoo since its inception are given in Table -2.

Table -2 Directors who headed the Zoo since its inception

S. No	Name of the Director	From	To
1	R.S.BHADAURIA	April 1971	Dec 1977
2	S.C.SCHARMA	Dec 1977	June1983
3	G.P.PANDEY	June1983	Aug1983
4	G.C.MISHRA	Aug 1983	Feb 1986
5	Md. ASHAN	March 1986	April 1991
6	B.S.RAO	MAY 1991	MAY 1991
7	G.P.SHARMA	May 1991	June 1993
8	A.K.DUTT	June 1993	July 1996
9	MAMATA SHARMA	Aug 1996	Aug 2000
10	RAKESH SHAH	Aug 2000	Dec 2000
11	PRATIBHA SINGH	Dec 2000	Feb 2004
12	K.P.DUBEY	Feb 2004	Dec 2004
13	KURUVILLA THOMAS	Dec 2004	Jan 2005
14	AVANI KUMAR	Jan 2005	Mar2005
15	HEMANTH KUMAR	Mar 2005	July 2008
16	K.PRAVEEN RAO	July 2008	Jan 2013
17	KURUVILLA THOMAS	Jan 2013	Till Now

Chapter – II

Present Arrangement And Constraints

2.1 General Zoo Administration

Director forms the pivot of zoo administration and almost all decisions have to be taken by him. Every activity of the management of zoo moves around the Director of the zoological park. The Director is assisted by Assistant Conservator of Forests, Veterinary Doctors, Range Officers, field and office staff in the day to day mangement of the zoo and carrying out developmental activities.

2.2 Administration Section

The administration section is divided into Office administration and Field administration sections.The office administration section looks after the ministerial activities of the zoological park and the field administration looks after the various field activities.

2.2.1 Office administration section

Office administrative section is housed in the administrative building and is headed by the Head Clerk. The Section has been further divided into three sub sections namely Account Section, Establishment section and drawing and designing section.The accounts section has one Accountant and one Junior clerk, the basic function of the accounts section is to ensure timely preparation of budget proposals, and tendering process, giving the financial sanctions, expenditure control ensuring the financial disicipline, preparation of monthly and yearly accounts and other miscellaneous activities related to budget and accounts.

The Establishment Section has two senior clerks to look after the establishment and general correspondences. This section deals with the service matters of the staff like pay and wages, maintenance of sevice records, maintenance of Provident fund accounts, timely disbursment of service benefits, etc.

Drawing and designing section has a draftsman. It is his duty is to design environment friendly and animal appropriate designs for the enclosures of the animals and prepare the finanacial estimates. One office Peon and two orderlies are also attached to the Administration Section.

A separate record room has also been attached with the administration section for keeping all the earlier records, registers and files.

Because of the faster changing technology and the concepts in the management of wild animals and the construction designs, the present setup of draftman designing the enclosures is inadeqate. Hence services of the experts in various fields, as consultants, are needed for appropriate management decisions.

The office is equiped with modern office gadgets such as photocopier, fax machine, scanner printer etc. for the efficient functioning of the office. More equipment as per requirement will be purchased. The office building is in a very dilapidated condition with old broken furnitures. The seating arrangement of the clerical staff and the placement of the records in the the rooms have to be changed to improve working environment of the office. Budgetry provision for modernising the zoo is provided in the year 2013-14.

2.2.2 Field administration section

The field administration section takes care of the planning and implementation and maintenance of the field activities.The main field activities include care of the animals, proper feed for the animals, hygiene of the zoo premises and the enclosures,visitor circulation, visitor amenities,repairs and construction of the enclosures and public amenities, gardening and green cover,proper water supply, power supply , solid and liquid waste management etc.,

Curator- Responsibility of monitoring of every petty matter was falling on the shoulders of the Director.The Director did not have much time for planning, liasioning with higher offices, arranging funding for implementing the projects.To keep the Director availble for planning process, and to take care of the day to day matters of the park a full time curator in the rank of Assistant Conservator of Forest is posted presently in the zoo.

The field administration section is further subdivided in to two ranges for the administrative convenience 1) Range officer, Administration 2) Range officer, Protection.The two officers have been entrusted with clear duties and responsibilities and their jurisdictions are well defined through office circulars so that there will not be any overlapping of the duties and responsibilities. For the administrative convinience the entire zoo is divided into six sectors and a forestor or Forest guard is put in charge of each sector. These sector officers report to respective Range Officers and work under their orders. Thus chain of command is well established for the smooth functioning of the zoo and for the efficient implementation of the development activities.

For administrative convenience the zoo has been divided in to

1. Animal section
2. Veterinary section
3. Commissary section
4. Sanitation section

5. Garden section
6. Estate section
7. Power supply section
8. Water supply section

2.3 Animal Section

The animal section forms the most important section of the administrative setup as the entire management of the zoo depends on the efficient functioning of this section. As the Zoo is situated in a relatively large area of about 76 hectares, space is not a constraint for housing the animals. So care is taken for providing space lavishly to the animals for their free movement. Presently there are 55 enclosures in the Zoo , out of which 5 enclosures are empty. 42 enclosures are open air enclosures and are mainly inhabited by Tigers, Lions, Himalayan Black bear, Herbivores etc. The Zoo has four closed enclosures for leopards. Water birds are kept in a big closed enclosure, for the Pheasants there are 3 pheasantries with 21 pens. Nocturnal animal house is a closed enclosure which has Civets, Porcupines and Owls in different cells. The zoo has a beautiful enclosure for Otter. Otter is a native of the Indo-Gangetic plains and was kept in water pond especially made in very close lines of that of their actual habitat and requirements**.** The enclosure is empty at present. Kanpur Zoo Park has built in tailed squeeze cages in the night cells of carnivores like Tigers, Leopards, Lions, and Bears etc for providing medical treatment whenever it is necessary, without putting the animals to undue stress by chemically capturing and transporting them to the Zoo hospital.

The construction of the night cells was taken up during early seventies.Presently almost all the enclosures need upkeep.The doors and shutters have become old and worn out and need a repair or change. Re-plastering of the walls is required.

Proper greening and screening of the enclosures and the barriers with climbers and hedges is necessary to provide sylvan surroundings.

The animals in the zoo have been placed broadly according to the taxonomical classification of animals. The main zonation of the zoo is as follows

1. Monkey section
2. Aviary section
3. Omnivore section
4. Carnivore section
5. Herbivore section
6. Nocturnal animal house
7. Aquarium
8. Exotic animals section

But some enclosures got mixed up e.g., many birds are kept in primate enclosure. This is to be properly shifted to aviary section Sloth bear is kept besides Tiger. New enclosure has to be constructed near to the present Himalayan Black Bear Enclosure. Thus there is a mixing of the enclosure..

Presently the otter enclosure is empty. Otter has high conservation value and this animal is very much liked by the visitors particularly Children. So the enclosure has to be renovated and Otter should be displayed. The space available for the primates in the “Kapi Grih” is small hence enough space is to be provided by expanding the size of the enclosure and modifying it according to the needs of the animals.

In the aviary section enclosures are available for the water birds, flying birds and pheasants, but all the enclsoures are very small compared to the size specifications given by Central Zoo Authority.Hence expansion of the dimensions of the water bird enclosure is necessary so that the birds can express their biological behaviour and breeding is possible in water bird enclousure. A big walk in aviary for water birds and other birds is proposed to be constructed to make this a unique place for conservation and breeding as well as a education centre for the bird ecology. Similarly the height and the dimensions of the aviary is small, which makes it unfit for the flying birds. Hence the height of the aviary and the dimensions have to be increased to make it fit for the flying birds.For flying birds the height prescribed by the central zoo authority is 6 mts. The present aviary will be modified by joining 2 enclosures and extending the length by 3 meters with glass window for better viewing of birds.The requirement of pheasants is slightly different, the height required is 3 mts but the depth requirement is more. So a separate pheasantary with eight pens should be constructed for proper up keep of pheasants. The white peacock enclosure is very much on the road side.Thus the visitors start disturbing them.Hence the white peacock enclosure has to be dismantled from the current location and a sufficinetly large enclosure has to be provided.The pellicans of the first enclosure has been shifted to the duck pond infront of the dinosaur park. For awareness and conservation purpose a separate enclosure of sufficient size has to be created for the birds of prey.The place suitable for them is by the side of the dianosaurus enclosure, opposite to Himalayan black bear enclosure.Proper screening of all the enclosures with greenery should be ensured.

The next section is a carnivore section in which the Sloth bear and Rhino enclosures are placed near to the tiger enclosure.Thus to classify them properly the carnivore section has to be separated and new omnivore section has to be created to make the distribution according to taxonomic classification.The present Himalayan Black bear enclosure should be kept as such and the sloth bear enclosure from the present location has to be shifted to the present canteen No.1, near to the Himalayan Black bear enclosure.The present sloth bear enclosure and the Rhino enclosure can be utilised for constuction of enclosures for Asiatic Lions and

Leopards thus putting all the carnivores in the carnivore section. The leopard enclosure II is to be retained and modified for the small cats to make comparative study.

In herbivore section one new enclosure of sufficient dimensions for the rhino is required for pairing the animals. The zoo is a participating zoo for indian rhino.Thus for breeding the animals sufficient space for the nuptial act is required. Hence a new enclosure is to be constructed on the side of the nullah, opposite to the present enclosure which resembles the habitat of the rhino.

The sambar enclosure is denuded and gives a barren look to the enclosure. The enclosure has to be expanded and the animals are to be shifted by rotation to develop sufficient greenery inside.

In herbivore section bison enclosure is lacking.Bison is an animal of tropics.Hence conservation of this animals in the zoo is essential, for which an enclosure of sufficient size is needed.

The nocturnal animal house is in the form of a cave.The ventilation in the house is by means of six exhaust fans fitted in the enclosure.Three fans operate in the day hours and three fans in the night.The power supply in kanpur is erratic thus the circulation of air in the enclosure is not properly maintained.The animals in nocturnal animal house has hardly bred.Thus the breeding history of the nocturnal animal house is nil and the house acts as a death knell for the animals. Successful breeding was reported among porcupine only after providing proper ventilation through a window in the wall. So proper expansion of the enclosure is needed to allow the inmates of the house proper ventilation and the animals should be rotated in such a way to express their biological behaviour.Presently porcupines are kept in the nocturnal animal house.The floor is a cemented floor and does not suit the nature of the animal.Hence soil substrate is to be given to the animals with mounds developed so that the burrowing nature of the animal is retained.

Aquarium of the zoo is very beautiful. It is in an architectural building constructed in the shape of tortoise.Inside the tortoise the aquariums are plalced in two floors.Each floor has 18 aquariums.But the size of the aquariums is very small.The fishes in it get very small space to move. Aquariums of sufficiently big size are required to allow proper space for the fishes.In doing so some aquariums may have to be reduced.

In exotic animal section many animals such as oragutan, chimpazee have to be paired. The animals like giraffe has to be acquired from other zoos.This gives an opportunity for the visitors to study various animals across the globe.The visitor circulation road leading to the lion enclosure passes behind the house of the animals and the kraal of the zebra enclosure. This can be avoided by closing the road at zebra corner and immediately after the lion house.The closed road can be utilised as service gallery rather than visitor circulation road.The visitors can be allowed from

the road between zebra moat and zebra lawn leading toward toilets and then take left to reach the lion enclosure and return back on the same route.

Each animal house is provided with adequate drainage facility in Kanpur Zoo and the liquid wastes are drained out of the enclosures and disposed off without contaminating the enclosures. All the enclosures need soak pits for disposing off the liquid wastes from these enclosures. The excreta of Hippopotamus are released in water itself. Hence these enclosures are cleaned every week. The semisolid wastes are released in to the lake. This has all the possibilities of contaminating the lake. Hence a proper sewage disposal system for the Hippo enclosure has to be designed. The feed waste from all the herbivore enclosures is dumped in to pits little away from the enclosures, and is burnt at regular intervals. But disposing at a far off distance from the enclosure is necessary. Hence a garbage disposal van is required to be purchased. Bio-degradable material is proposed to be disposed of by composting.

The Zoo has bio-gas plant which is to be repaired and the solid wastes of the animals especially that of Rhinos be fed in to it, so that on one hand the zoo can produce bio-gas and on the other hand risk to the staff and animals be reduced. Goggles should be provided to the persons who clean the solid wastes of Rhinos.

Table- 3 List of animal enclosures.

Animal Section	**Species**	**Number of Enclosures**		**Number of night cells**
		Open	**Closed**	
Mammal	Tiger	1	-	5+1 squeezer
	H. Baboon	1		5
	Leopard Common		4	10+3 squeezers
	Gibbon and Langoor	1		10
	Bonnet Monkey	1		5
	H. Black bear	1		6+1squeezer
	Sloth Bear	1		5
	Rhino	1		2
	Herbivores	12		12 kraals
	Striped hyena	1		3
	Jackal	3		5
	Nocturnal House		1	6
	African Lion	1		7+ squeezer
	Hippopotamus	2		2
	Wolf/ Hyaena	1		5+ squeezer
	Chimpanzee &	2		5

Animal Section	Species	Number of Enclosures		Number of night cells
	Orangutan			
Birds		2	3	21
	Emu	2		4
Reptiles	Crocodiles and Muggar	3		

Presently the animal section is under the overall control of the Director and is assisted by Curator, veterinary Doctor and Range officer. This unit has the following staff- :

- Head Keeper –1
- Animal Keepers – 11

All the Zoo keepers have been trained in the Animal Management. The whole section report to the duty on all 7 days of the week at 8.00 AM in the morning. The timings of the Zoo keepers change with season.The Zoo Keepers receive daily diet for the animals on proper challan and feed the animals in the pre decided way. This is done in order to work efficiently and also for safety.

The Head keeper makes a round of the entire Zoological Park in the morning and looks into and takes daily reports prepared by the animal keepers.The animal keeper records the general behavior of the animal, the feeding and mating record.He also records any emergency repair works to be under taken for the proper safety of the animal and the visitors.The head keeper then puts his observation and submits it to the veterinary Doctor, who in turn forwards the daily reports after noting down his observations to the Director through Range officer and Assistant Conservator of Forests. A register is kept to record the recommendations of the field staff and the doctor. Adminsitrative decisions taken on the observations of the keepers and the doctor are conveyed to the field administration units at once for compliance.Weekly monitoring on compliance of the decision taken is done to ensure that animal saftey and welfare .

Over the years due to scientific management of the park and natural ambience in the zoo, the animals have bred very well and many species have gradually crossed the carrying capcity of the enclosures. CZA has prescribed size norms of enclosures for keeping animals.It also has prescribed maximum no of prolifically breeding animals such as Blackbucks, Spotted deer and Sambar etc., to be displayed. The prescribed number of herbivores is 15 to 20 animals per enclosure. Due to prolific breeding, number of animals in an enclosure has crossed the limits prescribed leading to infighting among the animals and increased mortality rate.Thus population control in essential in some species of animals.

For the pheasants a separate aviary is present. But during last four years the breeding of Ringnecked pheasant, Cocktiel was overwhelming and this lead to over

crowding of the enclosures.The birds are pugnacious in nature which leads to infighting and increase in mortality rate. Thus in many animals population control measures and exchange programmes are essential to control the population and provide better living conditions. It is proposed to construct a separate pheasantry for the exclusive display of pheasants.

Kanpur Zoo has only three species of reptiles. Two species of Crocodiles and one species of turtles. Thus the reptile world is not properly represented in the animal collection plan.Hence a reptile house has to be constructed for proper education.

2.3.1 Animal Collection Plan

Presently the Kanpur Zoolgical park has animals representing Mammals, Aves, reptiles. These animals have been properly placed broadly as carnivores, herbivores, primates, aves, exotic animals etc., The proposed collection plan based on inventory report of March,2013.

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
	Endangered species - schedule I & II		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
BIRDS																						
1	Peafowl white	*Pavo cristatus*	1	1	6	8	0	0	2	0	0	0	0	0	0	0	0	0	1	1	8	10
2	Peafowl	*Pavo cristatus*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
3	Kaleej Pheasant	*Lophura leucomelanos*	2	0	1	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1
4	King Vulture	*Sarcogyps calvus*	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5	Tawny eagle	*Aquila rapax*	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			5	**2**	**8**	**14**	0	0	2	0	0	0	0	0	0	3	0	0	2	2	10	14

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																							
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
	Endangered species (schedule I & II)		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
1	Antelope Four Horned Chowsingha	*Tetraceros quadricornis*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
2	Deer Swamp/ Barasingha	*Cervus duvaucelli*	9	8	15	32	0	0	0	0	0	0	1	1	0	4	1	0	4	6	15	25
3	Deer Brow Antelered/ Deer - Sanghai	*Cervus eldi*	8	12	13	33	0	0	0	0	0	0	1	1	0	5	11	0	2	0	13	15
4	Black Buck -Krishna Mrig	*Antelope cervicapra*	6	11	0	17	4	0	2	1	0	0	0	2	0	3	0	0	8	9	2	19
5	Bear Himalayan Black	*Selenarctos thibetanus*	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5
6	Bear Sloth	*Melursus ursinus*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
7	Bengal Porcupine	*Atherurusmecrourus assamensis*	1	2	4	7	0	0	3	0	0	0	0	0	0	0	0	0	1	2	7	10
8	Leopard/Panther	*Panthera pardus*	7	5	0	12	0	0	0	1	0	0	0	0	0	0	0	0	8	5	0	13
9	Tiger Royal Bengal	*Panthera tigris*	3	1	3	7	0	0	0	0	0	0	0	0	0	2	0	0	1	1	3	5
10	Asiatic Lion	*Panthera leo persica*	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2
11	Rhinoceros Indian	*Rhinoceros unicornis*	3	1	0	4	1	0	0	0	0	0	1	0	0	0	0	0	3	1	0	4
12	Langur common	*Presbytis entellus*	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
13	Macaque bonnet	*Macaca radiata*	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
14	Macaque rhesus	*Macaca mulatta*	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
15	Elephant Indian	*Elephas maximus*	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Total		**44**	**54**	**35**	**133**	5	0	5	3	1	0	3	4	0	14	12	0	35	39	40	114
	Reptiles																					
1	Mugger crocodile (in cage)	*Crocodylus pelustris*	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
2	Mugger crocodile (in lake)	*Crocodylus pelustris*	0	0	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	28
3	Ghariyal	*Gavialis gengeticus*	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
4	Turtle		2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	6
	Total		**2**	**6**	**37**	**45**	0	0	0	0	0	0	0	0	0	0	0	0	2	6	37	45
	Grand Total		**46**	**60**	**72**	**178**	**5**	**0**	**5**	**3**	**1**	**0**	**3**	**4**	**0**	**14**	**12**	**0**	**37**	**45**	**77**	**159**

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
	Schedule III & IV		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
BIRDS																						
1	Pelican Rosy/White	*Pelecanus onocrotalus*	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
2	Roseringed Parakeet	*Psittacula krameri*	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8
3	Goose greylag	*Anser anser*	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
4	Pigeon	*columba livia*	5	5	4	14	0	0	0	0	0	0	0	0	0	0	0	0	5	5	4	14
5	Pastor Rosy	*Sturnus roseus*	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
6	Indian Grey Horn bill	*Ocyceros birostris*	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
7	Red Jungle Fowl	*Gallus gallus*	1	6	2	9	0	0	1	0	0	0	0	0	0	0	0	0	1	6	3	10
8	Dove spotted	*streptopelia chinensis*	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
9	Stork painted	*mycteria leucocephala*	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
10	Heron Night	*Nycticorax nycticorax*	2	2	0	4	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0	3
11	Black kite	*Milvus migrans*	0	0	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	3
12	Comb duck	*Sarkidiornis melanotos*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
13	White ibis	*Threskiornis melanocephalus*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
14	Barn owl	*Tyto alba*	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
15	Sarus Crane	*Grus antigone*	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
16	Goose Bar headed	*Anser indicus*	0	1	3	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	3
17	Duck Brahminy	*Tadorna ferruginea*	1	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
18	Egret Little	*Egretta garzetta*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
19	Flamingo	*Phoenicopterus roseus*	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
20	Horned owl	*Bubo bubo*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Parakeet blossom headed	*Psittacula cyanocephala*	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
22	Parakeet large indian	*Psittacula cupatria*	4	5	0	9	0	0	0	0	0	0	0	0	0	0	0	0	4	5	0	9
23	Pelican grey	*Pettecanus philippensis*	2	2	0	4	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	3
24	Grey Partridge	*pondicerianus*	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
25	Black Partridge	*Francolinus francolinus*	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
26	Indian Ring Dove	*Streplopelia decaoclo*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Shikra	*Accipiter badius*	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
28	Koel	*Eudynamys scolopacea*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Herons grey	*Ardea cinevea*	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	Total		**24**	**32**	**34**	**90**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**1**	**0**	**3**	**3**	**0**	**21**	**28**	**36**	**85**

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
	schedule III & IV		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
1	Deer Barking	*Muntiacus muntjac*	3	3	0	6	1	1	0	0	0	0	0	0	0	1	1	0	3	3	0	6
2	Deer Hog	*Axis porcinus*	2	3	8	13	0	0	3	0	0	0	0	0	0	0	1	0	2	2	11	15
3	Deer Sambhar	*Cervus unicolor*	5	5	9	19	0	0	1	0	0	0	0	0	0	2	1	0	3	4	10	17
4	Deer Spotted	*Axis axis*	17	27	26	70	0	0	0	0	0	0	0	0	0	1	0	0	16	27	26	69
5	Deer spotted (in Hiran safari)	*Axis axis*	**89**	**246**	**34**	369	0	0	0	0	0	0	0	0	0	0	0	0	89	246	34	369
6	NilGai / Blue bull	*Boselaphus trangocamelus*	3	5	9	17	0	0	0	0	0	0	0	0	0	0	0	0	3	5	9	17
7	Striped Hyena	*Hyaena hyaena*	1	3	4	8	0	0	3	0	0	0	1	1	0	0	1	0	0	1	7	8
8	Jackal	*Canis aureus*	2	3	4	9	0	0	0	0	0	0	0	0	0	2	0	0	0	3	4	7
9	Common Palm Civet Toddy cat	*Paradoxus hermaphroditus*	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Total		**122**	**295**	**95**	**512**	**1**	**1**	**7**	**0**	**0**	**0**	**1**	**1**	**0**	**6**	**4**	**0**	**116**	**291**	**102**	**509**

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
Exotic animals			**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
1	Orang Utan	*Papopygmaeus*	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
2	Chimpanzee	*Pan Troglodytes*	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3	Deer Sikka	*Cervus nippon*	1	3	0	4	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	3
4	Hipppopotamus	*Hippopotamus amphibius*	3	1	1	5	0	0	1	0	0	0	0	0	0	0	0	0	3	1	2	6
5	Monkey Capuchin	*Cebus capucinus*	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
6	Monkey capuchin white throated	*Cebus capucinus*	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7	Zebra Grant	*Equus burchelli*	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	Total		**8**	**7**	**1**	**16**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**7**	**6**	**2**	**15**
	Exotic Birds																					
1	Macow- Blue & Yellow	*Ara ararauna*	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
2	Emu	*Dromeaus novaehollandae*	2	0	13	15	0	0	0	0	1	0	0	0	0	2	1	0	0	0	13	13
3	Budgrigar	*Melopsittacus undulatus*	0	0	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40
4	Zebra finch	*Taeniopygia guttata*	0	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	26
5	Fischer love bird	*Agapornis fischeri*	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
6	Peach love bird	*Agapornis roseicollis*	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
7	Cockatiel	*Nymphicus hollandicus*	0	3	245	248	0	0	0	0	0	0	0	0	0	0	3	2	0	0	243	243
8	Cockatoo Sulphur Crested	*Cacatua galerita*	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
9	Rosella Golden Mantled	*Platycercus eximius*	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
10	Pheasant Silver	*Lophura nychemera*	7	8	0	15	0	0	0	0	0	0	0	0	0	1	3	0	6	5	0	11
11	Pheasant Golden	*Crysolophus pictus*	1	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	2	2	0	4
12	Pheasant Ring Necked	*Phasianus colchinus*	12	13	3	28	0	0	0	0	0	0	0	0	0	8	8	0	4	5	3	12
13	Ostrich	*Struthio camelus*	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2
	Total		**23**	**25**	**349**	**397**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**0**	**0**	**11**	**15**	**2**	**14**	**14**	**347**	**375**
	Reptiles																					
1	Caiman	*Caiman crocodilus*	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	3	1	0	4
	Total		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	4

2.4 Veterinary Section

The Kanpur Zoological Park has very well equipped Veterinary Section with Veterinary hospital having in-patient wards for larger carnivores, herbivores, lesser carnivores and birds. The hospital also has Operation Theater, portable X-ray machine, dispensary, nursery for hand rearing, quarantine ward, electric cremetorium, Post mortem room etc. But the Quarantine ward should be situated far away from the animal enclosures hence a new quarantine ward is to be created in the wilderness zone near the rescue center. Poratable X ray machine is present but there is no separate X ray room.A separate X ray room has to be constructed.

The veterinary section is headed by a Senior Veterinarian on deputation . This section has another Veterinarian (on contract), Pharmacist (on contract) and two assistants. Presently the assistants are picked from the class IV and minimum pay scale staff of the zoological park.Efforts are on to procure the required staff, either on deputation from the animal husbandry department or on contract. According to Zoo recognition rules 2009 two veterinarians, two compounders and one lab assistant is needed. A technitian is needed for operating the X ray machine.

The Dispensary is well stocked with required and emergency medicines along with all other amenities. The section is also equipped with tranquilizng rifles, blow pipes etc., along with required drugs. The pathological laboratory has all facilities for diagnostic and pathological examination of faecal matter, blood, urine, and skin scrapes.

The monkeys and herbivore species like deer are prone to tuberculosis.Testing the animals for the infection from tuberculosis and proper prophylactic measures to control the disease are needed.

2.5 Commissary Section

The Zoological Park has well housed and equipped commissary section with meat house, kitchen, dry ration store, and weighing facilities.

The food receiving hall is well ventilated. The store has been renovated with the financial assistance from the CZA in the year 2008-09. Food is cooked out doors as the Zoo at present doesn't have LPG facility. A well planned animal diet chart for all the animals is in place. Annual tenders are floated for proper and timely supply of feed and dry ration. The diet articles are received on proper challan from the suppliers at regular intervals. Meat, fruits, vegetables and leafy vegetables are received on daily basis and distributed to different beats of the animal section on proper challan. The staff under Commissary section consist of the range officer, forester in charge of store, food distributors and a pair of cooks. The overall incharge of this unit is Veterinary Doctor**.**The veterinarian checks the meat and the food items for the parasititic load and freshness and clears the materials for distribution.

Earlier the food was distributed in an open trolly pulled by tractor. During transit the food material used to get contaminated due to dust and other contamination, before reaching the enclosure for final distribution. Hence a covered van has been purchsed and put in use for transporting the feed hygeinically to the enclosure. Utmost care is given to ensure the freshness and hygeine of the food given to animals.

At present a weighing machine for dry ration is available, but to weigh the fodder which is about 20 quintals per day is not available. For this a weigh bridge is necessary to weigh the large quantities of fodder .Presently the fodder brought by contractor is weighed at each enclosure with the help of a spring balance.For weighing the vegetables digital weighing machine is in place.

The feed for the carnivores is given once in a day and are off fed on Friday. It is adivisable to feed such animals at the end of the day, when the zoo is about to be closed. But in Kanpur zoo the meat comes around 9.00 am and is distributed to all the enclosures by noon.To follow the schedule of distributing the meat in the evening hours a deep freezer has been purchased but generator is required for continous supply so that the meat is stored in it and is taken out around 2.00 pm and is distributed in the enclosures by 4.00 pm.

Presently the cereals and grains are purchased and ground in the machines from the market and then mixed in predetermined proporations manually.The dry feed store has been made more hygeinic but a stainless steel blender is required to mix the feed without touching by hands.

The full strands of pioneer cheri/ sorghum is fed to the herbivores.The cheri is fed from May to October. In the initial months, the strands are soft and the browzers like spotted deer, Black buck consume almost full strand.But as the months pass the strands become hard and much of the fodder is wasted.During this time the fodder has to be chopped and given to the animals thus wastage is also controlled and the quantity of intake is also increased. Presently the chopping is out sourced but the keepers complain that there is time gap between chopping and distribution. In the meantime the cheri gets heated up as it is stored in gunny bags.Hence a chopping machine is required for chopping the fresh strands.

2.6 Sanitation Section

The section is presently placed under the charge of range officer-administration, who is answerable to Director. This section is manned by 11 full time sweepers and two relievers. For the working convenience, the whole Zoological Park has been divided into 11 sanitation units each with 1 sweeper in the place. Sweepers are responsible for maintaining cleanliness in their designated areas and the animal enclosures. Roads, foot paths etc are cleaned twice daily. Dustbins have been kept at convenient places, but still more dust bins are required.

Presently there are four public toilets constructed by zoo management and a Public toilet situated near to the Tiger enclosure maintained by Sulabh international. All these toilets need repairs and modification. Number of visitors are increasing day by day and hence more toilets are needed. Four more toilets will be constructed during 20013-14 to cater to the needs of increased number of visitors. There is a bio-gas plant in the zoo premises which needs repair.The excreta of rhinoceros can be utilised for the biogas production.

The solid waste of the enclosures such as dung and fodder remains are disposed in the pits dug behind the enclosures. This is not a good practice. Proper composting pits should be constructed and the waste material should be composted to get environment friendly composte, which can be utilised for greening the park. The present method of burning the dry solid materials should be completely stopped and these materials should also be used for composting. For solid waste management a vehicle is required.

Polythene is banned in the zoo park and proper checking is done at the entry gate for enforcing this. The visitors are provided paper bags at the entry gate and the chips and other eatable wrappers are cleared at the gate and eatables are put in the paper bags, provided free of cost. Water bottles and carry bags are still allowed out of compulsion. In order to ensure that these bottles are brought back by the visitors, a token system is introduced for carrying water and soft drink bottles inside the park.The visitor has to deposit Rs 10/- at the entry gate. This money will be returned to them when they bring back the empty bottles. A proposal to install 10 RO machines has been approved and once it's installation is completed, steps will be taken to prevent the entry of plastic bottles also.

Maintenance of hygiene and cleanliness in the zoo is of utmost importance for the health of animals and prevent any epidemic. The staff presently engaged in this work have become old and their work efficiency has reduced. During the master plan period more enclosures are proposed to be built and the size of some enclosures are proposed to be increased.The present strength of sweepers is insufficient. More sweepers are needed for the maintenance of hygiene in the zoo.These sweepers have to be obtained either by regular appointment after getting additional posts sanctioned or by out sourcing.

2.6.1 Disposal of dead animals and wastes

CZA guidelines for the disposal of dead bodies of Tigers, Leopards, horn of Rhinos are strictly adhered to, where as other animals after post mortem are burried. The Zoo has one small incinerator, which is not capable of taking the full dead body in it at one go, thus it can't be used for burning large animals. Hence an incinerator of proper dimensions is required to dispose the animals in hygienic manner. The dead herbivores are burried after postmortem.The pit is covered with lime and salt for faster decomposition of carcass.

The carnivores are fed with meat along with bones.The left out bones after feeding from the carnivore enclosures are dumped at designated places.These are cleared at regular intervals by contractors for which annual tenders are called for removing them from the premises of the Zoo. Contractor removes the bones at a weekly interval. Foul smell due to decay of left over meat occurs during this interval. The Zoo has built a composting pit for composting the bones also and composting is being done on an experimental basis. If it is succesful the animal body waste and bones will also be disposed off by composting. Other wise the present practice of disposal through auctioning will be continued. Unique monkey catcher designed by the Kanpur Zoo Park has proved its efficency in recent monthly and a track load of monkeys have been shifted to natural habitat.

2.7 Garden Section

The zoo has 12 lawns having an area of approximately 8 hactres. These lawns could not be maintained properly due to various factors such as paucity of water, increase in the number of free ranging spotted deer and monkeys, destruction by free ranging porcupines and other rodents etc. Only lawn existing in the campus of the Director's office could be maintained. Efforts are being made to confine the free ranging deers to deer safari, translocate monkeys and reduce rodent population. 6 lawns are taken up for renovation during the year 2013-14. New bore wells have been added to augment water supply to the lawns. Remaining lawns will be taken up during the next financial year. Effort is to make all lawns green with lush grass and beautify it with seasonal flowering plants, shrubs, small trees, climbers etc.On the afforestation front much more need to be done, because every year during rains the big trees get uprooted as the area is sandy in nature.Regular afforestation with species like Pipal, Pakad, Bargad, Gular, Neem, Chilbil, will be taken up. The saplings will be protected by chain link mesh, brick guard and iron guard where ever needed. The monkey meance is too much in the zoo. Group of mokeys attack the visitors and snatch away the eatables from the hands of the visitors. Thus proper protection from the monkeys has to be ensured. Unique monkey catcher box designed by the KZP has proved its efficiency. In recent months about 130 monkeys were caught and translocated to forest areas without any mortality. Remaining monkeys will also be caught and released in jungle.

Many of the stand off barriers already have the hedges, but still more barriers are to be planted.The barriers of the enclosures will be planted with hedges of suitable species, so that the masonry structures are camouflaged and give a natural look to the enclosures.The hedges will be protected by kick rails and welded mesh in front to protect the plants from hooligans.

The enclosures have chainlink mesh as barriers. Because of the terrain one enclosure is screened from the other enclosure with natural barrrier.But the enclosures are exposed on the three sides to the visitors.This has to be camouflaged by planting proper climbers and plants on the sides(green belt).

There are 10 maalis at present in the garden section.The maalis look after road side hedges by pruning, manureing, and watering. They take care of the existing lawns also. They are ill trained and ill equiped and hence hedges and lawns are not properly maintained. Irrigation system is being augmented by having more bore wells and installing spriklers for proper watering of the lawns, and plants. Proper equipments for cutting grass, hedges, hoeing and tilling of land have being purchased and given to mallis. They are being trained in modern gardening technics. As the number and area of lawns and plants increase, more maalis are required. They need to be recruited on permanent basis or on outsourcing basis. The garden section has to be augmented and the mallis should be supervised by a head malli who will report to Range Officer (Administration) through sector in charge.

2.8 Estate Section

This Section is responsible for the maintenance of infrastructure in the Zoological park and its round the clock security. There is a small workshop to attend to the petty repairs of animal enclosures, transport cages and other structures. The section is looked after by Range officer administration and assisted by a Forester and one Forest Guard. Other members of this unit are one Blacksmith – cum – Carpenter, one electrician and one mason.

The ticketing house has been constructed long back and needs repairs and face lift.The houses have to be made more airy and ventilated. Modern ticketing machines are to be acquired.

Majority of the enclosures were constructed during 70's. All the enclosure require proper maintenance.The roof of the enclosures have become so old that the swepage is a common problem. The ceiling of the enclosures have to be made water proof. Plastering of the walls, moats, retaining walls etc, works are to be done.

The bund of the lake supports the arterial road of lion enclosure. Due to heavy rains during 2008-09 and the years before the bund is eroding and the road is getting damaged. A major retaining wall is required to protect the arterial road. Soil erosion is a major problem in the zoo. Because of this many trees are uprooted and roads, bridges and buildings get damaged. Soil conservation measures such as Check dams, retaining walls, brush wood check dams, waterways, landscaping with vegetation etc. are needed to prevent soil erosion and maintaining the landscape of the zoo.

The pedestrians while going back after visiting the zoo can take wooden bridge route which is present near chimpanzee enclosure and leave the zoo in

shortest distance.The wooden bridge requires maintenance. But the motorist vehicles they have to once again traverse the entire visitor circulation route. Hence to reduce the distance an over bridge can be constructed on the canal near chimpanzee enclosure.

The zoological park is spread in a vast area of 76 Ha and it is a ravinous area with undulating terrain.the entire area has been artificially planted with neem (Azadaricta indica), Jamun (Sizigyum cuminii), Shisham(Dalbergia sissoo), Chilbil(Holoptelia integrifolia), Prosopis(Prosopis juliflora) etc., Because the area is sandy in nature and undulating the trees become wind throw during rainy seasons.Big trees are uprooted and tend to hamper the visitor circulation. When such incidence happens the obstruction on roads are immediately cleared and the wooden logs are stacked on the side of the road. As there is no clear policy of disposing these logs, they are allowed to rot on the spot of clearing. Some of the logs, lops and tops of prosopis and other lesser valued species are utilised for bonfire in the enclosures during winter season, to protect the herbivores from the severeness of winter.Thus proper disposal of valuable timber to forest corporation or the designated agency is essential.

2.8.1 Administrative Building

The administrative building is located near to the entrance of the Zoo, housing Director's office. Administrative building does not have a vehicle stand.The vehicles of the staff are parked in front of the building which give a shabby look. To improve this a vehcle stand has to be constructed by the side of the office. For the sake of Director's vehicle a portico has to be constructed.On the backside of this building are Commissary section's building, ration store and in front of the building after crossing the road is interpretation center and lake view building. All thses building need major renovation.

2.8.2 Staff Accommodation

The Director, Veterinary Officer, Range Officers, Wildlife guards, clerical staff, some of the animal keepers, chowkidars, cleaners are provided with government accommodation near the Zoo. All the quarters have been built in the initial stage of zoo establishment. Some of the quarters are built in blocs of four quarters two on the ground floor and two on the first floor. Two such blocks are present. Remaining houses are single storied. The ceilings and the walls are damaged over the years and cracks and leaks are a common phenomenon. These ceilings have to be water proofed replastering of the walls has to be done. In many houses the wooded frames were damaged by termites and thus need to be replaced. Few people live in government accommodation in Kidwai nagar, which is

situated about 15 kms away from the Zoo. Many more live in rented accommodations.Almost all the houses require major repairs as no maintenace was done for many years due to paucity of funds. Repair at regular intervals has to be done and hence budgetory provision for the same has to be provided. An officer of the rank of Assistant Conservator of Forests have been posted to the Zoo by the government. Suitable accommodation has to provided for this officer and hence a new type IV building has to be constructed. No recreation facility is available for staff. So adequate recreational facility have to be created for the welfare of the staff.

2.9 Security section

The security section is looked after by the Range officer Protection.The zoo has 19 posts of Chowkidars for round the clock security. Two ticket checkers, animal keepers,forest guards and foresters also help in maintaining the disicipline and decorum in the park.

The zoological parks are the places where vandalism is a common phenomenon. A proper vigil is maintained by the staff at every place.First of all at the entry gate, the chowkidars on duty and the ticket checkers, screen the visitors for polythene and other objectionable articles like explosives and fire arms.Much of the polythene is collected there and the visitors are provided with paper bags in place of polythene bags.The water bottles are allowed inside after collecting the security amount.Sometimes the unruly people try to throw the pet bottles in to the enclosures.The culprits are caught and fined appropriately.

In the evening hours the visitors are sent out of the premises on sunset.The chowkidars on duty in the evening shift are expected to sign the register at the maingate after evacuating premises. The evening shift chowkidars take the charge of the animals and the enclosures from the animal keepers in the evening and hand over the charge to the chowkidars coming in the night shift and they in turn hand over the safe charge of the animals to animal keepers in the next day morning.The handing and taking over of the charge is in writing in the daily reports. Thus a round the clock security arrangemnet of animals is ensured.

To strengthen the security system close circuit camera is required.These camera have to be fitted at main entrance gate which keeps a record on the visitors who are entering in to the zoo, in the event of any mishap, on the basis of eye witness the culprits can be easily identified. It keeps a vigil on the staff who try to escape the duty hours. commissary section in which the food materials come the weight and the quality can be verified from remote place, close circuit camera also should be fitted at the Hospital and certain enclosures like nocturnal animal house, aquarium, chimpanzee etc This would help in controlling the vandalism and at the same time help in studying the behaviour of the animals. Close circuit camera can also be installed in the night cells of the expecting mothers, so that without disturbing the animal the status of the cubs can be monitored.

2.10 Water Supply System

Presently the Zoo is getting its supply of water from its own sources. Ground water is pumped mainly from 2 tube wells.One tube well is situated near hospital and the other near chimpazee enclosure.The water thus pumped from chimpanzee tubewell is stored in one over head tank and from the other bore well the water is pumped straight into the distribution network. Water becomes a big problem during summers when the supply of electricity becomes erratic. Zoological park has a heavy duty generator set, but is sparingly used due to exhorbitant cost of maintenance.In case of emergencies, the water is also transported using the water tanker borrowed from Social Forestry Division, Kanpur. During the year 2009-10 Jal Nigam has laid a water pipeline from Ganga barrage to zoological park on the request of Director,Kanpur Zoological park. Treated potable quality water can be brought to the zoo through this pipe line. All the enclosures are connected with water distribution lines.The sleeping cells of the animals are cleaned every day and the moats are cleaned at regular intervals and filled with water again.

The visitors are provided with drinking water points at various places. These water points were not repaired for a long time. Tube well is the main source of water in the Zoo. The water is having high concentration of dissolved materials and is not quite good for drinking purpose. Water provided to the visitors and the animals have to be properly treated. One RO machine has been installed in the hospital. Treated water is provided to all carnivore animals. Nine more RO machines are proposed to be installed in the zoo. After the machines are installed, all the visitors and zoo animals can be provided with treated pure water

The water pipelines were laid long back in 70's and need replacement. Water is wasted because of the damaged pipelines. Every year the water lines are repaired with limited resources at the disposal of the zoo.A project was sanctioned by CAMPA(Compensatory Afforestation Fund Management and Planning Authority) for repairing and replacing of the pipelines and also for construction of an overhead tank near the second borewell, situated in Hospital complex. Construction of overhead tank is completed and comissioned. Pipe lines have been replaced at many places. Water supply position of the zoo has improved a lot. Regular repair of the pipes, cleaning and repair of overhead tanks are necessary for maintaining the water supply system and ensuring that clean and germs free water is provided to animals and human beings.

Regular water testing of deep bore well water should be carried out to know the suitability of water for drinking purpose.The testing can be done by the State Pollution Control Board, Laboratory or Indian Institute of Technical Research, Lucknow on payment of the prescribed fee.This testing should be done at predetermined intervals.The water deposited in the lake should also be tested for the

contamination and thus the ground water pollution can be analysed and appropriate measures would be taken.

2.11 Power Supply System

Presently the Zoo is getting its supply of electricity from Kanpur Electricity Supply Corporation(KESCO). Most of the animal enclosures do not have electricity supply. Aquarium, nocturnal animal house, ticketing counters, inter-pretation centre, stores and the administrattive building have inverter facility for continuous power supply.The Zoo electrician, who is under the control of the Range officer(Administration) undertakes minor repairs in the Zoo. Certain essential items such as bulbs, wires, electric equipments etc. are kept in stock to meet any emergency situation. A heavy duty generator is also availble, but is sparingly used due to heavy cost of maintenance.The wiring in many enclosures is old and has to be replaced. Some enclosures are not connected with either inverter nor generator. Proper wiring has to be done so that in the case of emergency, generator or inverter facility can be used to illuminate the feeding cells and kraal. A portable generator system and a portable inverter system has been purchased and kept for in place in the event of emergency rescue operations.

2.12 Education and Awareness Section

The Education and Awareness section is housed in the interpretation centre. A qualified person has been posted as Education Officer. Education officer will work under the supervision of Assistant Conservator of Forests. Education officer will be responsible for the preparation and implementation of the education plan. About six lakhs vistors, including children visit the zoo every year. Education is one of the objectives of the establishment of the zoo. Except for organising Wildlife week and a few functions, no planned education programs have been undertaken by the zoo. Education officer will conduct various programs for different types of visitors as per the approved eduction plan. There is a small Library in the Zoo. Zoo has a good collection of films with equipment to screen them.It also has a slide projector and a good collection of slides for presentation. Interpretation centre has a big hall with chairs, which can accommodate about 250 persons.

A small collection of models made of plaster of paris and fibre glass models are available with the zoo. These are kept in the Lake view building.These need proper maintenance and addition of more such models is required for interpretative education.

Interpretative Signages, describing the animal and its related information is prominently displayed near the animal exhibits.The interpretative signages have been adopted by PSIT(Pranveer Singh Institute of Technology).They have placed high quality signages with colours merging with the forest back drop.The signages

are maintained for the coming five years by the institute free of cost. Booklets, maps, leaflets, Annual reports etc are produced by the section for extension activities. In addition the Section organizes different celebrations like Environment Day, Wildlife Week,World wet lands day etc. This section works in collaboration with different Schools, NGOs and other Organizations.

Wildlife week celebrations are one of the most sought after functions of the zoological park. During the entire week starting from 1st October to 7th October the school children are given free entry in to the zoo premises.Thus about 20000 school children visit the zoo during the week. During this period competitions for children on wildlife related issues like essay writing, elocution, drawing, painting, small plays etc. are organised and prizes are distributed on the final day. Regular news about the zoo events and activities are published in print and electronic media. News papers also publish stories on animals and special events in the zoo. Electronic media also gives a lot of importance to the zoo and its activities by telecasting success stories and events. FM Radio also carries the news about the zoo and invite officers for discussions. Recently contact details of the news reporters of all print and electronic were collected and kept. Education officer sends regular press briefing on the activities of zoo to the media. Media should be properly used to create awerness among the people regarding the zoo and wildlife so that more come out for the cause of wildlife conservation. The interpretaion centre and the museum has to be strengthened.

The feed details of the animals are displayed prominently near the enclosures to bring about awareness regarding the feeding habits of various animals housed in the zoo.

2.13 Research Section

Presently the research activity is restricted only to recording the feeding pattern and recording the mating period of the animals and treatment given to the animals. No fulltime research officer is posted at present in the zoo nor any research projects are in progress. The zoo has a unique ecosystem in the wild area compirising of 36 hectares. The lake in the Zoo is spread over 18 hectares and has a variety of fish species. About 50 crocodiles are estimated to be this lake feeding on fishes and occassionaly on deers and the birds. The lake ecosystem supports a large number of species. This are is a favorite nesting place for birds like painted stork, open bill stork, darters, lapwings, herons etc. Lot of research projects can be taken up to study the various aspects of this unique ecosystem. The Zoo has a collection of about 1250 animals belonging to 75 species. Research on animal behaviour, mating pattern, response to various treatments, feeding pattern and nutrition requirement, enclosure enrichment etc. has to be done to further the knowledge on Zoo management.Eventhough lots of basic data is generated by the way of daily reports, animal treatment forms etc, the data is not computerized and

analysed for tangible inferences. Research scholars should be engaged on small research projects also so that the data on feeding habits, behavior of animals and visitors profiles etc., can be done and utilised for improving the management of the park.

The Vice Chancellor, Kanpur Unversity was requested to send students for undertaking studies on various aspects of zoo management as part of their curriculum activity and provide consultancy for improvement of the zoo. He has accepted the suggestion and nominated Mr.Sidhansu Rai, Associate Professor, Department of Tourism Management for this purpose.The MBA students of Chatrapathi Shahuji Maharaj University, Kanpur are allowed to do their project work on Zoological park.The students have conducted various surveys and published their project reports.The project reports were of much help in improving visitor facilities and cleanliness drive in the park.

2.14 Roads/footpaths/ trails network

There is a good network of roads/ footpaths and visitors trails in the Zoological Park. There are well defined directional signages on these roads. The roads are laid out in such a way that the guests of the Zoo can visit all enclosures with out getting tired. Shades with benches are provided for the visitors along the roads. Other facilities like toilets, drinking water facilities, kiosk etc are provided all along the roads. There is a lack of proper rain shelters in the park.

The roads require mainitenance.One bridge is required on the nallah near chimpanzee enclosure so that the vehicular traffic can be properly circulated and the total travelling distance can be reduced.

The visitor numbers are increasing every year.To accommodate the increasing numbers of visitors proper pedestrain paths have to be provided. Hence Interlocking tiles to be placed on either side of the road to give proper way for the pedestrians.

The road network requires regular maintenance.

2.15 Mobility

There is one Indigo car for mobility in the Zoological Park. The zoo has covered van for the distribution of food to the animals. Charry, Berseem etc. are distributed to the animals by the contractor in his tractor trolley. There is vehicle for the movement of staff and disposal of solid waste. It is proposed to purchase a vehicle for solid waste management, four motor cycles for staff, three battery operated vehicle for the movement of visitors and a pick up jeep for carrying man and material to different locations in the zoo during emergencies. There is need for a vehicle for Assistant Conservator of forests and Veterinary officer and a water tanker for transporting water for plants and animals.

2.16 Visitors Amenities

As the zoo is spread in a very big area, keeping in view the needs of visitors,Kanpur zoo tried to develop sufficient visitor amenities.

The Zoo has 4 public toilets constructed by the park and can be used free of cost and another public toilet near main kiosk at tiger enclosure is constructed by Sulabh international which can be used by paying nominal payment. Four more toilets are proposed to be constructed at convenient places as the total visitor circulation road length is about 8 kms.

Rain shelters, two kiosks, dust bins and first aid facility for the convenience of Zoo guests are also present. More rain shelters have to be constructed. The Zoo has a recreational area for children near the main gate. Playing facilities like swings etc are provided here for children. But the area is small and facilities are limited. Lot of children visit the zoo every year and this area needs modification and enlargement.

Drinking water facilities are provided at short distance at convenient points. Because of erratic power supply the drinking water points do not get water supply when the power is off. Thus an exclusive drinking water pipeline is needed, so that from the over head tank the water can be released in to the drinking water pipeline and continuous supply of water for the visitors can be ensured. Water from the tube well is hard and partially contaminated. Hence RO plants have to be installed to provide the visitors with clean potable water. Action is being taken in this regard.

A souvenir shop is required at the main entrance gate, so that the visitors who come to the zoo can take some memorable items of the zoo. A cloak room is required near the ticket counter to enable the visitors to leave their personal belongings safely at the entrance. This will eliminate the hardship of the visitors of carrying heavy luggage inside the zoo and enjoy the zoo in a much better way.It is proposed to construct souvenir shop and cloak room during 2013-14.

The directional as well as interpretative signanges have been placed at appropriate places for the convenience of the Zoo guests.All the eleven lawns are being developed for the benifit of the visitors.

2.17 Translocation of Free ranging Spotted deer population

Kanpur Zoolgical Park has around 300 free ranging spotted deer freely moving, feeding and breeding inside the zoo.It is learnt that in late 70's a pair of spotted deer escaped from the enclosures which gradually bred to form the present population.For the first time visitor, these herds give the feel of a sanctuary. If one analyses the situation one would realise that these herds have created havoc over the years.The hooves do not allow new vegetation to come up.The animals also nibble the young shoots.Thus no new regeneration has come over the years.The

terrain of the zoo is undulating and is sandy in nature. Due to the movement of these animals in big herds no grass comes up and adds to soil erosion in rainy season.

As these animals are free ranging, hence they come in to close proximity of visitors and out of compassion the visitors tend to offer eatables to these animals.In turn there is a possibility that they become carriers of the zoo notice diseases.This affects the health management of the zoo park. Hence these animals have to be released in the forest areas after proper screening, under soft release programmes. Soft release programmes have been undertaken successfully by various zoological parks earlier and the same methodology will be adopted in this zoo also to control the excess population of the animals both in the enclosure and outside.

2.18 Conservation Breeding

Swamp Deer is state animal of Uttar Pradesh.

2.18.1 Conservation Breeding Centre for Swamp Deer (Barasingha)

Kanpur Zoological park is situated in the Indo Gangetic plains of Uttar Pradesh.The state of Uttar pradesh has swamp deer population in the terai tract of the state.The swamp deer is almost restricted to the district Lakihmpur kheri especially in Jhadi tal of Kishanpur sanctuary and certain pockets of Bijnor and adjoining districts.Keeping this in view the zoo park has been designated as a conservation breeding centre for Swamp deer.The population of Swamp deer is steadily increasing in the zoo.On an average 4 births per year are recorded in the past few years.

For proper conservation breeding of the swamp deer an off display conservation breeding centre has to be developed so that proper heterozygosity can be maintained and inbreeding of the population can be checked.

2.18.2 Participating Zoo For Indian Rhinoceros

One horned Rhinoceros has been successfully reintroduced in to the state of Uttar Pradesh in Dhudhwa National park.The Rhino has been brought from Kaziranga national park and reintroduced in the state.Thus the Kanpur zoological park has been designated as a pariticipating zoo for the Rhinoceros.The Rhino is breeding to the expectation in the zoo. But the enclosures at present are insufficient to allow mating rituals properly. The male Rhino chases the female violently before mating and female rhino tries to escape the on slaught of the male rhino. After both are sufficiently tired the mating takes place.But due to insufficient space many a times the female was overpowered and almost the rhino fell down receiving injuries.This may prove fatal sometimes.Thus the mating is postponed till the enclosures are properly designed. Once the enclosures are made to the specifications the breeding activity will be resumed allowing sufficient space for the animals to perform nuptial

activity. A conservation breeding centre for breeding the rhinos on scientific lines is necessary. Thus in the master plan an off display conservation breeding centre is proposed in the wilderness area of the zoo.

2.18.3 Conservation Breeding Center for Sarus and Red Jungle Fowl- Sarus is State Bird of Uttar Pradesh. Presently the main population of sarus is restricted to few districts of Uttar Pradesh. They are Kanpur, Etawah, Mainpuri and Kannauj districts. The zoological park falls in the Kanpur Nagar area. Hence the area is much suitable for conservation breeding of sarus. Hence to protect the population and restock the wild population in the event of requirement, conservation breeding of the sarus is necessary.

Similarly Red Jungle fowl is found in the Sal forests (Shorea robusta). The state of Uttar Pradesh has Sal forests in the Terai forests and in the folds of the vindhyan hills. This species is breeding well in the zoo. Hence a planned breeding programme of Red jungle fowl is necessary.

PART – II

Proposed management

Chapter: III

The strategic plan

3.1 A brief Background

To understand the role of zoos, we have to understand about our history with animals. First known zoo-type collections were kept by Egypt in 2500 BC. Some Pharaohs maintained a large number of giraffes, lions and ostriches. The Romans brought many varieties of wild animals back from military expeditions and kept them on display until they were slaughtered in public arenas as entertainment. Thousands of African mammals were killed for entertainment until Mr.Telemachus, a Christian, threw himself into the arena as a protest against such inhumanity. This act purportedly put an end to these atrocious public spectacles. Since the middle Ages, public zoos have been popular urban entertainment centers. In wealthy metropolitan centers of industrial Europe, zoo menageries with specimens collected from all over the world became symbolic of colonial imperialism and national pride.

Private zoos and menageries of Emperors and Kings were displays of power, wealth, and prestige. The public zoos of the nineteenth century endorsed modern colonial imperialism. Explorers proved their patriotism by sending home a tiger or an elephant. The gift of an exotic animal to the metropolitan zoo became a token in subservient diplomatic relations.

Today's zoos and wildlife safari parks are radically different from the early iron and concrete zoos. There is a paradigm shift in the thinking and in the management of the Zoos worldwide. Now from exhibits for entertainment, the Zoos have transformed to centers of excellence in the studies of animal behavior, habitat studies, wildlife medicine etc. Presently more emphasis is given on environmental studies, ecosystem and survival of species and organizing networks among the national and inter-national Zoos for better management of the species. The emphasis is on endangered species and their planned breeding.

3.2 Objectives of Management

The main objectives of management of Kanpur Zoological Park are as follows–

i. Conservation Breeding of Swamp Deer, One Horned Rhinoceros and Red Jungle fowl, Thamin deer and other important species.
ii. Conservation of representative species of the area and the species of national importance.
iii. Conservation education and awareness
iv. Research for Conservation
v. Rescue and rehabilitation for Monkeys and Leopards (Off display exhibit)

3.3 Theme of Display

The basic theme of display of the animals in the zoological park is in the following pattern.

i. Broad taxonomical display of wild animal species of National importance with emphasis on fauna of Gangetic plains.
ii. Off Display life time care facility for 20 Monkeys and Leopards
iv. Conservation breeding of Swamp deer, Rhinoceros and Red Jungle Fowl, Thamin deer.

3.4 Mission Statement

Conserve endangered species, impart knowledge on wildlife and inspire visitors to protect Forests & Wildlife.

3.5 Vision

Kanpur Zoo Park is committed to saving species by uniting our expertise in animal care and conservation science with our dedication to inspire passion for nature among visitors. Kanpur Zoo Park has the following vision to be achieved in a period of next 20 years.

- Conservation of fauna of Indo-Gangetic plains
- Providing an alternate home for the species of national importance
- Develop the Zoo as Bio-diversity centre by introducing and conserving maximum species of flora and fauna.
- Creating infrastructure for education and awareness amongst the masses on wildlife conservation.
- Conservation breeding of rare and endangered species of the region.
- Strengthen the linkages between ex-situ and in-situ conservation.
- Develop the zoo as a research center for Animal Biology and Ecology.
- Develop Kanpur Zoo into a Referral center on Wildlife information.

3.6 Theme

As mentioned earlier in the objectives, the Zoological Park is mainly concentrating on conserving the endangered animal species of the Indo-Gangetic plains; efforts are made to provide naturalistic conditions to them as far as possible.

Making use of the vast area available with the Zoo, measures are taken to provide big enclosures for the animals and to create a good sylvan environment within the Zoo.

Chapter IV

Future action plan

To develop the zoological park in to a scientifically managed centre for awareness, research and education, and to provide specified living standards for the animals and to have scientific approach for ex situ conservation of endangered species, properly planned and well designed zoo is of foremost importance. To achieve this objective the entire available area is divided into various zones.

4.1 Zonation

About 76 hectares of land is under the possession of the Zoological Park and the area is divided into different zones as follows.

- Main display zone – consisting of Main Zoological Park with main entrance, administrative building, interpretation center, animal enclosures, hospital, kitchen, etc. In the main display zone the animals are once again placed according to the taxonomic classification. The first section is of the primates, next section is aviary, third in the visitor circulation is the omnivore section, fourth is carnivore section, fifth is the herbivore section, sixth is reptile section and seventh is the exotic animal section.
- Wilderness Zone- Almost 36 hectares of land along the lake is being used as wilderness Zone, where in about 50 Mugger and 300 Spotted Deer wander freely. This area gives the look of a wet land surrounded by a natural forest. In the winters this area attracts a variety of migratory birds. This area has already been fenced with chain link to provide full protection for the wilderness and confining the free roaming deer in it. This area is presently known as Herbivore safari. However the Herbivore safari is not successful so far as the chain link fence could not contain all the spotted deer inside. Because of the breaches in it the spotted deer escaped from the safari. These herbivores cause compaction and overgrazing in the forest, this resulted in loss of new regeneration. Chain links is being repaired and the herbivore population will be contained in the wilderness zone.

Conservation breeding centre and Wild animal rescue center zone – In the wilderness zone, away from the main display zone future conservation breeding center for swamp deer, Rhinoceros, Sarus crane, Red Jungle Fowl and animal rescue center for Leopard and Monkey can also be developed. The designated area will be between the leopard enclosure IV and herbivore safari. This area is away

from the visitors with least disturbance and is suitable for creating rescue and conservation breeding centers.

The master plan is aimed to provide a strategic planning for the planned development of the Kanpur Zoological Park in the coming years i.e. 2013-2014 to 2024-2025. The proposals in this plan are based on the availability of different resources like water, space, vegetation, climate, visitors' profile, ex-situ conservation measures, conservation education and research needs

While preparing the master plan due care is taken for following the recommendations of the Central Zoo Authority**.**

4.2 Proposed Animal Collection Plan and population size.

Kanpur Zoological Park has about 76 Ha of land at its disposal. Earlier there were many wild animals of national and international importance in the zoo. The animals have bred very well in the forestry settings of the zoo. In due course of time some of the animals died due to age and diseases thus some lone animals remained in the zoo. For proper display of the animals, and to have the representation of animals of national and international importance, collection of new animals from various zoos is proposed. This exercise is based on the inventory of animals and animal profiles of identified individuals of the selected endangered wild animal species in Indian zoos as published by CZA.

Pairing of loner animals

It is proposed to collect the following animals which are at present loners with the zoo and enclosures are available for the animals. The animal collection plan and the carrying capacity of various enclosures is given as **Annexure V and Annexure Va**

Chimpanzee – presently the zoo has one male chimpanzee. The zoo earlier had chimpanzees and which bred very well, which have also been transferred to other zoos. It is essential to pair the animal so that it can breed well. The breeding history available in the past records has been tabulated below which shows that the animal performed well in the zoo

S. No.	Date	Sex
1	22-10-1985	M
2	10-12-1986	1M

Orangutan – Presently there is only one orangutan male with the zoo. From the inventory report it is found that there is one female at Nandan Kanan Zoo. The animal which is available with the zoo has already crossed 30 years. Instead of trying for an exchange it would be worthwhile to try for a pair from international level exchange. The animal which is present in the zoo is a Kanpur zoo born animal.

S. No.	Date	Sex
1	**13-11-1979**	**M**

Cockatoo – Presently the zoo has one Cockatoo moluccan and Cockatoo sulphur crested. Efforts will be made to pair these birds and acquire some other Cuckatoos.

King Vulture – The vulture which is in the zoo is a rescued one. The vultures have become rare and endangered. Efforts will be made to introduce and pair up from Vulture. A big vulture enclosure is proposed in the master plan. Thus after pairing the animal there is every possibility that these vulture would breed.

The Zoo had many animals at one point of time, which have performed very well and survived for many years in the zoo, but expired in the course of time. Efforts will be made to get these animals again and efforts will be made to conserve and breed these animals successfully. These animals are as follows

The main objective of the zoo is to have the representation of wild animals of Indo gangetic plains and also the animals of National importance. Keeping this in view certain animals are proposed, which are

Chinkara – Earlier chinkara were present in the zoo. The breeding of these animals was satisfactory. The main reason for the death of the animals was due to in fighting. Proper battery type of enclosures was not provided. This time the males will be separated by battery type of enclosures so that their survival could be ensured. The breeding history of the animals is tabulated as follows-

S. No	Date	Sex	S. No	Date	Sex
1	20-04-1980	M	17	30-06-91	M
2	13-06-1980	F	18	27-11-93	M
3	18-12-1980	M	19	08-03-94	M
4	08-06-81	F	20	24-06-94	M
5	12-09-81	F	21	14-09-94	M
6	10-01-82	F	22	29-10-98	M

7	2-07-82	M	23	07-06-2001	F
8	23-09-82	M	24	25-02-2003	F
9	14-02-83	F	25	15-01-2004	M
10	20-04-83	F	26	10-09-2004	M
11	29-03-85	M	27	09-10-2004	F
12	20-06-85	M	28	21-04-2005	M
13	29-04-86	M			
14	22-02-87	M			
15	15-04-87	F			
16	08-04-89	F			

Wild Boar – This animal was available in the zoo earlier and survived for a longer time in the zoo. The enclosure is still vacant and can be used after minor repairs. Wild boar bred very well in the zoo situation. The breeding history is as follows-

S. No	Date	Sex
1.	22-04-1977	2male, 1female
2.	23-04-1977	1male, 2 female
3.	04-02-1978	3male, 2 female
4.	07-07-1978	1 male
5.	04-05-1981	1male, 1female
6.	19-04-1983	2 male, 2 female
7.	22-08-1984	1 male, 1 female
8.	07-09-1991	1 male

Wolf – This animal is also an endangered one as its habitat is getting dwindled. A pair of them will be put in the collection. The state of Uttar Pradesh has its natural habitat. Hence to conserve it these are bred in captivity. The earlier history of the zoo shows that wolves have born in captivity. The birth records are as follows-

S. No	Date	Sex
1	19-01-1995	1 Male 1 Female

Fox – This was present in the collection of the zoo. This survived for many years. This is also an endangered animal and need to be conserved. Even the fox has given birth to pups. The breeding record is as follows-

S. No	Date	Sex
1	04-04-1983	1 Male 2 Female

Jungle Cat – The environment in the zoo is suitable for Jungle cat. In the master plan the present leopard enclosure II will be modified to accommodate the small cats. Hence these animals are proposed to be kept in the collection plan.

Leopard Cat – The modified leopard enclosure can be utilized for the leopard cat too. These cats have a breeding history in the park. Hence these can be reintroduced for ex-situ conservation. The breeding history is as follows-

S. No	Date	Sex
1	27-02-1998	1male, 2female
2	10-05-2001	1male, 1 female

Stump Tailed Macaque – It is also called bear Macaque. It is native of southern Asia, mainly found in Manipur, Arunachal Pradesh, Assam etc., The Monkey species of National and International origin have been successfully reared and bred here. Hence reintroducing this species to the zoo has been proposed. The animal was present in the zoo earlier and has performed well in the zoo conditions and bred young ones. The breeding records are as follows-

S. No	Date	Sex
1.	08-1978	1 male
2.	16-07-1979	1 female
3.	15-04-1981	1 Female
4.	09-05-1986	1 Female
5.	22-03-1987	1 Male
6.	22-04-1987	1Male
7.	25-04-1987	1Male
8.	22-03-1988	1 Female
9.	16-06-1988	1 Male
10.	07-04-1989	1Male
11.	12-04-1989	1Male
12.	07-03-1990	1Female

Pig tailed Monkey – Pig tailed monkey is native of Borneo, Sumatra islands. Pigtailed monkey was one of the collections of the zoo earlier. The visitors liked the animal very much. In due course of time may be due to inbreeding depression or some other factors the animal perished from the zoo collection. But the breeding history of the zoo shows that the animal has performed well in these climatic conditions and is fit to be reintroduced in the animal collection. The breeding details are

S. No	Date	Sex
1.	11-04-1977	1male
2.	01-03-1980	1 male
3.	10-07-1980	1male
4.	30-03-1982	1 female
5.	16-06-1986	1male
6.	07-08-1987	1 male
7.	07-10-1990	1male

Squirrel Monkey – The squirrel Monkey in habits tropical forests of Brazil, French Guiana etc. The animal was in the zoo collection of Kanpur Zoo. It has performed well in the zoo conditions. The breeding details of the animal are as follows –

S. No	Date	Sex
1	08-10-1988	1 male
2	02-08-1989	1 female
3	20-09-1989	1 female
4	27-07-1990	1 male
5	19-08-1990	1 male

Mouse Deer - Mouse deer is found in the Eastern Ghats up to Orissa, western ghats, Central India. It prefers the dry deciduous forests. The rocky hills covered with grasses are preferred by this animal. It is one of the very small deer. It is shy and timid in nature. The animal was found performing well in the captivity. The conservation breeding centre for this animal is in both south Indian zoos as well in north inidian zoos. This animal has performed well in Kanpur zoo too. The animal gave birth to fawns. The breeding record of the animal according to the previous records is reproduced below-

S. No	Date	Sex
1	03-10-1981	1 female

Grey Partridge – The Zoo presently have two grey partridges these will be introduced in to the zoo for displaying along with other partridges present in the zoo.

Lady Amherst Pheasant and Golden pheasant - The Zoo presently have two pairs of Golden pheasant in its aviary. Lady Amherst Pheasant and Golden pheasant will be kept in animal collection. These birds have survived and performed well in the zoo. The breeding of the birds was successful. The details of the breeding of these birds are as given in the following tables.

Lady Amherst pheasant

S. No	Date	Sex
1	28-06-2001	1male, 1female
2	01-07-2001	1 male
3	05-2002	4 U
4	12-06-2005	2U

Golden Pheasant

S. No	Date	Sex
1	03-1978	1 female
2	13-05-1982	2U
3	04-1983	1U
4	04-1984	2U
5	06-1984	1U
6	15-04-1985	2U
7	05-1986	1U
8	14-05-2007	2U

New Reptile house is proposed in the master plan period. All the reptiles of the zoo will be placed in reptile section which includes crocodiles, tortoises, snakes and lizards etc.

Some of the reptiles that will be kept in the collection are

Sand Boa
Russell Viper
Cobra
Indian Python
Reticulated Python
Common Indian Trinket
Checkered Snake Keel Back
Dhaman
Elongated Tortoise
Spotted Pond Turtle
Indian Eyed Turtle
Indian Black Turtle
Indian Soft Shelled Turtle
Marsh Crocodile
Caiman
Magar
Ghariyal

The other bird species like Herons and ducks, teals and egrets, storks, Stilts, lapwings will be introduced into the zoo population depending on the availability and after renovation of the water bird enclosure. The breeding history of water birds is very poor in Kanpur zoo, but the adjoining lake inside the zoological park attracts many native and migratory birds every year. The painted storks, Open billed storks, egrets, cormorants etc., breed regularly in it. If the present enclosure is properly expanded and allow for proper expression of their biological behavior there is every chance that the water birds would breed in Kanpur zoo. The present water bird enclosure is small and cannot accommodate many birds. During inspection by the authorities of CZA it was suggested to combine the empty Bonnet macaque enclosure and the present aviary into one so that sufficient space can be allowed for the flying water birds. It is proposed to construct a walk in aviary to accommodate both flying and water birds.

Certain species of Deer which are present in the zoo have the problem of in-breeding due to repeated generations coming from same parentage. Inbreeding causes genetic disorders to creep in and cause genetic problems due to which the individuals are weak and less resistant to disease. Hence mixing of blood from other zoos will be planned and males of chital, sambar, hog deer, thamin, black buck, Barking deer etc will be exchanged with other zoos, so that new blood is introduced.

Apart from the above animals, efforts will be made for the acquisition of other wild birds and animals like Chimpanzee, Orangutan, Kangaroo, Giraffe, Squirrel Monkey, Ostrich, by exchange from Indian and/or international zoos. Proposed collection plan is given in **Table no. 4**

The collection plan is not an exhaustive list of the animals which will be kept in the collection. Collection plan will be reviewed from time to time the animals and birds of species other the ones mentioned above will also be kept if the housing norms permit and the sanction from the competent authority is obtained.

4.3 Description of Lay out plan of the zoo

Kanpur zoological park is one of the well planned and well layed out zoos of India.The enclosures are mainly open type of enclosures surrounded by dry or wet moats.The entire zoo is in a undulating terrain having forest like thick vegetation.This gives the animals a feel of natural forest habitat.The animals are not unduly stressed as the animals of one enclosure are not visible to the animals of other enclosure.The enclosures are screened by natural barriers.

The zoo is located in the north west part of the Kanpur city.The road leading from Nawabganj to Gurudev Palace passes by the side of the zoo.Main gates of the zoo are faced to the road.The gates are situated on the north east side of the park.One gate is used mainly for big vehicles like buses.The other gate is used by pedestrians, bicycles and motor cycles and smaller motor vehicles.

The zoo can be mainly divided in to

1) Reception area having vehicle parking and ticketing windows,
2) Functional area having Administrative building and animal houses.

Both have been separated by a wall and a grill. The outer boundary of the zoo is protected by a wall of 3mts. height.

4.3.1 Vehicle parking - The area in between the main gates and main zoo complex is demarcated as vehicle parking. Space availble for parking of the vehicle is insufficient. There is traffic jam during hloidays causing inconvinience to visitors and zoo management. Hence it is proposed to increase the parking area and construct a new gate for the exit. The parking is managed on contract basis. Annual tenders are taken out and the highest bidder is allotted the contract.The rates for vehicle parking are fixed by the Director before inviting the tenders.

4.3.2 Ticketing windows and entrance gates – On the north west side of vehicle parking the ticketing windows complex and entry gates for pedestrians is situated, and on the north side, the main entry gate for the vehicles is situated.There are three ticketing windows working at present and these are increased on national holdays to accommodate more visitors.Ticketing windows have electronic ticketing machines.The vehicle parking and ticketing windows are separated from the animal houses and zoo by a wall on eastern side and by grill on the west side.

In the lay out plan of the zoo, description of the zoo is given in three headings

1) Existing structures and enclosures
2) Enclosures to be renovated
3) New enclosures to be created.

4.4.1 Existing structures and enclosures-

4.4.1.1 Administrative Building, Store and kitchen - From the main entry gate the road leads to administrative building.It is the office of the Director, Kanpur Zoo and is located on the north east side of the park.The administrative building has Director's room, two big halls for the clerical staff, a record room and two rooms for the range officers and a range office. Administrative building is being renovated

Kitchen and commissary buildings are behind the office.The commissary building has two big halls and a kitchen. One of the halls is fresh stores, where the grossaries/ fruits and vegetables come around 8.30 am to 9.30 am. The other hall is for the dry stores, where dry grains are stored and feed is mixed. Facility for storing feed for about fifteen days to one month is also available in commissary section.

4.4.1.2 Monkey section – In the monkey section very first enclosure is that of Hamdryas baboon enclosure (empty at present)- it is a wet moated open enclosure, Bonnet macaque enclosure and Golden Langur enclosure(empty at present) is an island type open enclosure,

Kapigruh - Capuchin monkey, White throated Capuchin Monkey etc.,are in the “Kapi gruh” enclosure.The Kapigruh enclosure has 7 closed cells with small houses behind.The enclosures are provided with ropes for exercise.In this section a shade for Elephant is also available.At present no elephants are present in the zoo.These enclosures are situated along the northern side of the park.

4.4.1.3 Birds section – The main road further leads to Pakshi lok, which is the enclosure for water birds. Presently painted storks, grey pellican, little egret, grey heron, night heron, bar headed goose, grey lag goose, pintail etc., are present in it.This enclosure needs expansion.These enclosures are on the northern side of the park. A walk in aviary is proposed to be constructed so that more space can be made avilable to the birds to express their natural behaviour and visitors can observe the birds from close proximity.

An aviary is existing in which mainly the pheasants are placed along with some parakeets and lorikeets. A new pheasantry is proposed to be constructed to display only pheasants. The present aviary will be expanded and modified to give more space to the birds and make it attractive.

A peacock enclosure is present on the side of aviary. Presently common peacock and white peacocks are kept in two different enclosures. New enclosure will be constructed by the side of avairy and the peacocks will be shifted to it.

4.4.1.4 Omnivore/Carnivore section – In this section the tiger enclosure, leopard enclosures are mainly situated along with a Himalayan Black bear enclosure, sloth bear enclosure, hyena enclosure and small carnivore enclosure. A Rhino enclosure, is also present along with other carnivores indicating the associated species of tiger. The enclosures need regrouping for satisfying the principle of taxonomical classification . Sloth bear enclosure will be shifted to the side of Black Bear enclosure. Rhino enclosure will be shifted to the other side of the road where the area is marshy and woody in nature.This area will resemble the natural habitat of the Rhino. Asiatic Lions and Leopards will be shifted to the new enclosures to be constructed in the area available after the demolition the present enclosures of sloth bear and rhinocerous. Thus an exclusive block for asiatic carnivores will be formed in a loop like road. The present leopard enclosures will be modified to house small carnivores.

4.4.1.5 Hospital – Adjoining the north wall, Hospital complex with inpatient wards for herbivores and carnivores, post mortem room,Operation theatre, X ray

facility and a lab are present. Hospital needs renovation and modification, which is proposed to be taken up during the next financial year.

4.4.1.6 Deer and Antelope (Herbivore)section – The north west and western boundary is dominated by herbivore enclosures. The herbivore enclosures at present have Sambar, Hog deer, Barking deer, Spotted deer, Black buck, Thamin, Sikka deer, Chowsingha are in this section. This section also has a sarus enclosure. Sarus enclosure has been constructed here keeping in view the the area available to develop large green grass which gives the area the look of a wetland and marshy area.In the herbivore section a caiman enclosure is present which will be shifted to reptile section.

At the same time southern side also has the deer and antelope enclosures.Swamp deer, black buck, blue bull enclosures are present on this side.

4.4.1.7 Reptile Section – This section at present has Crocodiles, ghariyal.

One Muggar enclosure is present infront of nocturnal animal house. This will be shifted to reptile section, and other enclosure is present on the eastern side of the park and is situated on the western bank of the lake. Along with muggar enclosure crocodile enclosure is also situated.

4.4.1.8 Exotic animal section, aquarium and Nocturnal animal house – These enclosures are placed in the middle segment of the park.Presently the exotic animals available are Orangutan, Chimpanzee, Hippopotamus, Emu . Adjoining Zebra (presentlyempty) enclosure a very big African lion enclosure is present. A Giraffe enclosure is present in the exotic animal section but at present is used for keeping excess spotted deer.

The fish aquarium is constructed in the shape of a tortoise and has 36 aquaria in it having 36 different species of fish like barbs, sharks, tetras, gouramis,etc.,

The nocturanal animal house is in the shape of a cave and at present has barn owl, toddy cat and porcupine.

4.4.1.9 Prehistoric animal section – This is an overlapping section.In three different locations the models of prehistoric animals are erected.One near the Himalayan Black bear enclosure is Diplodocus, one near the sambar enclosure is Tyranosarus and the one near the Emu enclosure is the human evolution board showing various primates.

4.4.1.10 Herbivore safari – The eastern side of the park has a very long lake.To the east of the lake the forest patch has been converted in to herbivore safari with a view to keep all the free ranging spotted deer in it. This will be opened for the morning walkers. The area has developed itself to a self sustaining ecosystem with

about 300 deers, a large number of crocodiles, many snakes like python, cobra; many birds including peacock etc. It will be an educating experience for the visitors especially students to visit the jungle and see the flora and faune in the wild. It is proposed to allow visitors in groups accompanied by guides into the safari, for them to enjoy the forests and wild life and learn about ecosystem.

4.4.1.11 Lake Ecosystem and its Management

The zoo has a large lake covering 18 hectares. The lake is surrounded by heavy vegetation consisting of Chilbil, prosopis, Simal, Neem etc. These trees provide excellent place for the birds to nest. International migratory birds and national migratory birds nests here during different parts of the year. The lake which once received fresh rain water, latter turned into a cesspool due to the uninterrupted flow of the city sewage from Sharda Nagar and Geeta Nagar colony of Kanpur city. Recent water quality test done have shown that total coliform count and e-coli count was above the acceptable limits. In spite of this very heavy pollution of the lake, fish is available in plenty and it support avian population. More over this area is well protected from poaching and other biotic interference.

But population of the crocodile has increased manifold during recent years. Because of crocodile, avian population, especially that of swimming birds has reduced drastically over last few years. The lake and the wilderness around it are ideal place of conservation of bird species. Hence following management practice is proposed .

1. The lake will be fully drained out and the lake bottom will be dried for at least 3 weeks. The top soil having heavy pathogen will be excavated and removed. The soil will be mixed with lime, bleaching powder and/or other disinfectant.
2. Crocodiles present in the lake will be caught and released in wild,
3. The lake will be filled with fresh water obtained from Jal Nigam and different fish species belonging to the Indo-gangetic plain will be introduced systematically. Technical help of scientific institutions like National Bureau for Fish Genetics Research (NBFGR), Lucknow will be availed.

The unpolluted lake will become the conservation hub for the indigenous fishes of North India. This genetic fish diversity will induce avian diversity as the lake provides food for a variety of bird species. Lake without crocodiles will be the best place for swimming birds. Fruit tree will be planted in the vacant places in the jungle to

augment the food base of birds. This area will be ideal place for bird watching both by foot and by boat.

4.4.1.12 Visitors amenities and entertainment section -

This is an overlapping section.Visitor's amenities are spread in the entire area of the zoological park.They are

1) **The children park-** The children park is situated near the main entrace.It has swings and other play items
2) **Elephant park** – It has the model of a horse which has stairs.The children climb on to it and play.
3) **Lawns** – There are 13 lawns in the park. One at the entrance, one at the Director's office, one at the monkey house, one at the aviary,one at tiger enclosure, one at the leopard enclosures, one at the sarus enclosure. All these lawns have grasses in it.The other lawns which are present but are barren are Elephant park lawn, monkey park lawn, Nocturnal animal house lawn, Zebra enclousure lawn,Orangutan enclosure lawn and aquarium lawn. As the name suggests these lawns are located near to the respective animal enclosures.
4) **Toilets** – There are altogether five toilets with urinals and lavatory facilities for both ladies and gents.All the toilets have water facility.There are four toilets constructed by zoological park and they are situated near tiger lawn,near barking deer enclosure, near chowsingha enclosure and near zebra enclosure.One toilet has been constructed by Sulabh international. Four more toilets are proposed to be constructed.
5) **Kiosks & Canteens** – There are two kiosks, one near the tiger lawn and other near Chowsinga and Orangutan enclosure.Presently the kiosks are managed by Parag Dairy Development Corporation through their agents on profit sharing basis. More Kiosks and canteen will be put up for the benefit of visitors.
6) **Hand pumps** – On the whole there are 12 hand pumps.One near pellican enclosure, one near Store and kitchen, one near monkey house, one near kiosk - 1, one in the hospital, one near sambar enclosure, one near the aquarium, one near barasingha enclosure, one near muggar and crocodile enclosure, one near zebra lawn, one in the herbivore safari and one near chimpanzee enclosure. In adddtion to them taps are available in various places.
7) **Rain water shelters** – There are eleven cement concrete Rain water shelters and three tin shades located in various places.They are located near Monkey park, Monkey house, Tiger lawn, Sambar enclosure, Blackbuck enclosure, Nocturnal house,Thamin enclosure, Sikka deer, Chowsingha, Aquarium, Barasingha, Muggar and crocodile, Emu enclosure and Zebra enclosure.

4.4.2 Enclosure to be renovated-

The following enclosures require renovation to accommodate and give more space for the animals.These enclosures have been listed in the same order as the sections

4.4.2.1 Monkey section – In the monkey section some of the open enclosures are to be renovated to introduce new animals in to it.Steps will be taken to convert the wet moated enclosures in to dry moated enclosures.The space of the seven cells of the Kapi grih enclosures are to be expanded and a keepers gallery has to be constructed.

4.4.2.2 Exotic animal section, aquarium and Nocturnal animal house –The fish aquarium to be renovated to include big aquaria so that the fishes get sufficient space to move.

The nocturanal animal house to be renovated to add chain link fenced enclosures to provide the animals their biological needs, fresh air and sunlight.

4.4.2.3 Visitors amenities and entertainment section -

This is an overlapping section. These are spread in the entire area of the zoological park.

1) **The children park** The swings have to be repaired and new play items to be added.
2) **Lawns** – The lawns which are present but barren are Elephant park lawn, monkey park lawn, Nocturnal animal house lawn, Zebra enclousure lawn.Orangutan enclosure lawn, Aqurarium lawn.Which will be revived.
3) **Toilets** –Repair of all the toilets will be taken up.Each toilet to have the facility for handi capped persons. Four more toilets are proposed to be constructed.
4) **Kiosks** – There are two kiosks one near the tiger lawn and other near Chowsinga and orangutan enclosure.These have to be improved. More Kiosks will be put up for the benefit of visitors.
5) **Hand pumps** –Taps are available in various places but these are in very bad shape and the pipelines are old.These have to be repaired and renovated.Power is a regular problem. The power cut will be for about 6 to 8 hours in a day.To have continuous drinking water facility more handpumps are proposed. RO plants at various places are proposed to be set up for providing safe drinkin water to the animals and visitors.
6) **Rain water shelters** – Eleven Rain water shelters are available in various places.These will be renovated and beautification of the shelters will be taken up.

4.4.2.4 Omnivore/Carnivore section- The tiger enclosure to be expanded by including the existing sloth bear enclosure.Squeezer cells of the Himalayan black bear to be repaired.

The leopard enclosure II which is located near the leopard lawn to be renovated to make it fit for the small carnivores such as jungle cat, fishing cat etc.,The specifications of enclosure size according to CZA guidelines and the enclosure sizes of kanpur Zoological park are given in **annexure VIII**

4.4.3 New constructions proposed-

Administrative Building Store and kitchen – The administrative building will be renovated and more rooms will be constructed to accommodate Biologist and Education Officer and Range Officer (Protection), Control Room and staff of the society.

4.4.3.1 Monkey section – In the monkey section the otter enclosure will be retained. A monkey island to be created near to the Kapigrih enclosure.

4.4.3.2 Birds section – New Pheasantry with eight pens will be added to accommodate the pheasants and provide them with proper housing according to the space norms suggested by CZA.

In the aviary the height and the dimensions of the pens will be modified.Schedule 3 & 4 birds and exotic birds will be kept in this section.

An enclosure for vultures will be constructed to conserve the endangered and rescued vultures.

A walk in aviary will be constructed including the water bird enclosure, adjoining Bonnet macaque enclosure and nearby area. This enclosure will have about 2ha. area and the height of the enclosure will be such as to allow free movement of the water and wading birds.

4.4.3.3 Omnivore/Carnivore section – In this section the tiger enclosure, leopard enclosures are mainly situated along with a Himalayan Black bear enclosure, sloth bear enclosure, hyena enclosure and small carnivore enclosure. A Rhino enclosure, is also present along with other carnivores indicating the associated species of tiger. The enclosures need regrouping for satisfying the principle of taxonomical classification . Sloth bear enclosure will be shifted to the side of Black Bear enclosure. Rhino enclosure will be shifted to the other side of the road where the area is marshy and woody in nature.This area will resemble the natural habitat of the Rhino. Asiatic Lions and Leopards will be shifted to the new enclosures to be constructed in the area available after the demolition the present enclosures of sloth bear and rhinocerous. Thus an exclusive block for asiatic carnivores will be formed

in a loop like road. The present leopard enclosures will be modified to house small carnivores.

4.4.3.4 Hospital – A large zoo will have two doctors (one doctor on contract as animal nutrituon specialist and second on deputation for rescue operations). Another room to accommodate another two doctor will be constructed. Present X Ray room is very small and a full fledged X Ray room and processing room will be constructed.

4.4.3.5 Deer and Antelope (Herbivore)section –The present rhinoceros enclosure to be shifted to the opposite side to accommodate sufficient space for allowing the animals to mate. An enclosure for Bison will be constructed Opposite to the Blackbuck enclosure.

4.4.3.6 Reptile Section – Presently the zoo does not have a Reptile house. A Reptile house for ten reptiles will be constructed to accommodate snakes and lizards etc.,The Crocodile and Ghariyal to be properly accomodated to keep all the reptiles in one place. Enclosure will also be created for the turtles to keep proper representation of reptiles.

4.4.3.7 Herbivore safari/Rescue centre – Efforts will be made to soft release the free ranging spotted deer in to the forest areas after due screening of the animals according to the guidelines issued by the CZA. Till that point of time a big enclosure for the free ranging spotted deer will be created and the males and females will be separated for the population control.

Now a days the monkey menance is growing in all the cities.Repeated request by the district administration for accomodating the rogue monkeys creates a problem for the zoo administration.To address this problem a monkey rescue centre for 20 monkeys is proposed near herbivore safari and wilderness area.

Over the years the population of Leopards in the forests is growing up due to the protection offered by wildlife protection act.Thus in due course man animal conflict has become order of the day. Whenever such incident happens the rescued animal ends up in zoological parks. To cater to the needs of such animals a rescue centre for leopards is also proposed.

4.4.3.8-Conservation Breeding Centre for Barasingha, Rhinoceros Sarus and Red jungle fowl - Kanpur Zoological park is a conservation breeding centre for Barasingha and participating zoo for Rhinoceros. Sarus is a state bird and is becoming endangered day by day. Similarly Red Jungle fowl is found only in the Sal forests of UP. An off display conservation breeding centre will be created in the herbivore safari and wilderness area of the zoo for Barasingh, Rhinoceros, Saurs and Red Jungle fowl and Thamin deer.

4.4.3.9 Visitors amenities section -

This is an overlapping section. These are spread in the entire area of the zoological park.

1) **Zoo train**

Kanpur Zoo is spread over 76 hectares and a have road network of 8 kilometers. More than 4 hours is needed for the visitors to see all the animals housed in 55 enclosures. This is very tiresome for many visitors, especially aged people and children. Many avoid visiting zoo due to this difficulty. Many of those persons visiting the zoo leave the zoo half way because of exertion due to tiresome long walk. In order to attract more visitors to zoo and facilitate tireless and enjoyable viewing of all animals, Government of Uttar Pradesh has decided to establish zoo train and has allotted necessary funds for its establishment. Initially a proposal for lying out of 3.5 kilometers of railway line starting from the entrance and across the lake was submitted to Central Zoo Authority. CZA after detailed examination gave permission for lying out of 2.5 kms. of railway line for this purpose. The main railway station was proposed to be near Tiger enclosure. This alignment required felling of about 241 trees. Morning walkers and nature lovers have protested against the felling of the trees and petitioned CZA against this. CZA asked for the realignment of the railway line so that minimum numbers of trees are felled for zoo train project. Different options were presented to CZA. Out of this CZA has sanctioned railway line passing opposite to Tiger, Leopard (Existing), Sambhar, Cheetal, Blackbuck, Khanna Pulia, Fish House, Swamp Deer, Magur-Ghariyal, Ostrich (Existing Zebra), Hippo, Chimpanzee enclosures with 3 railway stations. Main railway station is opposite to the present Leopard enclosure, the other being near to Nocturnal House and Hippo enclosure. This arrangement will allow the visitors to board and get out of the train at different stations for leisure and enjoyable viewing of the animals. CZA has permitted the use of battery operated locomotive for the train. Hence Zoo train will run using battery operated locomotive.

2) Rain water shelters – Four new rain water shelters will be constructed.More dust bins and benches are to be constructed.The dust bins will be placed in such a way that atleast one dust bin is available at every three hundred meters, so that the visitors can properly dispose off waste materials without littering the zoo. It is tiresome to cover the entire area of the zoo on foot, because the circular road of the

zoo is around nine kilometes.Hence Benches to be created along the pathways under the shade of the tree.The rain water shelters will be appropriately placed in between the existing rainwater shelters so that more places of shade are available to the visitors and this also helps in avoiding bigger congregations and avoid disturbance to animals.

3)Toilets- Number of visitors are increasing year by year. So it is proposed to construct four more toilets at convinient places for the use of visitors.

4) Zoo Canteen- Zoo has a large area and it takes about 4 hours for the visitors to see all the animals in a proper way. Students from colleges and schools also come in large numbers. Out side food is discouraged by the zoo administration. So visitors are put to great diificulty because of lack of refreshments inside the zoo. It is proposed construct 2 new canteen and a few food kiosks inside the zoo for the convenience of the visitors.

4.5 Proposals to address the inadequecies and shortcomings addressed in the appraisal

While describing the present setup of the zoological park in part I to the master plan various sections of the park, the present situation and the constraints are described. In the following paragraphs the strategy to address these constraints and inadequacies have been described,

4.5.1 Administrative Section

The Administrative Section will be under the direct control of the Director of the Zoological Park. Presently the technology is developing very fast and new developments are coming up every day. To keep pace with the scientific developments and for proper in put on the design and maintenance of enclosures and for the proper development of visitor amenities and recent technological developments in education and awareness materials, the existing system of draft man designing the enclosure and giving his technical inputs is not sufficient. For these specialized jobs, consultants are necessary.

The consultancy services will be out sourced. So that right person for the right job can be chosen. Hence proper provisions are made in the master plan for out sourcing the consultancy services.

A Curator of ACF rank is posted by the state of Government and he is discharging the duties of the curator. Presently the Education Officer and Biologist are posted on contract basis. Efforts will be made to get these posts sanctioned by the state and persons appointed on permanent basis. Similarly two compounders and one lab assistant are to be placed for proper medical attention of the zoo inmates.

Present staff position and the proposed staff position of the Zoo is annexed as **annexure-V**

4.5.2 Animal Section

The Animal Section is the most important section of any Zoological Park. Species to be displayed in the Zoological Park have been identified in the Collection plan.

Attempt is made to provide bigger, open and naturalistic enclosures for most of the species with suitable moated barriers. Other types of barrier like chain link mesh fence, glass or cement concrete wall shall be used wherever it is necessary.

All the enclosures shall be provided with adequate protection to the animals against climatic variations. Keeping the biological, physiological and psychological needs of the individual species the enclosures are proposed.

Certain animal enclosures are not according to the specifications given under the guidelines of CZA. The enclosures of Leopard, Tiger, are lesser than the specifications. Provisions have been made in the master plan for renovating the enclosures.

For the animals to retain its natural instinct, Enclosure enrichment is proposed, in which various articles such as logs, playing materials, swings, termite mounds etc., will be provided in the enclosures of Chimpanzees, monkeys, and birds. Wooden balls in the enclosures of Bears, machaans and branches of felled trees in the enclosure of Leopards, etc. are proposed.

Adequate provisions for kraals are made in the plan for isolating the aggressive member of the group, so that members of the group get protection. At present many enclosures have Kraals and few more are proposed.

The kraal also helps protect expectant mothers, injured animals and young ones. Such separation will help in elimination of any problem of in-fighting, cannibalism or rejection.

Certain animals such as Blackbucks, Spotted deer, Sambar are breeding prolifically due to the proper protection and habitat provided to the animals and hence they have increased in numbers. According to the norms prescribed by the CZA the herbivores should not be more than 15 to 20 in an enclosure. Presently the number of spotted deer and Nilgai are more and hence their population has to be controlled. In one enclosure spotted deer have been separated by means of chain link fencing. Males have to be placed on one side of the fence and females on the other side. Separation in the above manner or other methods like vasectomy can be tried for animal birth control.

A very good aviary is present but area and height available for the birds are small. Hence the enclosures will be modified and a separate peasantry with proper dimensions will be constructed exclusively for the peasants.

In last few years pheasants have bred very well and their no proliferated and have crossed the carrying capacity of the enclosure. Presently breeding has been stopped in them and exchange of the pheasants is resorted to. Breeding in Emu also is stopped and exchanging the birds is a top priority for the zoo.

Potable water supply should be ensured to all animal enclosures, feeding cubicles and bathing ponds. As both summers and winters are very harsh in Kanpur, proper measures are taken for protecting the animals from the extreme hot and cold. Provision for coolers and heaters is made in the enclosures of animals like Tigers, Leopards, Lions, Bears, Chimps, Orangutans, Birds, and Apes etc in the master plan. Khus mats are arranged in the enclosures of the above animals during summers.

The modification and improvement of existing enclosure shall be taken up as given in the Schedule of Operation.

4.5.3 Veterinary Section

Veterinary hospital of Kanpur Zoo Park has a dispensary room, portable X-Ray unit, operation theatre, in– patient wards Quarantine ward, postmortem room, nursery for hand rearing the orphaned animals. For disposal of carcasses the zoo has a small crematorium (incinerator), which is just sufficient enough for disposing off the hospital waste like gloves, cotton swabs etc. and can be used for cremating the very small animals.

The following additional amenities are to be provided to make the Veterinary Section more responsive and for catering the immediate needs of animal health care, they are:

- A new quarantine ward for bigger cats with suitable restraining facilities for examination and treatment of animals.
- At present the dead bodies of the animals are disposed of by burying/ burning them. This does not appear to be the proper arrangement and it goes against to the guidelines of CZA. There is a strong need for proper incineration system. A suitable incinerator should be constructed at the next to the post mortem room for properly disposing of all the dead bodies in order to prevent contamination. Till that arrangement is made a proper platform with shade is to be constructed for cremating the animals by burning in all seasons.
- A pathological laboratory should be established in the Zoo immediately. At present fecal samples, blood smears, urine, skin scrapings etc. are sent to different labs for clinical examinations. For having standardized and quick results the Zoo must have a pathological lab of its own. Further it is also proposed to have diagnostic facilities in the Zoo hospital/ lab for parasitic diseases.
- Kanpur Zoo Park has an animal Health Committee. Presently certain members have migrated hence a new committee is proposed. The members would be from Mathura veterinary college, local doctors and zoo veterinarians. Apart from them the Zoo is getting services from veterinarians of Lucknow Zoo, and experts from IVRI, Bareilly.

Though the Zoo has one good library, the veterinary section shall have a small reference library with publications containing papers on treatment of different diseases in wild animals and books on the subject.

4.5.3.1 Identification of animals

As the individual animal history cards and treatment cards are being maintained for each and every animal in the Zoological Park, it is worthwhile to give identification mark to each animal. Transponders will be placed to all the bigger animals and all the birds shall be ringed in a phased manner. Permanent records of these shall be maintained by the Animal, Veterinary and Research sections.

4.5.4 Commissary Section

A separate Commissary Section already exists in the Zoological Park for procurement and supply of food and other consumable store to the animals. The section is near to the administrative building and has one meat house and a dry ration store and a kitchen. Cooked food is given to some species and L.P.G is used for cooking the food. Meat, vegetables and fruits are procured on daily basis. A deep freezer is purchased for storing meat and other commodities for emergency. Dry ration is stored in the store.

Presently the Food is distributed in tractor a closed food distribution van and fodder is distributed in tractor. Quality of water from the tube wells is not good. Hence steps are being taken to supply RO water to all animals for drinking purpose. Felids are presently given only RO water for drinking. Food is given to animals only after thorough inspection and certification by the zoo veterinarian. The section is headed by Ranger and is assisted by two cooks and food distributors. This appears adequate.

4.5.5 Sanitation section

Sanitation Section is a very important section in the Zoo as lot of solid and liquid wastes are generated every day from the animal enclosures and elsewhere in the park. Unless a suitable arrangement is made for its day to day disposal, it will be difficult to keep the Park clean and pleasant. Hence, necessary infrastructure needs to be developed. It is essential to provide a complete sewage disposal system, series of dustbins, cleaning and disposal of garbage by transporting it outside the Park and sweeping on daily basis is required. The public toilets need proper and regular cleaning. To achieve these besides the manpower, equipment should also be made available from time to time. Use of polythene etc is completely prohibited in the Park. Composting of bio – degradable waste should be done. Compost and the manures so generated may be used for the lawn and gardens.

13 Sweepers have been placed in the section and are reporting to the Range officer (Administration). For the working convenience, the Zoological Park has been divided into 11 sanitation beats each manned by a Sweeper. Two sweepers act as

relievers. The staffs are becoming old and retirements of many are on cards. Regular replacement of the staff through recruitment is to be taken up.

4.5.6 Garden Section

The Zoological Park is located inside the beautiful man made forests has a lot of natural vegetation existing within the premises which lends greenery to the Park. Natural regeneration in the Zoo is severely hampered because of the grazing pressure from the free ranging Spotted Deer. The spotted deer are causing compaction of the soil and soil erosion. This phenomenon leads to uprooting of the big trees and denudation of the soil. Monkeys and Langurs are also causing great damage to the vegetation. They uproot new saplings and also damage existing trees and plants. Porcupines are another source of damages. It damages mid size trees and plants due to their borrowing habit. Proper strategies have to developed to green the Lawns and increase the density of vegetation in spite of this heavy biotic pressure.

Population Control of Free ranging Spotted Deer- Keeping the above factors in view, following three methods can be adopted

1. Segregation of males and females.
2. Bloodless surgical castration of spotted Deer
3. Soft release in to the forest areas to improve the prey base.

Segregation of males and females of spotted Deer: it is proposed to close about 5 hectares of area and fence it with chain link fence, and put all the female spotted deer in it and allow to males to roam free in the deer safari to control the population explosion.

Bloodless surgical castration of spotted deer The male spotted deer of sexually mature age can be surgically castrated in the operation theatre of Veterinary Hospital, Kanpur Zoological Park. Several males have been castrated.

The animal will be tranquilized with Xylazine0.6 ml +Ketamin 1 ml. it required another shot of Xylazine 0.5ml + Ketamin 0.5ml.will be given 15 minutes after the first shot. The deer will sedate in about 10 minutes.

The deer will be put in the Dorso-Ventral recumbent position after the site is prepared aseptically. An incision of 2.5 cm. in the middle of the scrotal sac is to be placed and skin and tunic will be incised. The spermatic cord at one side will be pressed with hemostat and legated with sterilized absorbable thread at two points. The spermatic cord is cut in between the ligations. The testis will be squeezed out from the incised area. Same procedure is to be adopted for the removal of the other testicle. The wound will be closed with the help of continuous sutures and dressed antiseptically. Parentral therapy with long acting antibiotic and anti-inflammatory drugs is to be done. The deer to be revived with Yohimbine (REVERZINE), intravenously. The follow up to be continued orally, this is the proposed method and improvements will be done after

Soft release in to the forest areas to improve the prey base, Another way of reducing the deer population in the zoo is the soft release of the spotted deer in to the forest areas .The spotted deer present in the zoo park will be screened for diseases and then they will be transported to forest areas where the prey base is less. This would reduce the biotic pressure in the zoo and add to the prey base of the forest area. This is the permanent solution for the free ranging spotted deer.

Before the aimals are released in to the wild the followings pre requisites of Central Zoo Authority are to be followed-

1. Capacity of wildlife habitat at the release sight to accommodate and support the released animals and their progeny on a sustained basis, without adversely impacting the population of other species inhabiting the area.
2. Capacities of the animals that are being released to adopt itself in the wild to fend itself successfully.
3. Mitigation/ redressal of the factors that have been responsible for the dcecline in the size of the in-situ population of the species/extinction of the species from the area.
4. Release of the animals not posing / having a potential to pose any physical or health hazard to the local human population and their livestock.
5. Acceptability of the release program to local population.
6. Availability of trained and dedicated man power to execute the preparatory phase, carrying out planned and successful release and conducting post release monitoring of the released animals.
7. Commitment of the government to support the program and provide finances and other resources on a sustained basis for various phases of the release program.

Strategy for succesfful release of the zoo bred/ Captive bred animals in the wild

1) **Preparatory phase**

a) Biological

- Assesment of taxanomic status of the animals earmarked for the release and ensuring that they pertain to the same species/ race that is naturally occuring/ occurred in the area.
- Assesment of the critical needs of the species to be released including habitat preferences, intra specific variations and adpatations to the local ecological conditions, social behavior, and group dynamics, home range shelter and food requirements, foraging and feeding behaviour, predators and diseases etc., Overall to have and analyse a firm knowledge of the natural history of the species to be released.

- ❖ Species if any, that has filled In the void created by the extinction of the species for the area and effect of the release on the status of the population of that species.
- ❖ Determining the optional number of animals that can be released each year and most appropriate period for the release.
- ❖ Evaluation of previous releases of the species and identification of the problems, mitigation of which is crucial, and priority areas which need to be attended for making the release successful.
- ❖ Choice of release site
- ❖ The site of release should have a habitat that has all the biological attribute necessary for sustained survival of the released animals and their progeny and have adequate carrying capacity to accommodate the released animals and their progeny. As a result no releases of zoo bred/ captive animals should be done inadequately stocked habitat.
- ❖ The area of release should have assured long term protection against all the factors that can inhabit the future propagation and healthy growth of the population of species released.

b) Suitability of the stock for release

- ❖ Animals for release in the wild should be drawn out from the planned conservation breeding programme being carried out under the supervision of the central zoo authority.
- ❖ Animals selected for the release should be thoroughly screened for their biological, behavioral and genetic health in accordance with protocol development by the National Referral Centre and LaCONES. No animal that is found lacking in any of the prescribed standards should be selected for release.

2) **Release of Zoo bred/ Captive bred animals in the wild**

The animals earmarked for the release should be initially shifted to specially created enclosure near the release site which has all the attributes of the wildlife habitat in which the animals are to be released to give them time and opportunity to acquire necessary information and skills to survive in the wild, through training, by experts if so required. They should be released in the wild when their behaviour becomes comparable with their wild counterpart.

3) **Socio – Economic- Legal Requirments**

- ❖ Socio economic studies should be made to assess the impacts, cost and benefits of the proposed release to the local population.
- ❖ Through assessment of the attitude of the local people to the proposed release project should be made and their apprehension if any, should be properley redressed. No release of the animals in the wild should be made against the wishes of the local people.

- ❖ Public awareness programme about the benefits of proposed release should be made both through print media and electronic media.

4) **General**

- ❖ The execution of all the phases of the release programmes should be carried out under the supervision of multi disciplinary team of experts.
- ❖ Long term and short term indicators for quantifying the success of the release programme should be identified.
- ❖ Detailed programme for all the phases of the release should be developed so that each stage can be meticulously implemented in planned and scientific manner.
- ❖ Necessary vaccinations against local endemic and epidemic diseases should be given to all the live stock that is likely to share the habitat with the release species.
- ❖ Transport plan should be so prepared and executed that minimal mortalities take place during transport.
- ❖ Appropriate orientation and training programme should be organised for all the persons involved in the release programme.

5) **Post release activities**

- ❖ Continued demographic, ecological and behavioral studies on released animals should be done both through direct(telemetry/ monitoring movements) and indirect methods (information provided by local people).
- ❖ Status of adaptation of the animal in the wild should be regularly assessed and desired interventions should be made wherever necessary. Released animals should be retrieved and brought back to the captive facility in case the intervention do not succeed despite all efforts.
- ❖ Habitat protection/ restoration and enrichment should be done wherever necessary.
- ❖ Continued evaluation of the success of the programme with reference to identified parameters and results should be published in scientific journals/ popular literature.

Guidelines for transport of captive wild animals

1. Animals in good health only should be transported.
2. Pregnant of females which have recently given birth should be avoided for transport.
3. Infants and too young, incapable of feeding themselves should not be transported unless prior arrangements have been made for taking all due care for the same.
4. The antlered animals in velvet should not be transported.

5. The animals should be separated from the herd, if needed sufficiently in advance before transport for assessing the health conditions.
6. Related health certificates should accompany animal while transportation.
7. Dimensions of the transportation containers for mammalian species should be such that the animal is not be able to turn around or to some Sault.
8. Transport container should be preferably of local material. For many animals, the preferred material will be timber but such materials as bamboo, hardboard and metal may often be suitable for the construction of Transportation cage. For transportation by Air, fibre glass transportation cage are preferred as these are light in weight.
9. The floor of the container should be made with removable liquid proof trays under the slatted floor. The slatted construction should be so designed and constructed that the spacing between slates is such that there is no danger of the animal's feet becoming trapped.
10. It is important that all transportation containers should have inner surfaces which are completely free of any projecting nails, screws, ends of mesh or any other sharp material, which could cause injury to the animal. There should not be any sharp edges. Moreover, if any wood preservative or paint is used on the container, it should not be toxic or a skin irritant. Cages should also be padded with rubber pads to save the animals from injury.
11. The transportation container should have adequate air circulation at all times. There should be additional ventilation by means of holes of suitable size in all walls of the container.
12. Suitable lifting handles or griper bars should be provided.
13. On long journeys, the animals should be provided suitable bedding materials such as straw and hessian pad.
14. Arrangement for feeding and watering as per the requirement of the species and duration of the journey should be provided.
15. The animals which might have been sedated before their transportation should be transported only under the supervision of a qualified veterinarian and details of sedation should accompany the animal. Partial sedation in some of the species and individuals when recommended may also be resorted to during transportation
16. The handling of the animals during transportation should be avoided to the possible extent. The animals should be disturbed as little as possible during the transportation.
17. The transportation of the animals should be avoided during extreme weather conditions like day time in dry hot summer and nights during winter.

18. The transportation cage should be secured fully to avoid any possible movement or sliding during transport. It is very important to ensure that the transportation cages are kept horizontal throughout journey.
19. The animal should be accompanied by a qualified veterinarian and required number of keepers having experience and training in handling individual animals.
20. Every care should be taken to avoid unnecessary discomfort, behavioral stress or physical harm to the animal while crating and transporting.
21. While transporting the animal, due screening of the staff involved in transportation of animal should be made and it must be ensured that they are not infected of any such diseases that can infect the animal.
22. The accompanying veterinarian should carry all necessary drugs, medicines, first aid kit, restraining equipments and drugs, which may be required during emergency. In the unlikely event of animal sustaining injury during transportation or falling sick, there should be arrangement in the cage for handling the animal for treatment.
23. Arrangement for carrying water sprayers, buckets, additional ropes etc., should be made and tools for temporary repair of the cages may also be carried during the transportation.
24. It is preferred to transport one animal per container. Except birds and mother with baby.
25. The animals avoid feeding while transportation. It is advisable to properly feed the animals along with required supplement before crating and transportation.
26. The senior most person accompanying the animal should carry sufficient money and should have authority to spend the same to meet any unforeseen emergency during transportation.
27. Certificate from the concerned zoo consigning the transportation should accompany the animal and it should be mentioned that no taxes etc., should be paid and vehicle should be detained. This will ensure smooth transportation without any hindrance.

Once the zoo is made free from the free ranging spotted deer, fruit bearers and shade givers can be planted on a large scale and protected. Apart from it the lawns also do require face lift. Lawns are to be re-laid and maintained properly, so that the Zoo fulfills CZA obligations of being visitor friendly and green lungs for the areas where in they are located.

It is further proposed to plant shrubs, climbers in the animal enclosures, and near to the barriers. Care is taken to camouflage the cemented structures, so that Zoo guests will get naturalistic feelings while viewing the Zoo inmates.

The section has a sanctioned strength of 10 Gardeners. Most of the gardeners are aged or ill trained. Garden section has to be strengthened by recruiting more persons and training the gardeners. Modern equipments have to be purchased and provided to them for the efficient maintenance of the lawns and gardens. The gardeners have to be trained in landscaping and grafting techniques also. Gardeners have been placed under the administrative charge of the Range officer Administration.

4.5.7 Education section

Educating the Zoo guests on various aspects like conservation, animal behavior, habitats etc. forms one of the important objectives of the establishment of zoos in India and this component has to be given due importance in the Zoo Management. The animals that are exhibited in Zoo are the ambassadors of their wild counterparts. The visitors after their visit to zoo should go back with empathy for wild animals, both in captivity and in wild. Hence the following steps are needed to be taken up during this plan period.

- An interactive, touch screen system be installed, which will provide good education opportunity for the visitors.
- A Souvenir shop for selling curios of the Park, photos, slides, stickers and the other nature related artifacts like paper weight, caps, T shirts etc. should be established near to the ticketing counter at the exit gate. This will not only help people to associate themselves with Zoo and its activities by having a nostalgic remembrance of their visit to the zoo but also help the Park to get some revenue.
- Signages are the best means of educating the visitors. They should be properly designed, and be made more interesting with pictures. Guide maps and directional board should be displayed at strategic places in the Park.
- Publications like guide books, brochures, checklists, stickers, pictures, postcards, newsletters and activity reports of high quality, should be taken out at frequent intervals for educational awareness of the public.
- Animal keepers should be trained to act as Zoo guides for the animal which they are taking care of. Zoo outreach activities to schools and educational program for teachers, students, different organizations and media to be organized.
- The auditorium should be used for regular film, video slide shows or lectures etc.
- The website of the zoo park will be updated.
- All the plants / trees should be labeled with botanical, English and local names with their uses.
- The existing library should be suitably upgraded by procuring related books and journals on regular basis.

Today zoological gardens/zoos provide an opportunity to open up a whole new world of curiosity and interest in the natural world and sensitize visitors regarding the value and need for conservation of wildlife. Zoos were initially started for the entertainment of people. Gradually over the years, they have come to play an important role in conservation. The ultimate goal of zoos is the conservation of animals

The sheer mass visitation to zoos makes them excellent institutions to increase public awareness of the irreplaceable values of nature. **Education is therefore an essential conservation task of zoos.**

The zoo is visited by a large number of people from different strata of the society. Zoo education program, therefore, should be directed towards widely diverse groups, not targeted only towards children. People from a variety of educational institutions take advantage of zoo facilities and thus form specific target groups for formal education. Such educational institutions range from nursery schools to universities. Because of the diversity of audiences for zoo education, great skill, creativity, and inventiveness is required of zoo educators, as is the use of a wide variety of educational techniques. Consequently, zoo education must continue to become a profession in its own right.

An inexhaustible array of biological and other themes can be explained through zoo education. These include classic themes such as animal adaptations, behavior, reproduction, and nutrition, and also more complex subjects such as evolution and ecology. Conservation themes are of special importance in zoo education program. Program can explain how the subtle balances in natural habitats and ecosystems are disturbed by human interference, and impact of human consumption and modern lifestyle on the survival of different species and biological systems. The zoo should provide opportunities for advanced research on animal behavior outside their habitat, animal nutrition, enclosure enrichment for the benefit of the animals in the zoo, ecosystem of the wild area, ecosystem of the lake, arrival and breeding pattern of the birds nesting on the tree surrounding the lake etc.

The maintenance of high standards of animal housing and husbandry, resulting in optimal well-being and natural behavior of zoo animals, is also crucial to effective zoo education. Additionally, exchange of scientific knowledge, information, and expertise between zoos in all parts of the world will enhance the effectiveness of the global zoo network for conservation education.

For achieving the above objectives the Zoo education program should aim at:

- Optimum utilization of Interpretation Center in Zoo to provide a pre-visit orientation to the visitors and to function as an Education Centre of the Zoo.
- Providing interpretive facilities for visitors coming to zoos, like on-site information through Signage, wayside exhibits facility signs and Zoo map.
- Developing publications and relevant Zoo literature like Zoo brochures, guides, manual, handbook etc. These could serve as good learning material

for students and teachers and also provide interesting information for the other visitors.

- Organizing training program aiming at developing skills for education in zoos for zoo staff.

Interpretation program aim at converting the visit of increasing number of people to zoos, national parks and heritage sites into an educational opportunity, enhancing and enriching the visitors' experience by providing information through a variety of media like

- Signage
- Exhibits
- Models (two dimensional and three dimensional)
- Interpretation Centre
- Nature Trails
- Publications
- Organizing events like wildlife week, earth day, foundation day etc

4.5.7.1 The Existing Educational Facilities in the KZP

4.5.7.1 (a) Display boards/ Signage

Four different types of signage are in use and will be further strengthened in and for the Zoological Park. They are directional signage, interpretative signage, knowledge signage and warning signage.

The **directional signage**s are installed at different place in the Zoological Park for guiding the tourists to and inside the Zoological Park.

The **interpretative signage** is in use in front of animal enclosures giving different scientific information and details about the animals in the Zoological Park.

The **knowledge signage** gives knowledge about nature and animal kingdom and enriches the visitor.

The **warning signage educates and warns** the visitors on Do's and Don'ts in the zoo.

4.5.7.1 (b) Interpretation Centre

In the campus of the Zoo there is a Nature Interpretation Center. The main purpose of this Nature Interpretation Center is to impart to the visitor information about animals, their habitats, biology and threats to their existence. An array of biological and other themes like animal adaptations, behavior, reproduction, and nutrition, and also complex subjects such as evolution and ecology will also be explained in the interpretation center.

4.5.7.1 (c) Park Literature

At present the Zoo literature is in the form of small booklets on the Zoological Park, and it needs updating. Efforts will be made for having fresh booklet on the Zoological Park and its animals. Post cards size photograph of all the zoo animals, calendars and souvenirs etc. will be created for sale to the Zoo visitors

4.5.7.1 (d) Visitor's routes

Because of the sheer size of the Zoo (about 75 hectares) a definite visitor's route has been identified and accordingly directional signages have been placed for the convenience of the visitors.

4.5.7.1 (e) Nature trails

800 meter long nature trail has been developed to take the visitors in to the herbivores safari. Separate leaflets will be printed for the same showing different aspects of the nature trails. Only organized groups of the visitors will be allowed to use the nature trails that too with the assistance of the Zoo staff.

4.5.7.1 (f) Films and Slide shows

The Auditorium cum meeting hall is in the interpretation center and it is equipped with audio visual equipments like TV, Computer System Over Head Projector, Slide Projector, LCD projector, Black Board, Screens etc. along with required furniture and sitting arrangements. All the equipments have become old and need replacement. There is a good collection of films and slides for organizing shows for the organized group of visitors in the Zoological Park but unfortunately they are not compatible with present electronic gadgets therefore the entire infrastructure available at interpretation center has to be revamped to make it fully functional and interesting to the public.

4.5.7.1 (g) Annual reports

Annual Reports of the KZP provide good lot of information regarding the achievements and constraints of the previous year. It also gives the success stories of the zoo, the inventory of the animals etc.

4.5.7.2 Future Proposals

- At present there are no advertising signages about the Zoo. It is being proposed to install 15 advertising signage for advertisement at Kanpur airport,

railway station, bus junctions and other important places in Kanpur city for attracting more visitors to the Zoological Park

- The Kanpur Zoo Park houses one natural lake, which attract a large number of migratory birds. Work will be undertaken to shape the lake and make it a second home for the migrating birds.
- It is expected that the improved water quality will attract large number of birds and draw many visitors. Taking this as a potential opportunity to enrich and educate the visitors, KZP will develop bird signage for the zoo, which interprets the variety of the migratory and resident birds, their dependence on the water bodies and other unique characteristics. The Signage will be developed both in English and Hindi.
- It is being proposed to develop fact sheet profiles of various animals housed in the zoo in the form of a booklet, to be used by our major target group that is students. This handbook will have further information on information about the zoo, its history, role of the zoo and zoo ethics that visitors need to follow while in the zoo.
- It is being proposed to convert Lake View Building in to a Nature History interpretation centre. Already some models are in it, but the numbers will be increased and the natural history interpretation centre will be opened for the visitor on the week days.
- It is proposed to organize **Zoo school programs** in the Zoo. These interactive nature-learning programs are expected to elicit enthusiasm about the nature and animals among the participants. The zoo can organize the program in such a way that the classroom sessions are followed with field visits to the Zoo. In a year a minimum of 24 programs are proposed to be held in the Zoo.
- The **Zoo volunteers program**, where in the school and college students, who are able to spare considerable time on regular basis for assisting the Zoo in several functions, like visitor education, visitor surveys, animal behavior study, animal house maintenance, animal health care assistance, Zoo sanitation, Zoo store keeping etc. need to be initiated.
- **Zoo friends club** can be another program, where in the friends of zoo can participate in various events to be organized by the zoo and can help in bringing more children to the Zoo. Morning walkers' association of the Kanpur Zoological Park is already assisting in many activities.
- **"Training of teachers"** where in the teachers are given teacher training kits, Pamphlets, brochures, and other resource materials to be used as teaching aid for the dissemination of the information to the school children.

- **Organizing Events:** The concepts of social marketing and social mobilization should be used in promoting the zoo and its activities. Social marketing reflects the view that merely providing information is not enough to change the behavior.

A host of psychological, socio-cultural, political, environmental, and practical factors impinge on the decision making process toward behavior change. New strategies are needed to motivate people to adopt change and take an active part in the conservation effort.

For it the Zoo can organize various events in the Zoo. Some of them can be

1.World Wetlands day- 2nd February
2. International Save Bear's Day- 21nd February
3.World Forestry Day -21st March
4. World Water Day-22nd March
5. World Earth Day- 22nd April
6. International Migratory Bird day- 3rd May
7. World Biodiversity Day- 22nd May
8. World Environment Day -5th June
9. World Oceans Day- 8th June
10. International Tiger Day-29th July
11. Zero Emissions Day- 21st September
12. World Rhino Day- 22nd September
13. Wildlife week - first week of October
14. World Animal Day- 4th October
15. World Habitat day- 7th October
16. International day for Climate Action- 24th October
17. World conservation day -3rd December
18. Indian Zoo Week 1st to 7th December

Points to be kept in mind while formulating future education strategy for the Zoo are as follows

* Since the living animal that is exhibited forms the introductory point, the choice of the species used is of primary concern. The animal chosen must best illustrate the formulated educational objective.
* Exhibit design, the furnishing of enclosures, and the composition of the animal group (of one or more species) within the individual enclosure are important parts of the educational effect. These must help convey the desired educational information about the species.
* The arrangement of the enclosures in relation to aspects such as how they fit into different themes, the atmosphere (as through plantings) and the furnishing of the associated public area also convey educational information.
* Illusions created through the previous three techniques form an educational technique. The feeling of being in a tropical rainforest or desert, and encountering various elements associated with these surroundings, has a great educational value.
* Legible signs with the names and ranges of the relevant animals still form an unmistakable educational element. Expanding the written information with

appropriate sectioning into educational levels, adding illustrations and giving it an attractive form, heightens the educational value considerably, and provides the opportunity to present information on a number of biological features.

* Exhibition of diverse special effects (prepared plant and animal materials, inorganic components, models, artificial products, and so on) in various ways (e.g. glass cases, permanent mini-exhibitions) can add strong support to educational themes.

* Interactive education (touching materials, searching games, question-and answer systems, locomotion experience) can be very effective.

* Audio-visual tools (slide shows, films, videos, audio guides) can present extra information that the visitor may not have the opportunity to learn from observing the living animal.

* Computer simulations and interactive, computerized audio-visual tools (e.g. videodiscs, interactive compact discs) constitute ever growing important media forms that offer great possibilities in zoo education.

* Keeper talks, guided tours, and other forms of verbal information transfer (including information booths, active approach to the public by guides, peeks behind the scenes, etc.), though rather labor intensive, and are very effective.

* Children's zoos and classroom facilities offer good possibilities for activities specifically directed towards children.

* Volunteer organizations greatly increase the potential of education program involving direct contact with the public.

- Special educational opportunities for physically and mentally handicapped people always receive much use.
- Effective education is enhanced when the entire zoo (not only the zoo staff, but also the composition of the animal collection, the arrangement of animal enclosures, their design, visitor routing, etc.) is related to a clear-cut educational plan. Certainly each new or renovated exhibit should have an educational purpose, preferably identified in advance

4.5.8 Research and monitoring Section

The Zoo authorities are receiving information on the animals like their behavior, physical condition, food intake etc. daily from the animal keepers. The Zoo is maintaining the prescribed registers of CZA. There is a perceived need for computerizing this information, so that the basic data generated can be more efficiently used.

Suggestions related to research are as follows

Zoo should record different aspects of wild animal behavior like breeding, feeding, mating, nutrition, health, disease management & environmental enrichment

etc. The produced scientific papers should be freely available to the concerning Zoos and others.

The record keeping of the zoo animals like studbook, animal history sheets should be computerized

The Zoo should collaborate with different Zoos, colleges and universities, Wildlife Research Organizations and other institutions and provide facilities for management oriented research without involving any disturbance or discomfort to the animals.

Software likes "ARKS" is under progress. The software training is done and the animal data is fed in to the computers and uploaded to the ISIS web site. The zoo is already a member of the ISIS and the membership fee has been paid by the CZA for five years."SPARKS" "Med ARKS", "REGASP" and other relevant software are procured for recording of data on international lines.

Research on visitors should be given top priority.

Research is very important, it should not come in the end, and it should be a continuous process. Every bit of observations in the field with scientific analysis is research.

Basic data collection is prerequisite for the formulation of a Management Plan in any conservation unit. An idea of the flora, fauna, weather information, soil, topography, and their interaction etc form basic background information which will dictate the tactic and strategies to be adopted for a successful management. There is no alternative to reliable field data and their subsequent analysis.

Collection of data related to the visitors, their profile, visitor numbers, peak periods of their visit etc. will help the Zoo administrators to administer the Zoo in a better manner.

However, at present in Kanpur Zoo, not much of importance is given on the research related issues and is lacking in some basic amenities related to the research.

The following steps are proposed for strengthening the research activity in Kanpur Zoological Park.

4.5.8.1 Research Laboratory

Unfortunately there is no research lab in Kanpur Zoological Park.

Due care should be taken for the establishment of a research lab with facilities like refrigerator, oven, microscopes and other lab instruments.

Arrangements are made for the collection, storage, packaging and dispatching of different samples/ research materials to different Research/ Analyzing agencies for conducting various tests.

It is proposed to engage research fellows who will be registered with Forest Training Institute, Kanpur or Kanpur Forest Research Institute, Kanpur or any other recognized universities and will be working on different Research topics for

their doctorate degrees. The role of the Zoological Park shall be more as a facilitator in the research program. Research outcomes can be used for the scientific management of the zoos.

4.5.8.2 Basic data collection

Kanpur Zoological Park is following the system of collecting daily animal reports. Zoo keepers report their findings, related to animals and their housings in a prescribed format and submit the same to the Veterinary Officer by 11 A.M through the head keeper. The Veterinary Officer sends the same with his comments to the Director through Range Officer and Assistant Conservator of Forests by noon.

Basic information related to the animal health is being recorded in the treatment cards which are being maintained for each and every animal. Other records which are being maintained in the Zoological Park are animal inventory registers, daily animal diet register, in–patient register, outpatient register, postmortem reports, stud books etc. of the zoo animals.

The data that is collected on various aspects of the Zoo must be fed into computers for analysis and future use. The collected data can be used for the proper future management of the Zoo and for publishing scientific papers**.**

4.5.8.3 Research Topics

Some of the research topics that can be taken up in Kanpur Zoo are

- Animal health and diseases
- Animal food and feeding habits
- Behavioral studies
- Breeding biology
- Architecture & enclosure designing
- Zoo Landscaping
- Lake Ecosystem
- Visitors

A brief on the above topics is as follows

Animal health and diseases

Health of the animals tells us all about the management of the animals in the Zoo. Periodic observations are made about the health of the zoo animals. Scientific analysis of the daily observations made about the health of the animals, treatment given in case of disease, response of animals to the different treatments and other observations made by veterinarian will be of great help in future.

Animal food and feeding habits

Almost all the Zoos worldwide have developed their own animal diet charts depending upon the local conditions, availability of food items and animals kept over there and their condition (pregnant/lactating/ recovering from disease etc) and based on their body weight. Lots of literature is also available about the animal food and their feeding habits. The observations made in the field in the Zoological Park clubbed with already available data can be a very useful study for future management.

Behavioural studies

Projects which involve behavioral observations comprise the bulk of research studies carried out in zoos. Behavioral observations may be undertaken to expand our knowledge of species 'biology' to solve problems or to assess and refine different management techniques.

Study of the animal behavior of the animals kept in the Zoological Park by seeing them from close quarter can be a very interesting and useful research activity.

Breeding biology

A cautious and meticulously planned study of the breeding biology of specific animals can be a very useful tool in the success of their future captive breeding program.

Architecture & enclosure designing

As we are aware that most of the Zoos started as menageries. All the animals were kept in small barred cages. With the increased knowledge about the animal behavior/ biology and our sensitivity towards them, some work has been done in creating modern and more naturalistic animal enclosures and housings to fulfill all the biological needs of the animals kept in the Zoological Parks. It is a developing aspect of Zoo Management.

The zoo architecture has undergone a drastic change in the last few decades as more importance is given to construction of zoos using the locally available materials like rocks, boulders etc which preserve naturalness of the area. The use of natural material and manipulation of vegetation to camouflage and cover the civil works like chain link, moat walls, animal housing, so that the viewer observes the animals and gets realistic feelings, thereby enhancing the viewing experience.

Zoo Landscaping:

Creation of natural ambience in zoo by minimizing the artificial features and by promoting the growth of natural vegetation like trees, shrubs, hedges, climbers in the animal enclosures and outside the viewing area to enhance the natural setting and sylvan surroundings of the Zoo.

The animal houses, chain link fences, dry and wet moats are to be camouflaged with vegetation, which enhances the viewing experiences of the guests of the Zoo.

Lake Ecosystem

Lake in the zoo is spread over 18 hectares. It has about 50 crocodiles and many species of birds nesting on the trees surrounding the lake. An area of 36 hectares is enclosed and left as wild. This area has about 300 free roaming deer. No artificial feeding is done. How these animals survive and their inter dependability in a closed ecosystem is an interesting and important topic for research.

Visitors

Visitor management in zoo has to achieve maximum visitor satisfaction through education and recreation. Visit to zoo should make the visitor a wildlife enthusiast and should develop empathy for the wild animals. Proper educational and recreation facilities shall be provided in the zoo for arousing the interest of the visitors

Collecting the visitor statistics, collecting feedback from visitors and its analysis and evaluation form important aspects of research on visitors.

Information on visitor statistics helps the managers of Zoo in managing the zoo resources in a better way and help in visitor amenities planning. To find out more about the visitors and their opinion in respect to facilities, the Zoo must formulate simple questionnaire for knowing about their feedback and the information thus collected be evaluated.

4.5.8.4 Data storage system and processing

A data storage system is very important for the proper maintenance of records in Zoos, which in turn help in proper management of the Zoo. For proper maintenance of records utility of computers is paramount. All the data collected from the field should be fed into it, which can be processed at the time of need.

Efforts are made for procuring the software like "SPARKS" “MedARKS”, and “REGASP”. Efforts will be made to procure more software for recording of data on international lines.

4.5.8.5 Record Keeping

Good record keeping is very crucial to the main objectives of conservation, education and research of any zoological park. Animal records must be kept current and be date logged.

There are a number of purposes for keeping records like:

- Zoos are legally bound to maintain the records,
- Records help the authorities in species management.

Legal obligations –

It is mandatory to send inventory reports, which include the number of different animals, acquisitions, births, deaths, dispositions, causes of death, to the Central Zoo Authority of India, on a quarterly basis, along with the details of the mortality report.

Furthermore, documentary records of the animals could also be required for the press, media and other interested organizations. Right to information Act has made it obligatory on the part of administration to make available the copies of the records to the person who demands them on payment of requisite fee.

Species management –

The ultimate goal of the captive management of endangered species is to release them into their natural habitat. If this goal is to become a reality, intensive genetic management is necessary to maintain healthy populations of animals in captivity by avoiding or minimizing inbreeding. This is possible only if accurate information regarding each individual's genetic history is available. Therefore, it is fundamental that comprehensive records are kept. This information will serve to facilitate animal management decisions. Importance of maintaining records like stud books has already been dealt.

4.5.8.6 Meteorological data collection

Meteorological data collection has to be made part of the research activities in the Zoological Park. Rain gauge is to be installed in the Zoo. Daily observations should be made on the rainfall, relative humidity, temperature and wind velocity in the Zoological Park.

At present the meteorological data is collected from the observatory of Chandra Shekhar Azad Agricultural University whenever it is needed. The University is located next to the campus of Kanpur Zoo.

4.5.8.7 Collecting Visitor Statistics

Collecting Visitor statistics help the Zoo managers in recreation management and in facility planning. Information on rising trends and about the peak visitor periods will allow the managers in preparing for them.

Many factors which determine a person's enjoyment of his visit to the Zoo are under the manager's control like: Courteousness and efficiency of staff, provision of information, quality and safety of amenities. To know more about the visitors and their opinion about the facilities, programs, and services offered, a simple questionnaire is formulated and feedback be obtained from the guests of the Zoo.

Analyzing the data is very important for taking management decisions, which will help the Zoo managers to manage the Zoo in a better way.

4.5.9 Estate Section

i) Estate Security-

It is very important to keep the Zoo animals, visitors, Zoo staff and their families, zoo property (movable and immovable) safe and secure to make the zoo function properly. The Zoological Park with its vast area is prone to security hazards. The measures that need to be taken during the period of the Master Plan are

- Security regulations of the Zoo should be meticulously followed
- The security staff on duty is provided with search lights and torches for night patrolling.
- Closed circuit cameras to be installed at vintage points.
- Hand held metal detectors and door metal detectors to be installed for proper screening of the visitors.
- Watchtowers and spotlights should be erected at suitable points along the boundary.
- All entries and exits after zoo hours should be guarded for keeping watch of any movement through the entry points
- All the security staff should have proper uniform for both day and night duties with winter clothing and rain coats for different seasons

ii) Estate Maintenance

All the enclosures are maintained properly. All modern carpentry tools, gas welding tools and equipments, electrical tools besides, maintenance tools should be procured for making it available to meet day-to-day requirements.

The zoo has a very good man made forest with valuable species such as neem, Jamun, Shisham, Teak, etc., The zoo is facing heavy soil erosion because of the typical topography of the area compounded by the disturbance of the soil by free ranging spotted deer .This has resulted in the exposure of roots of well grown trees which fall due to wind and heavy run-off. The trees sometimes block the visitor circulation roads and also damage the barriers of the enclosure which may result in the escape of the animals. Hence immediate steps are required to remove the fallen trees so that no damage is done and at the same time the valuable timber is properly marketed to realize revenue. The dry, dead, fallen trees which can be

dangerous to visitors, or cause damage to the enclosures and the animals inside will be marked and handed over to the agency designated by the state government for disposal of trees. Some of the trees such as Prosopis, Chilbil, Babool and other dried trees are utilized for bonfire in the herbivores enclosures during winter season.

4.5.10 Water supply System

Supply of sufficient clean water is the most crucial issue in the management of Zoological Park and it is a big problem in Kanpur Zoological Park, as the power supply is highly erratic. We have a provision for rain water harvesting, ground water recharging and use of liquid wastes for composting etc. has been incorporated.

At present in the Zoo Park, water to the animals and for lawns is pumped from tube wells. The water thus pumped is stored in over head tanks. The water was recently tested for its physical- chemical properties and for pathogen load. It was found that the tube well water is very hard and pathogen load is above the permissible limit. Hence the management has started providing RO water to the felids. This facility has to be extended to other animals and visitors also.

The following measures be adopted by the Zoo authorities

- There has to be a mechanism for testing the purity of water, which at present is not place in the Zoo.
- As water is vital for running the zoo there should be a backup system of meeting emergencies. For it 50 H.P. generators is installed.
- Measures are to be taken for rain water harvesting and recharge of rain water in to the soil, as the Zoo is predominantly dependent upon ground water
- Installation of sufficient number of RO plants for providing pure water to animals and visitors.

4.5.11 Power Supply System

Though power is supplied to the park by the Kanpur Electricity Supply Corporation (KESCO), there is often break down of power supply or low voltage supply thereby affecting the zoo operations. A 50 Horse Power diesel generator set is installed and is operational. Zoo authority has requested the KESCO to provide uninterrupted power supply. They have intimated that with the existing supply line, it will not be possible to give uninterrupted power supply. But considering the sensitive nature of the zoo management they will establish a small substation in the zoo premises and a dedicated line will be provided to the zoo for uninterrupted power supply. This is a great achievement considering the fact that Kanpur has highly erratic power supply and power cut sometimes extend up to 12 hours. Uninterrupted power supply will help in better sanitation, animal welfare and visitor facilities.

Most of the animal enclosures do not have power supply but it is felt that the power should be made available throughout the Park. Power points should be fitted in each of the retiring cubicles to provide lighting during emergency, and making heating arrangements during winter and cooling arrangements during summer.

4.5.12 Roads/ footpath/ trail networks

The zoo has a long circular road of about eight kilometers. The visitors and the vehicles use the same road. Hence pavements are to be constructed for the pedestrians.

There are many pathways and a circular road running in the Zoo connecting all-important enclosures. The arrangements of pathways, roads, facilities, and exhibits are offering an experience that is pleasant, safe, educational, and entertaining.

The Zoo has mainly three kinds of pathways they are

A **primary pathway** having width up to 6 meters is the main road, which accommodates vehicles, pedestrians, wheel chairs etc. Service staff of the Zoo also uses these roads. This road is made more durable by giving black top. Pedestrian path is provided in some places. Proper pedestrian pavements shall be provided all along this pathway with benches, signage and other visitor amenities to ensure enjoyable visitor movement.

Secondary and tertiary paths have a pathway of width of 2m to 4m designed to accommodate less number of people at a time and provide a more personal experience. Direction signage is less in these roads, and the paths are made of wood (wooden bridge), gravel, cobbles, or another material that conveys the character of the exhibit area

4.5.13 Staff Accommodation

Presently there are two housing colonies for the staff. One is adjoining the zoo campus and another is at Kidwai Nagar, which is about 15 kilometers away from the campus. These two campuses put together offer housing for more than 80% of the staff. Quarters for the newly appointed Assistant Conservator of Forests and the remaining staff is to constructed to accommodate them near to the zoo. All the houses need maintenance which has to be taken up during the master plan period.

4.5.14 Vistors Amenities

Amenities for the guests of Zoo are needed to be developed and maintained to make the visit to the Zoo a pleasant and less tiring. Amenities that need to be developed are:

- The Public toilets should be improved and facility for handicapped persons should be included into that.
- Good numbers of shelters with resting benches should be created at proper places in the Zoological Park.
- The Zoo Souvenir shop, refreshment corner, photographic consumables be created.
- Wheel chairs should be provided for the invalid at nominal charges at the main entrance

4.5.15 Mobility

There is one car for use of the Director, in the Zoological Park. An ambulance vehicle for the veterinarian is also a perceived need of the zoo. As it has already been mentioned, a closed food distribution van is important for healthy distribution of food. The tractor fitted with trolley is required for proper disposal of solid wastes far off from the enclosures.

4.5.16 Disposal of dead animals and waste

It is proposed to install a big electric incinerator of sufficient capacity near to the post mortem room for incineration of all dead animals, and excreta.

4.6 Ex Situ Conservation

4.6.1 Current status of conservation in Kanpur Zoological Park

Keeping in view of the responsibilities and national and international obligations bestowed on the Zoological Parks, till today the Kanpur Zoological Park has successfully bred a large number of endangered Indian and exotic species. Some of them are:-

Indian Species: Rhinoceros, Tigers, Leopards, Swamp Deer, Manipuri Deer (Thamin/ Brow antlered Deer), Black Bucks, Chinkara, Muggers, Asiatic Lions etc.

Foreign Species: Orangutan, Hippopotamus, Chimpanzee, Sikka Deer (Japanese Deer) Zebras, Emu, African Lions etc.

Breeding history of some of the animals in Kanpur Zoological Park is annexed to this plan as **annexure-Vl**

Conservation should form a paramount objective of the Zoo. For it the following aspects of animal management form an important component of conservation. They are

- Continuous Monitoring of the condition of animals
- Providing proper food and food supplements
- Prevention of diseases

- Tranquilization –a management tool
- Examination for abnormalities during postmortem
- Having a breeding and collection plan of animals for discouraging inbreeding among the inmates

4.6.2 Conservation Breeding:

Keeping the earlier breeding history in view and the species requirements, Kanpur Zoological park has been selected as conservation breeding center for Swamp Deer.

Barasinga or Swamp deer is an endangered species and is endemic to the swampy areas of the Terai tract of Uttar Pradesh.

As Terai areas are cleared for agriculture much needed swampy areas are diminishing and thus the animal population is reducing and restricted to few pockets. Hence conservation breeding of this animal has been entrusted to Kanpur Zoological Park. At Present on an average four births are recorded per annum.

The present breeding program cannot be truly considered as conservation breeding program as the parentage is not clearly defined. Hence for proper conservation breeding program identification of parentage and prevention of inbreeding is paramount. Thus in the master plan proper facility for conservation breeding has been proposed.

Kanpur Zoological Park is a participating zoo for one horned Rhinoceros. Rhino was reintroduced in Dudhwa national park. The animals were brought from Chitwan national park, Nepal and Kaziranga Assam. The animals were given complete protection. They are multiplying satisfactorily in their natural habitats. To supplement their population ex-situ conservation measures are taken. Kanpur Zoological Park has been chosen as participating zoo. So far the breeding history of Kanpur Zoo is satisfactory.

The area provided for the Rhinos is not sufficient for the nuptial activity. They require much larger space. Hence extension of the enclosure to nearby area is proposed.

Sarus crane is state animal of Uttar Pradesh. This is the largest flying bird in India. It is mostly endemic to the plains of Uttar Pradesh and found in large numbers in Kanpur district and its surroundings. The animal is taken up for conservation breeding with an aim to supplement the population in the wild. Similarly Red Jungle fowl is a pheasant found in the Sal forests of UP. Thus to conserve the bird and to supplement the wild population conservation breeding of the animal has been proposed.

4.7 Wild life Health management-

The following Wildlife health management manual is being prepared for the better management of the Kanpur Zoo, which should be strictly implemented, by the

authorities and staff of the Kanpur Zoo. The health management can be properly categorized in to

a) Preventive measures
    1. Animal hygiene
    2. Animal nutrition
    3. Animal health monitoring
    4. Animal disease prevention
    5. Animal breeding
b) Curative measures

4.7.1 (a) Preventive Measures

1 **Animal Hygiene:**

- Daily cleaning of animal cages.
- Removal of Fecal material & its proper disposal.
- Routine use of Phenyl & other suitable Disinfectants.
- Periodic use of Blow Torch.
- Removal of foreign materials from enclosures.
- Removal of spider webs from animal houses.
- To ensure fresh & clean drinking water supply.
- Use of Antiseptic solutions in bath for Chimps & Orangutan.
- Use of Rat kills in Bird House.
- Use of Mosquito Repellents in Chimps' & Orangutan houses
- Removal of fecal material from various enclosures like- Sambhar, Chital, Hog deer, Barking deer, Thamin deer, Sikka deer, Black buck, Chinkara, Swamp deer, Rhino & Elephant
- Periodic cleaning of water tanks of various enclosures
- Cutting of grasses & weeds from various enclosures.
- Bathing of animals like Rhino, Chimps & Orangutan during summers.
- Feed & water must be supplied to animals in hygienic condition.
- Daily cleaning of water pots and feeding platform.
- Arrangements for fresh & clean water in tanks.
- To ensure proper light & ventilation in animal houses.

(2) Animal Nutrition

- Feeding of fresh & clean food to animals.
- Observation of likes & dislikes of feed for a particular animal.
- Close observation of feed intake & feed left over and changing the quantity of feed for particular animal accordingly
- Feeding of Tonics, Mineral mixtures to animals.
- Feeding animal hygienically.

- Change in amount & quality of feed according to season.

(3) Animal Health Monitoring

- Daily check up of all animals.
- Checking of animals for normal feeding, defecation & urination daily.
- Checking of animals for any wound externally & other abnormal skin lesions.
- Detailed observation of external behavior & gait.
- Observing whether animal is taking interest in his surroundings or not
- Identification of abnormal or sick animal & immediate reporting to zoo authorities.
- Separating the sick animal from group without giving any physical & mental stress to animal.
- Taking large cats like Lion, Tigers, Leopard etc. in squeezer without causing trauma to animal.

(4) Animal Disease Prevention:

- De-worming medicines to be given periodically according to the instruction of veterinary officer with feed & meat etc.
- Helping the veterinary staff during collection of Blood, Fecal & Urine sample.
- Helping the veterinary staff during administration of Prophylactic Vaccines & Drugs.
- Keeping the newly arrived animals in Quarantine & observing the animal for any abnormal condition or behavior.
- Proper washing of hands after handling a sick animal so that infection is not spread amongst other healthy animals.
- Arrangements of health camps for zoo staff once a year to prevent spreading of zoonotic diseases.

(5) Animal breeding

- The male and female (in heat) animals are put together for mating. This exercise is to be done gradually with special precautions and in presence of zoo authorities.
- Avoiding inbreeding.
- Detection of females in heat (estrus).
- Population control to be done by segregation of male and female counterparts in some species like Chital & Black buck.

4.7.1 (b) Curative measures

- Separation of sick animals from the group.
- Informing the veterinary officer for treatment and helping the veterinary staff during treatment.
- Close observation of pregnant animals.
- Recording the dates of mating and dates of delivery in different species of animals.
- Recording day-to-day activity of animals of each enclosure.
- Taking good care of newborn babies.
- Recording the birth & death of animals of different enclosures.
- Helping the veterinary staff during various surgical cases.

4.7.2 Monitoring condition of animals

4.7.2 (a) Body condition evaluation

Body condition evaluation (B.C.E) forms will be supplied to the staff and the B.C.E of inmates of the zoo will be assessed on regular basis. For assessing the condition of dead animals' relevant proofreads for studying the fat deposition in the body will be provided to the Veterinarian

4.7.2 (b) A brief introduction on the B.C.E. and Fat deposition studies

Condition of an animal responds to the changes in its habitat quality, which is governed by many interrelated component factors which are often seasonal in nature (Fig) Though most animals are subjected to many of these factors their effect on the overall health of a population may be *more* apparent in some species or in different age or sex groups of the same species.

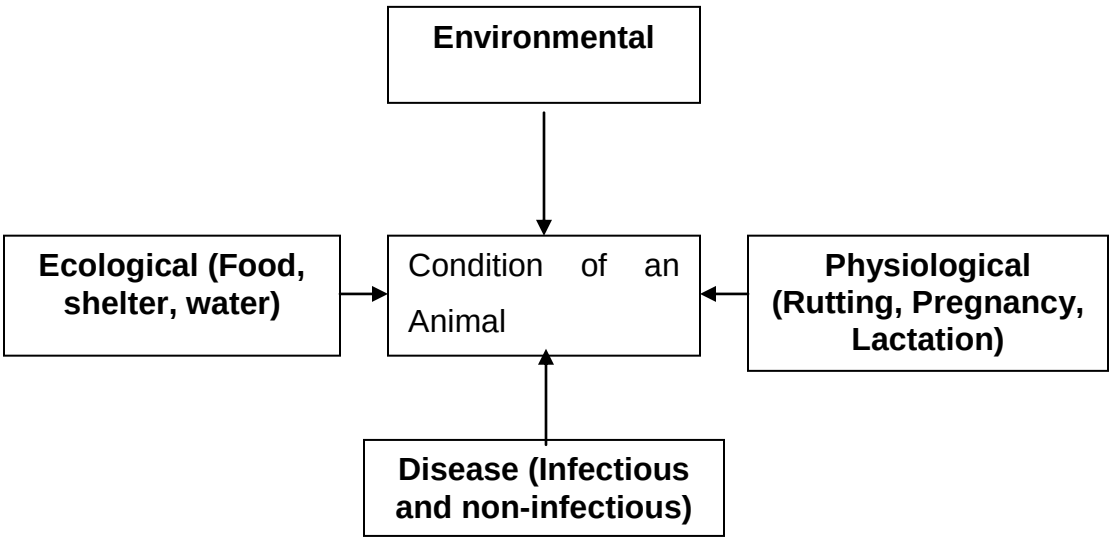


Fig: A complex of factors, which are interrelated, governs condition of animals

The deterioration of condition could be due to nutritional stress, chronic diseases resulting in muscle wasting or natural biological reasons (pregnancy/ lactation in females & rutting in males). Many non-infectious diseases and biological processes, however, leave a noticeable effect on the body condition of animals. Looking at their appearance or body condition we can assess condition of live animals and by estimating the extent of fat deposition in the body one can assess condition of dead animals.

The commonest method of monitoring the appearance of free-living mammals is by body condition evaluation (BCE). BCE is generally expressed in the form of indices. The index can be employed to compare the mean body condition of two populations of a same species, amongst different individuals of any particular age and sex category of a population and between populations of many sympatric species.

BCE involves judging the physical condition of live animals, based on the visual estimation of the degree of protuberance of bony processes on the body surface. These protuberances can be seen on the hip (as processes of pelvic bones), chest (as visibility of ribs), abdomen (as depression of flank area), back {as *depression* on either side *of* the vertebral column i.e. lumbar shelf) head (temporal depression) and on the tail (as visibility of tail vertebrae). In the field, one can rate these body parts using a binocular or a spotting-telescope.

Direct methods of health assessment are crude but easier than indirect methods. They are applicable in situations where trapping and restraining of live animals or culling operations are not practicable. However, the disadvantages are many; the major ones being their limitations in applicability to all species and the lack of precision (Riney. 1960; Riney. 1982). Care should be employed while formulating the criteria for evaluating body condition of different species. One standard criterion of judgment may not be applicable to all species, as good or bad physical appearance could be a species characteristic. Visibility of rib cage for instance is a species characteristic in Indian rhinoceros. Conversely, ribs can hardly be seen even in a poor condition chital. This means, standardization of defining health classification would differ from species to species. This method of BCE has been used to rate the body condition of ungulates and elephants in India (Rodgers, Krishnamurthy). Evaluating the physical condition of a population of carnivores is difficult in the wild because of their elusive, solitary and largely nocturnal habits. However, evaluating an individual when seen is easy. It is not readily possible in birds because of their feathers and in crocodilians due to their thick skin.

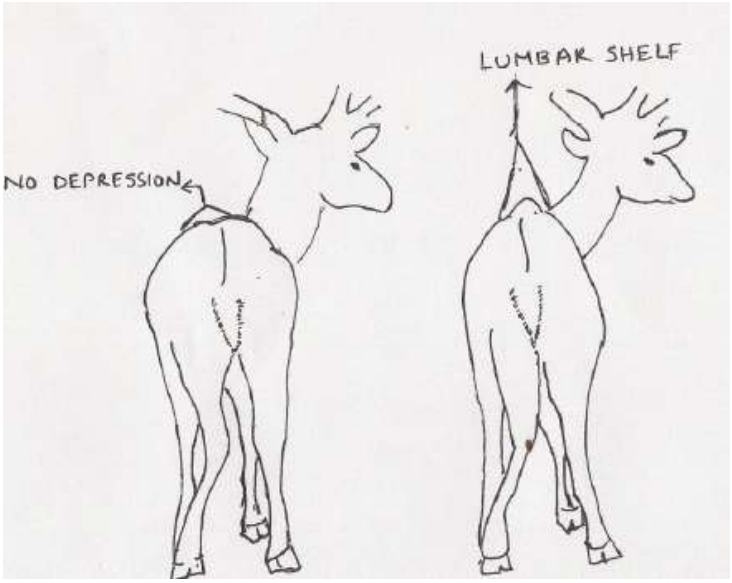
Instead of a mere subjective assessment of body conditions as good, fair, poor or as class-I, class-II, class-III and so on (Riney, 1960), a value of BCI can be obtained by giving scores for different body parts. Records of BCI of different species can be maintained in a specific format. The 'remarks' column is for further classification of animals based on their physiological state (pregnancy. lactation.

rutting. etc.), social status (dominant/subordinate. territorial) feeding behavior (crop-raider, man-eater), etc

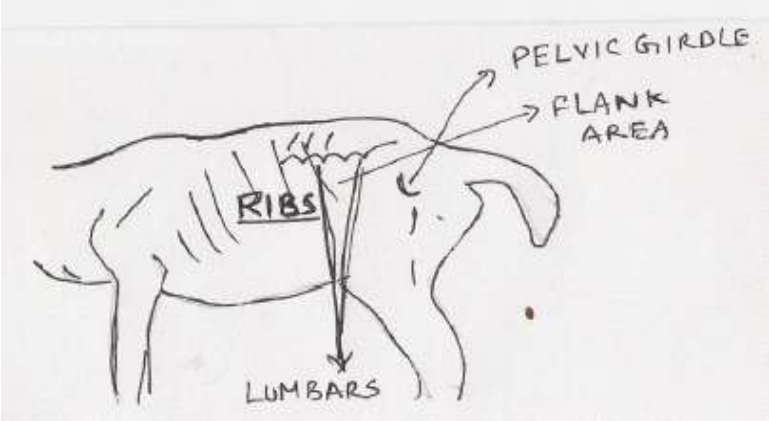
4.7.3 BCE of ungulates

Rinley (1960) described a simple method of BCE for different species of African ungulates largely based on the protuberance of bony processes of hind quarters Body conditions of some Indian species of ungulates in Sariska Tiger Reserve (Sambar. chital and Nilgai) have been qualitatively judged on similar lines by biologists of Wildlife Institute of India Here the method is made more quantitative so that individual animal can have varying values of BCI In ungulates, the key areas of assessment include flank area ribs, points of pelvic girdle, lateral view of the vertebral column and the lumbar shelf. Lumbar shelf refers to the muscular column on either side of the lumbar vertebrae. This part can be better viewed from the posterior of the animal

The following table describes the condition of different body parts and the recommended, scores for the corresponding condition quality as mentioned earlier this criterion of defining condition characteristics may not be applicable for all species and the attributes elaborated in the table are fundamental facets for assessing the physical Condition of ungulates in general.



Picture 2 Condition and Quality of Lumbar Shelf of an Ungulate



Picture 3: Body Parts of a Herbivore for Body Condition Evaluation

Generalized Description and Evaluation of different Body Parts of Ungulates

S. No	Body Part	Point=0	Point=1	Point=2	Score
1	Flank Area	Depression is barely visible. Flank area outline is in distinct	Flank area slightly concave and outline visible	Depression concave and tucked in	
2	Ribs	Thoracic surface is smooth and ribs are difficult to see	Ribs are visible but not all can be counted with ease	Ribs prominent with distinct inter-costal depressions	
3	Pelvic Girdle	Bony projections of pelvic girdle are barely visible	Pelvic girdle outline slightly visible	Bony projections of pelvic girdle are clearly visible	
4	Vertebral Column	When seen laterally, it runs smooth without any breaks. Lumbar processes visible	Lateral processes of lumbar vertebrae are visible but not prominent	Lateral processes of lumbars very prominent. Dorsal processes of vertebrae seen	
5	Lumbar Shelf	No depression in shelf. Appears almost round from behind	Slight depression on either side	Depression deep and concave	

Interpretation:
Score 0-4 = Good
Score 5-7 = Fair
Score 8-10 = Poor

[Adopted from Rinley (1982)]

The scoring for these different body parts would increase with corresponding decrease in condition quality. The sum of total scores (I.e. BCI) can range between 0 and 10. Smaller the BCI, the better the health condition of the animal. For all practical purposes, ungulates with BCI of 0-4 can be considered 'good', 5-7 as 'fair' and those with 8-10 as 'poor'.

4.7.4 Fat reserve estimation in dead animals

Estimating fat *reserves* of naturally dead animals may not always serve the purpose of relating body condition to habitat quality and nutritional quality in case of zoo animals, because death might have occurred due to disease. It can, however, reveal the overall health condition of the dead animal. Fat deposit in the body can be classified as subcutaneous (below the skin), perinephric (around the kidneys), mesenteric, (in the omentum), pericardial (around the heart) and bone marrow fat. Instead of estimating the total amount of body fat, which is a tedious process, these specific fat-deposit sites are taken into consideration for assessment.

Condition evaluation using fat reserve estimation can be done either by a more qualitative method of "subjective field assessment" or by a quantitative method of "laboratory techniques". Emphasis is given here only for the field assessment method, as it does not warrant complicated laboratory procedures. However, materials can be collected, preserved and sent for laboratory methods for assessment.

Kidney, heart, bone marrow, omentum and subcutis are the 5 major areas of interest for ranking fat deposition in mammals. In birds, the gizzard is an important organ for evaluating fat deposition. Seasonal difference in subcutaneous fat deposition is not readily appreciable in ungulates of the tropics.

The following table describes the criteria of assigning 4 condition scores (0 to 3) for six sites of fat deposition. The principle of evaluation is based on the extent of fat deposition in these parts. **The greater the extent of fat covers the higher the condition quality**.

As was done for physical condition evaluation, the scoring would increase with decreasing amount of fat present. As the extent of fat deposition varies from one part to another, it should be borne in mind that the criteria for assigning fat cover categories will differ from organ to organ and this in turn will vary from species to species. This can be standardized after some field experience.

Fat is mobilized in the sequence of rump fat, subcutaneous fat, visceral fat and marrow fat (Harris, 1945). When an animal is losing its condition, marrow fat is the last to be utilized by the body. The principle of subjective evaluation of bone marrow condition is based on its colour and texture. The condition of the bone marrow is inspected usually in ungulates and other large mammals where the

marrow can be sufficiently exposed for evaluation. Femur and humerus are the bones of choice for marrow condition examination.

Criteria for evaluating and ranking different body fat reserves

S. No	Body Part	Score=0 (Good)	Score =1 (Fair)	Score=2 (Poor)	Score =3 (V.Poor)
1	Kidney Fat	More than 75% of the surface with fat	More than 50% but <75%	More than 25% but <50%	Fat Cover less than 25%
2	Heart Fat	More than 75% of the surface with fat	More than 50% but <75%	More than 25% but <50%	Fat Cover less than 25%
3	Gizzard Fat	More than 75% of the surface with fat	More than 50% but <75%	More than 25% but <50%	Fat Cover less than 25%
4	Mesenteric fat	Extensive areas of fat deposit in omentum	Fat deposits present but not very extensive	Mesenteric fat deposits almost negligible	-
5	S/C Fat	Very Thick	Moderately thick	Thin or absent	-
6	Bone Marrow Condition	White in Colour, waxy or firm in texture	Intermediate in Colour and greasy in texture	Watery or jelly like and brown/ red in Colour	-

Based on Rinley (1982)

4.7.5 Feed & food supplements

The Kanpur Zoological Park follows feed charts, which are prepared according to the body weight of the animal, so that no animal remains undernourished. Seasonal changes are made in feed chart according to requirements of the animals. The diet of herbivores animals include different vegetables like Brinjal, Cabbage, Potatoes, Tomatoes, Palak, Carrots etc. different fruits like Banana, Papaya, Apple, Mangoes, Grapes, Orange, Mausammi, Musk melon, water melon etc. Rhino, Deer, Antelopes & Hippo are fed Chari in winter or Barseem in summers. Different carnivores' animals are fed buffalo meat, goat meat & chicken. Meat is daily inspected by veterinary officer. The carnivores animals in

Kanpur Zoological Park are not fed meat on Fridays. They are on fast, once in a week. All precautions are taken to check any infection through feed to wild animals. The vegetables & fruits are first washed by Pot. Permanganate water ($KMnO_4$). It is ensured that minimum of fat remains in meat as fat starts rotting very early and create digestive problems in carnivores. Meat is also dipped in pot. Permanganate water just before it is supplied to wild animals.

Kanpur Zoological Park is preparing its own feed for Deers, antelopes, Rhino, Hippo and Zebra as readymade feed purchased directly from market was not at all nutritious and was of very poor quality. The feed is prepared in zoo itself in the presence of zoo authorities. The feed contains different cereals like, Urad, Arhar, Moong, Lobia, Channa etc. and Khali, Chokar, Jaggery, Mineral mixture powder and Liv-52 Powder in a ratio, which provides a good balanced diet to wild animals. Feeding this high standard feed has resulted in great improvement in general health and breeding of wild animals. Good breeding in Rhino, Zebra, Chinkara, Hog deer, Barking deer, Swamp deer, Black buck and Chowsingha were recorded.

Similarly Kanpur Zoological Park is preparing its bird feed. This feed contains different cereals like Arhar, Moong, Channa, Urad, and Seeds of sunflower, calcium powder and Liv-52 powder. Feeding this high standard feed showed general improvement in health, good quality of eggs and increasing good hatching. Successful hatching of eggs were observed in golden pheasant, Silver pheasant Lady Amherst pheasant, Kaleej pheasant and above all in Emu.

Multivitamins, Mineral mixtures and other feed supplements like Agremin powder, Liv-52 powder are being used with feed daily to prevent the animals from stress and for proper maintenance of animals health. Calcium carbonate ($CaCO_3$) powder and mineral mixture are given daily with meat in carnivores animals. Liver tonics and mineral mixtures are given daily to large herbivores animals like Rhino, Hippo, Elephant and Zebras. Calcium shell powder is being given to egg laying birds. Multivitamin syrup is being used in drinking water in pheasants and monkey house. Liver preparations are used in carnivores animals like Lion, Tiger, Leopard, Hyena, Jackal, Foxes, Leopard cats etc.

In summers' variation are made in diet as more citrus fruits are added in diet of monkeys, chimpanzee & orangutans. Salt licks are provided in enclosures of herbivores animals to provide more minerals and to enhance water intake & to prevent from dehydration.

Special feed is provided for pregnant and nursing animals. Their feed in increased and calcium & other mineral supplements are being increased in diet. Honey is being fed to Himalayan black bear, Sloth bear, Chimpanzee and orangutan.

The Zoo authorities ensure timely supply of wholesome and unadulterated food in sufficient quantity to each animal. The quality and quantity of feed is daily checked by store in charge, Range Officer, Veterinary Officer and Director of the Zoo also.

4.7.6 Prevention of diseases in captive wild animals

One of the important mandates of modern zoos is to display the collection of wild animals and birds in optimum health. However, the most arduous and important task is the maintenance of sound health of the zoo inmates. The job of detection of illness may be even more difficult because sick zoo animals rarely exhibit any clinical signs in the initial stages. Efficient and prompt diagnosis, restraint and treatment are also equally difficult once an animal falls sick. Therefore, individual therapeutic measures especially in an advanced stage of the disease may not end on an optimistic note. The wild animals in zoo suffer from various infectious and non-infectious diseases. The aetiological agents of infectious disease may be bacteria, viruses, Parasites, fungi or rickettsia. Some of these contagions once get a foothold in the zoo premises may be difficult to eradicate and may result in -

(i) Increased morbidity & mortality
(ii) Poor reproduction
(iii) Poor exhibition value of animals
(iv) Possible public health hazard particularly to zoo employees in case of zoonotic diseases.

Therefore, more emphasis is now being given on prophylactic measures which include general hygiene and sanitation, deworming & vaccination schedules and other preventive medicine programmes, to lessen the incidence of diseases especially infectious ones in zoo.

4.7.6 (a) Hygiene & sanitation

In Kanpur Zoological Park feed from kitchen (store) to different enclosures are carried in food carrying drums made up of plastic. These drums are washed and scrubbed daily. No chemicals are used according to CZA norms. A closed food distribution van is being used for better and hygienic way of transporting feed.

At present eggs and milk for chimps, orangutan and Himalayan black bear are cooked and boiled in open condition on Kachha chullha, which is again an unhygienic way of cooking. A hygienic kitchen is constructed but a L.P.G. facility is required for hygienic cooking of food for wild animals.

The sleeping cells (animal houses) are cleaned daily with free flowing water. Removal of fecal material is done daily. After removing the fecal material sleeping cells are again washed with water. Daily use of phenyl in the verandah and other disinfectants (Khorslin TH and Aldasan) is ensured in the sleeping cells. Use of phenyl in contraindicated in the sleeping cells of large cats like lion, tiger and leopard due to carbolic acid poisoning. At present Khorsillin TH and Aldasan (a Glutarldehyde) is being used in large cats. It has been observed that tiles of sleeping

cells of lion and tiger are deeply stained due to acidic nature of urine. These tiles are weekly cleaned by acid. All leftover food items, Bones, animals' excreta and rubbish are removed daily from every house and enclosures and are dumped in a corner of the zoo and is being periodically burnt. The grasses and weeds in enclosures are cut and destroyed routinely so as to give minimum vector load. The hair of big cats, chimpanzee, and orangutan is periodically shed. This hair got struck in bars of cages. These hairs are carriers of fatal bacterial spores. The spores are very resistant. They cannot be killed by disinfectants. Blowtorch is the only way to kill these resistant spores. Use of blowtorch is done twice in a month. Regular dusting of turmeric powder in the sleeping cells of all cats is done. As turmeric powder is Antiseptic as well as anti-inflammatory hence it maintains good hygienic condition of paws of these big cats.

Trays of quick lime are provided in houses of lion, tiger and leopard and all herbivores. It is obvious that when zoo staff enters the animal house they may carry infections along with their shoes. It has been a rule that prior to entrance in house everybody should walk through this quick lime tray so that there is a minimum possibility to carry infectious germs in the houses. The nocturnal house is provided with 8 heavy exhaust fans to remove foul odor and to provide good air to nocturnal animals.

Kanpur Zoological Park is having an incinerator for disposing dead bodies of animals. But as it is of very small size bodies of large animal like lion, tiger, swamp deer, Zebra cannot be disposed off in it. Hence a large sized incinerator is required. Due to irregular electricity supply it becomes impossible to use this incinerator.

Large enclosures have two types of moats - Dry moat and wet moat. These moats help in prevention and escaping of animal besides which it gives a feeling of openness to the wild animal. Proper and routine cleaning of these moats are ensured. The schedule of cleaning moat is as follows:

S. No.	Name of species	Type of moat	Duration
1	Primate	Wet	Once in 3 months
2	Bonnet monkey	Wet	Once in 3 months
3	H. Black bear	Dry	Once in 2 months
4	Orangutan	Wet	Once in 3 months
5	Tiger	Wet	Once in 3 months
6	Rhinoceros	Dry	Once in 3 months

In Kanpur Zoological Park every enclosure has separate big water tanks for drinking and for bathing purposes. It is ensured that these water tanks should be cleaned without using any chemical. Water tanks are cleaned by scrubbing with steel brushes to removed algae. The drinking water tanks are filled daily by clean water. The enclosures of Rhino and Hippo are provided by two types of water tanks

(a) Water tank for drinking and (b) Water tank for bathing. The drinking water tanks are cleaned and filled with clean water daily. The bathing water tanks are periodically cleaned. The schedule of cleaning of water tanks is as follows:

S. No.	Name of species	Duration
1	Pelicans	Once in 7 days
2	Crane	Once in 15 days
3	Rhino	Once in 15 days
4	Sloth bear	Once in a week
5	Hippo	Once in a week
6	Tiger	Once in a week
7	Muggar & Ghariyal	Once in 15 days
8	Swamp deer (Sail tilting of whole)	Enclosure along with marshy land every year
9	Sambhar (Sail tilting of whole)	Enclosure along with marshy land every year

4.7.6 (b) De-worming schedule

Parasitic diseases have a great influencing role on the health status and on morbidity and mortality pattern of zoo animals. Apart from deaths especially in young animals, the parasitic infection, usually make the animal weak and unthrifty with diminished body resistance leading to greater susceptibility to other infectious diseases. In the wild there is hardly any animal without parasites. When such parasitized wild animal is brought to captivity, the zoo environment generally does not favor the new arrival but may favor the parasites due to several factors like stress and confinement. Under such a situation, the parasites get an upper hand to harm the host. It is impossible to eliminate the parasites completely from zoo animals largely because of confinement changed environmental conditions and movements of keepers. Hence attempts should be made to keep the parasitic load in the host animal as low as possible to avoid harmful effects.

Kanpur Zoological Park follows a de-worming schedule. A de-worming schedule consists of planned programme of examination of fecal sample to detect the ova/larval stages of specific parasites and assess the worm load followed by administration of appropriate anthelmentics at regular interval with an aim to lessen the incidence of gastrointestinal parasitic infection in a zoo. The schedule is designed to combat and control common parasitic diseases, which are the cause of frequent ill health and mortality eg. infestation of round worms, hook worms, tapeworms, fasciolosis amphistomosis and coccidiosis. The following factors are usually considered for formulation of de-worming schedule in Kanpur Zoological Park -

- Life cycle and epidemiology of the parasite

- Habits and behavior of the host animal
- Knowledge of prevalence and degree of intensity of various parasitic infestations in different groups of animals like felids, canids, deer, birds and reptiles etc.
- Seasonal incidence
- Age and species susceptibility
- Extent of soil contamination and hygienic status inside the enclosures including shelter houses
- General management practice
- Probable development of drug resistance due to repeated use of same anthelmentics.
- Availability of a safe, efficacious and acceptable broad-spectrum anthelmentics drugs

The de-worming schedule of Kanpur Zoological Park is Summarised in the following table.

Sl. No.	Class of the animals	Months	Frequency/annum
1	Carnivores Animals	January April July October	Four times in an year
2	Omnivorous Animals (Orangutan/Chimpanzee/Sloth Bears And Himalayan Black Bears)	February May July November	Four times in an year
3	Herbivores Animals	March July November	Three times in an year
4	Birds	June October February	Three times in an year

4.7.6 (c) Vaccination Schedule

Vaccine is an important tool in veterinary preventive medicine to control and combat infectious diseases of bacterial or viral origin. Vaccination is commonly

practiced to induce immunity against future invasion by specific diseases among zoo animals. Vaccination schedule is a planned programme of administration of vaccines to different groups of animals to confer immunity against specific infections.

There are two categories of vaccines namely 1) Live vaccines and 2)Killed or inactivated vaccines. The live vaccines commonly known as modified live are the attenuated strains of the infective agents that can induce immune response but cannot cause the disease. The treading of usual path of vaccination in zoo animals will depend upon the following considerations:

- History of incidence, frequency of occurrence, morbidity and mortality due to specific infectious disease in different species of animals.
- Possibility and desirability of vaccination in controlling a specific disease.
- Risk involved in vaccination, which should not exceed the disease hazard itself.
- Kind of immunity desired and safety of the vaccine.
- Frequency and interval of vaccination & whether easily administrable.
- Preferred age of animal at which artificial immunization is desired, as passive immunity in young animals will inhibit the immune response.
- Availability of cold chain facility under field condition.
- Individual biological response to vaccination especially rare, lone & valuable animals.
- Determination of dosage of vaccine administered.
- Possibility of breakdown of immunity under stress conditions like extreme cold, heat, fatigue & heavy parasitosis and chances of the vaccine acting as an agent to trigger the disease in an incubating animal.
- Likely hypersensitive or allergic reactions in some animals.

Kanpur Zoological Park practices the following vaccinations in some species of wild animals as detailed below:

1 Feline Rhinotrachetis, feline calicivirus & Panleukopenia (Fel-o-vax/Biofel PCHR) for large felids and leopard cat.
2 Rabies inactivated live vaccine for canids.
3 Rabies inactivated live vaccine for large fields.
4 Canine distemper hepatitis, Adenovirus, Leptospirosis Parainflenza & Parvoviral modified live vaccine for canids.
5 Ranikhet Disease (lasota strain) modified live vaccine to peafowl chicks, Pheasant chicks and other birds.

Vaccination of large cats and Hyena /wolf is carried out just prior to monsoon annually. Vaccination for Hemorrhagic septicemia (H.S.), Black quarter (BQ) among

herbivores is not practiced in Kanpur Zoological Park as there had not been record of this disease in this park.

The vaccination schedule followed in the zoo is summarized in the following table –

S. No.	Class of animals	Name of vaccines	Month of vaccination
1	FELIDS	*Fel-O-Vax/Biofel PCHR /Defencer/Triquin	June/July annually
2	CANIDS	**DHPPI-L /Defencer/Triquin	June/July annually
3	BIRDS	F1 & F2 strains	0-7 days followed By 10^{th}.day of Previous vaccination

*Feline Rhinotracheitis + Feline Calici Virus + Feline Panleukopenia

**Canine Distemper Virus + Adeno Virus Type-1 + Adeno Virus Type-2 + Para influenza virus + Parvo virus + Leptospira canicola + Leptospira icterohemorrhagiae

4.7.6 (**d) Preventive Medicine Programme**

The scope of preventive medicine entails maintenance of good health, reduction of death due to infectious diseases & their transmission to other healthy animals. The objectives can be achieved by adopting good management and disease control regimen. Besides the programme cannot be a part time process but should be designed to cover the entire period from the time of entry or arrival of the animal into the zoo premises till its final disposition on regular basis. A multidimensional approach is necessary for the well being of the zoo inmates, which may include the following aspects-

4.7.7 Stress

Stress acts as an adjunct in the genesis of diseases. Therefore attempts should made to eliminate or reduce stress factor during routine management practices like cleaning, capture operations, crating, shifting during the process of acclimatization and setting down of new arrivals and introduction of new animals into an enclosure of resident animals.

4.7.8 Breeding Programme

Specimens involved in breeding programme should be free from reproductive disorders and heritable defects. The ill effects of inbreeding such as still birth, congenital anomalies, early mortality, abortion and low innate resistance etc. can be eliminated or minimized by planned breeding.

4.7.9 Traumatic injuries

Traumatic injuries resulting from capture/shifting operations, transfer, fighting during rutting or breeding season/feeding time, fighting due to incompatibility etc. are responsible for about 20%of total deaths in deer and antelopes. In Kanpur Zoological Park it has became a common practice to immobilize or tranquilize deer, antelopes for above discussed reasons.

4.7.10 Neonatal Deaths

Experience has shown that majority of deaths occur within a month of birth/arrival of animals in the zoo. Therefore special attention and care is given to animals in advanced stage of pregnancy and during the first one month in captivity.

4.7.11 Quarantine:

One of the prerequisites of disease control programme of zoo is the quarantine of new acquisitions for a minimum period of 30 days, which may extend up to 3 to 6 months in case of primates. Quarantine, therefore is now mandatory as per "Recognition of zoo Rules-2009" Necessary screening and prophylactic measures are taken up during this period the animal is interned so as to declare it disease free and then only it is allowed to join resident animals. The Kanpur Zoological Park is having quarantine ward in hospital premises.

4.7.12 Isolation

Isolation of resident animals either part time or suspected for any infectious diseases becomes essential to prevent dissemination of infection.

4.7.13 Mass treatment with anti tubercular drugs:

Tuberculosis is common in many zoos especially among primates, deer & antelope. The infected animal remains as a potential reservoir for others in contact animals and man. On most instances diagnosis is possible only at postmortem examination because the animals rarely exhibit typical clinical signs during life. Earlier in Kanpur Zoological Park all monkeys including capuchin monkey Bonnet monkey have been mass treated for Tuberculosis. . Similarly all Thamin deers were also treated by anti tubercular drugs (Isoniazed & Rifampin). But its worth mentioning that the above animals did not eat feed properly mixed with anti tubercular drugs.

4.7.14 Pest control:

In Kanpur Zoological Park there is a big menace of rats in birdhouse. These rats share the feed of pheasants and also are carrier of various infections including deadly plague. Hence periodical exercises are done to eliminate them. Rat kills are also provided around each enclosure. Similarly in the sleeping cells of chimps & Orangutan use of fly mosquito tube is ensured.

4.7.15 Postmortem Examination & carcass disposal

Postmortem examinations provide valuable information on diseases diagnosis, helps to establish the cause of death and in planning preventive measures. In Kanpur Zoological Park an incinerator has been installed. But the size of the incinerator is too small & cannot be use for disposal of large animals and more over irregular supply of electricity is there. So the carcasses after necropsy are properly disposed of by deep burial with lime or burnt in open place. Kanpur Zoological Park also lacks a properly designed postmortem room so the PM examinations are performed in open.

4.7.16 Examination for abnormalities during postmorte

4.7.16 (A) Need for examining

No disease diagnostic operation is complete until the cause of death of an animal is confirmed by laboratory investigations. Conformation can be by observing the abnormalities detected in tissues by histopathological examinations by isolating the causative agent or by the demonstration of anti bodies in the serum.

Once the cause for death of an animal is confirmed the Zoo authorities can go for prophylactic treatment of other animals

4.7.16 (B) Some guidelines for pathological and parasitological examination of dead animals by Veterinary surgeons

Once the veterinary surgeon opens the carcass and exposes the cavities and internal organs, discard the gloves, knife and all other equipments, which may have been used till then. Remember that you are now proceeding to collect specimens for laboratory diagnosis, which has to be carried out under strict aseptic precautions. Record all observations immediately after completion of every body system in the PM record sheet and never rely on your memory. Examine digestive system in the end to prevent spillage of gut contents on other organs. Give a detailed description of every part examined. If no abnormalities were detected in an organ (say liver), mention NAD (= No Abnormalities Detected) and if you did not examine any organ/part (often the head), mention NE (= Not Examined). A separate format can be used for recording endoparasitclogical findings. Keep a copy of both these formats ready before proceeding with the PM.

The following body parts be collected and be subjected for pathological and parasitological examinations for determining the cause of death, so that preventive measures be taken for controlling the spread of diseases in the Zoo.

A. BODY CAVITIES AND SUB-CUTANEOUS TISSUE:

Pathological	Parasitological
Examine sub-cutaneous *area* for bruises & hemorrhages. Burns in the sub cutis could be due to lightning strike. Examine cavities of thorax & Abdomen *for* abnormal amount *of* fluid. Note down Its quantity, color and consistency. If necessary, collect some fluid In a plain vacutainer, tube or test tube.	Look for nematodes & fly larvae on surface. Cysts are found in body cavities of ruminants, usually located close to the internal organs of thoracic, abdominal & peritoneal cavities. Also look for nematodes in body cavities.

B. SPLEEN AND LYMPH NODES:

Pathologically, spleen and lymph nodes are important organs. Examine them for abnormal enlargement. Where there is Infection, these organs get enlarged and there may be even abscesses. In such cases, collect a portion of spleen (or the whole lymph node) in a sterile container. Take multiple samples and preserve in 10% Formalin (for histopathology), in 50% buffered glycerin (for virology) and a few parts under refrigeration/freezing (for microbiology). Borax is an alternative *for* refrigeration. Smears made from cut surfaces of these organs will be useful in diagnosing diseases like Theileriasis (a haemoprotozoan disease).

(C) RESPIRATORY SYSTEM:

Pathological	Parasitological
Look *for* tumors and tumor-like eruptions in the nasal passage. Open trachea and bronchioles. Look for presence of mucous & blood. Examine lung, note for Colour and consistency Look for nodules which may be due to tuberculosis or cysts. If present, note down the proportion of lung affected. Lung is an important organ of abnormality for many diseases	Nasal and tracheal passages may harbor nematodes. Occlusion of respiratory passages by heavy lungworm infection is a possibility. When cut pieces of lung are left in a basin of water *for* 15 minutes. The worms will sink to the bottom (Ahluwalia, 1972). Lung Is also an important organ to look for cysts. One should be able to differentiate cysts form tuberculosis nodules. While TB nodules area extensive and small, cysts are soft, larger and contain larvae.

D. Liver and gallbladder:

Pathological	Parasitological
Examine liver for Colour, consistency and abscesses. Slice the liver at a number of places to detect any hidden abnormalities (hemorrhage pus). Also look for tuberculosis nodules	Look for cysts on the liver and in the liver while slicing through. Open the gall bladder and bile duct for liver flukes. Sometimes nematodes and tiny adult tapeworms can be found.

E. HEART AND BLOOD VESSELS:

Pathological	Parasitological
Note the amount, Colour and consistency of pericardial fluid. Peel off the epicardium, examine heart surface for pale areas, blood tint, cysts and necrosis. Expose heart chambers and note down the nature of blood (clotted or partially clotted or unclotted). Heart blood is an important diagnostic material Collect whole blood in case of suspected poisoning and for microbial isolation. Partially collected blood is good for serum separation.	Look for cysts in heart muscles of ungulates and heartworms in heart cavities of carnivores. Look for nodules or ulcers in all-large blood vessels (LBV) close to heart. Filarid worms can be seen embedded in LBV close to heart. Blood flukes may be present inside blood vessels. For blood protozoan, Which cannot be seen with naked eye, blood smears have to be made *for* procedures of making blood smears

F. DIGESTIVE SYSTEM:

Examination of the alimentary canal is an important part of PM examination as it includes many organs, beginning from Oesophagus to rectum. Besides, invariably most carcasses have helminth parasites in stomach and intestines. While their presence undoubtedly suggests an infection, it does not necessarily mean that the animal is diseased. As far as possible organs of the digestive system should be examined last to avoid spillage of gastro-intestinal (GI) contents. For easy and systematic examination of GI tract, tie a knot at either end of the tract '(one on the proximal end of oesophagus and the other at the distal end of rectum). The GI tract can now be examined separately either by removing wholly or (preferably) in parts by tying more knots (between stomach and duodenum, and at ilea-caecal junction in order to separate large and small intestines).

Pathological	Parasitological
Oesophagus: Open the passage and look for occlusions by foreign bodies, ingesta and tumours. Examine the inner wall for abnormalities	The inner wall of the oesophagus may have nematodes, which are usually embedded sometimes in a nodule.
Stomach: In the case of ruminants, note the Colour, consistency and amount of rumen contents. If necessary collect some. Examine reticulum for foreign bodies. Abomasum in ruminants and stomach of non-ruminants are important sites of pathological lesions. Examine the inside of stomach for inflammation, hemorrhagic spots & other abnormalities. If required, preserve cut pieces of stomach in different preservatives.	In ruminants look for rumen flukes attached to the inner wall of rumen. Flukes may also be present in abomasum and intestines. Stomach of non-ruminants and carnivores (and abomasum of ruminants) may have a variety of nematodes. Make note of their approximate numbers and collect,
Small intestine: Empty the contents of duodenum & ileum separately into clean containers. Cut open the passage throughout the tract and examine the inner wall for hemorrhagic streaks, spots and other lesions	Examine the intestinal contents and the inner wall for endoparasites. Note their abundance, and collect few specimens. Collect 5 gm of the contents in 10% Formalin and 5 gm in 2.5% potassium
Large intestines: Empty the contents	Large intestines may harbor nodular

of caecum, colon and rectum into different containers. Examine both contents and inner wall these parts for abnormalities	worms, whipworm, hookworm and sometimes flukes (in ruminants). Preserve faeces for ova and oocyst examination as described for intestinal contents.

G. UROGENITAL SYSTEM:

Pathological	Parasitological
Kidneys: Examine by stripping off its capsule, Note its consistency (soft/firm/pulpy). Look for abnormalities like hemorrhagic spots and abscesses on the surface. If you notice any abnormality. Collect & preserve in different preservatives.	Cut through the kidneys and look for cysts and kidney worms.

Urinary Bladder: Examine whether it is full or empty Collect Urine samples (i) in case of suspected poisoning. (ii) Death due to capture myopathy and (iii) for demonstrating eggs of kidney worms. Add no preservatives. A urine smear can be made for demonstrating the presence of microscopic organisms. Open bladder and look for lesions. Preserve selected parts of 'bladder in 10%formalin if necessary.

Genital organs: In case of females, examine the uterus for pregnancy. If not, open the tract for scars at previous implantation. In cases of abortion collect uterine fluid and endometrial tissues, including cotyledons and caruncles, for microbiological examination. Examine ovaries for cysts. Similarly examine male reproductive organs also.

H. HEAD, BRAIN AND NASAL CAVITY:

This part is sometimes left without detailed examination. If rabies is suspected however send the whole head packed in ice to the laboratory. If the head is too big, open the cranium and send the brain under refrigeration. If the diagnostic laboratory is very far, divide the brain in to two equal halves along the midline. Preserve one half in 10%formalin and the other half in 50% buffered glycerine. While the former can be used for histopathological diagnosis the latter can be used for diagnosing rabies by Fluorescent Antibody Test (FAT) or by mouse inoculation. If gross pathological lesions are found in the brain, one half (In 50% buffered glycerine) can be sent for diagnosing rabies and the other half can be subjected to further investigation.

Pathological	Parasitological
Examine brain for abscesses and hemorrhages. Disarticulate the lower jaw and examine for tooth wear.' Examine gums, tongue and buccal mucosa for ulcers	Expose the nasal passage and look for bot fly larvae. Examine eyes for eye-worms. Cut through tongue for cysts. If necessary, brain can also be examined for nematodes& cysts.

I. MUSCULATURE:

Pathological	Parasitological
Shoulder or thigh muscles have to be examined in case of black-quarter (BO) disease. Samples are essential for bacteriological examination if BO is suspected. Necrosis of skeletal muscles is a PM finding in capture myopathy (a non-Infectious disease associated with capture of much wildlife).	Musculature is an important part to look for cysts. Cut through muscles. Particularly muscles of jaw, loin, shoulder and thigh of ruminants and swine for cysts. If cysts are present, make note of the location (muscle name) & indicate the number of cysts found. Besides cysts, muscles may also have tiny nematodes.

Table NO. 4

ANIMAL COLLECTION PLAN														
S. NO.	SPECIES	PRESENT STOCK IN ZOO				OPTIMUM NUMBER PROPOSED				ANIMALS TO BE ACQUIRED OR REMOVED				REMARKS
		M	F	U.S.	TOTAL	M	F	U.S.	TOTAL	M	F	U.S.	TOTAL	
	INDIAN SPECIES													
	1- MAMMALS													
	(A) CARNIVORES													
1	ASIATIC LION	1	1	0	2	2	3	0	5	1	2	0	3	
2	ROYAL BENGAL TIGER	4	2	0	6	2	3	0	5	-2	1	0	-1	
3	LEOPARDS	7	5	0	12	2	3	0	5	-5	-2	0	-7	
4	JACKALS	4	4	0	8	2	3	0	5	-2	-1	0	-3	
5	STRIPED HYENA	1	3	4	8	2	3	0	5	1	0	-4	-3	
6	INDIAN WOLF	0	0	0	0	2	3	0	5	2	3	0	5	
7	INDIAN FOX	0	0	0	0	2	3	0	5	2	3	0	5	
9	TODY CAT	1	1	0	2	2	3	0	5	1	2	0	3	
10	LEOPARD CAT	0	0	0	0	2	3	0	5	2	3	0	5	

11	JUNGLE CAT	0	0	0	0	2	3	0	5	2	3	0	5	
12	CIVET INDIAN LARGE	0	0	0	0	2	3	0	5	2	3	0	5	
13	CIVET INDIAN SMALL	0	0	0	0	2	3	0	5	2	3	0	5	
14	MONGOOSE	0	0	0	0	2	3	0	5	2	3	0	5	
	(B) HERBIVORES													
15	BLUE BULL	3	5	9	17	6	9	0	15	3	4	-9	-2	
16	BLACK BUCK	6	11	0	17	8	12	0	20	2	1	0	3	
17	SPOTTED DEER	17	46	2	65	8	12	0	20	-9	-34	-2	-45	
	SPOTTED DEER (FREE RANGING)	89	246	34	369	0	0	0	0	-89	-246	-34	-369	
18	SAMBHAR DEER	5	5	9	19	8	12	0	20	3	7	-9	1	
19	HOG DEER	2	3	8	13	6	9	0	15	4	6	-8	2	
20	BARKING DEER	3	3	0	6	4	6	0	10	1	3	0	4	
21	CHOWSINGHA	1	1	0	2	4	6	0	10	3	5	0	8	
22	THAMIN DEER	8	12	13	33	8	12	0	20	0	0	-13	-13	
23	SWAMP DEER	9	8	15	32	8	12	0	20	-1	4	-15	-12	
24	CHINKARA	0	0	0	0	2	3	0	5	2	3	0	5	
25	GAUR	0	0	0	0	2	3	0	5	2	3	0	5	
26	RHINOCEROS	2	1	0	3	2	3	0	5	0	2	0	2	
	(C) OMNIVORES													
27	WILD BOAR	0	0	0	0	2	3	0	5	2	3	0	5	
28	SMOOTH OTTER	0	0	0	0	2	3	0	5	2	3	0	5	
29	HIMALYAN BLACK BEAR	2	3	0	5	2	3	0	5	0	0	0	0	
30	SLOTH BEAR	1	1	0	2	2	3	0	5	1	2	0	3	
31	PORCUPINE	0	0	5	5	2	3	5	5	2	3	0	5	
	(D) MONKEYS													
32	BONNET MONKEY	0	4	0	4	2	3	0	5	2	-1	0	1	
33	COMMON LANGUR	1	2	0	3	2	3	0	5	1	1	0	2	
34	RHESUS MONKEY	2	2	0	4	2	3	0	5	0	1	0	1	
35	ASSAMESE MONKEY/PIG TAILED MACAQUE	0	0	0	0	2	3	0	5	2	3	0	5	
36	LTM/STUMP TAILED MONKEY	0	0	0	0	2	3	0	5	2	3	0	5	
	2- BIRDS													
	(A) WATER BIRDS													
37	BRAHMINY DUCK	0	0	1	1	2	3	0	5	2	3	-1	4	

97	COMMON DUCK	0	0	0	0	2	3	0	5	2	3	0	5	
39	ROSY PELICAN	0	0	4	4	2	3	0	5	2	3	-4	1	
40	GREY LEGGED GOOSE	0	0	1	1	2	3	0	5	2	3	-1	4	
41	BLACK NECKED STORK	0	0	0	0	2	3	0	5	2	3	0	5	
42	WHITE STORK	0	0	0	0	2	3	0	5	2	3	0	5	
43	PAINTED STORK	2	2	0	4	2	3	0	5	0	1	0	1	
44	ASIAN SPOON BILL	0	0	0	0	2	3	0	5	2	3	0	5	
45	ASIAN OPEN BILL	2	2	0	4	2	3	0	5	0	1	0	1	
46	NIGHT HERON	0	0	0	0	2	3	0	5	2	3	0	5	
47	PURPLE HERON	0	0	0	0	2	3	0	5	2	3	0	5	
48	BLACK CROWNED HERON	0	0	0	0	2	3	0	5	2	3	0	5	
49	POND HERON	0	0	0	0	2	3	0	5	2	3	0	5	
50	COMB DUCK	1	1	0	2	2	3	0	5	1	2	0	3	
51	BLACK IBIS	0	0	0	0	2	3	0	5	2	3	0	5	
52	WHITE IBIS	1	1	0	2	2	3	0	5	1	2	0	3	
53	BAR HEADED GOOSE	0	0	4	4	2	3	0	5	2	3	-4	1	
54	LESSER WHISTLING TEAL	0	0	0	0	2	3	0	5	2	3	0	5	
55	COMMON POCHARD	0	0	0	0	2	3	0	5	2	3	0	5	
56	SPOT BILLED DUCK	0	0	0	0	2	3	0	5	2	3	0	5	
57	COMMON TEAL	0	0	0	0	2	3	0	5	2	3	0	5	
58	CATTLE EGRET	0	0	0	0	2	3	0	5	2	3	0	5	
59	GARGANEY TEAL	0	0	0	0	2	3	0	5	2	3	0	5	
60	EGRET LITTLE	1	1	0	2	2	3	0	5	1	2	0	3	
61	GREY PELICAN	2	2	0	4	2	3	0	5	0	1	0	1	
62	MALLARD	0	0	0	0	2	3	0	5	2	3	0	5	
63	GREY HERON	0	1	0	1	2	3	0	5	2	2	0	4	
	(B) BIRDS OF PREY													
64	BLACK KITE	0	0	2	2	2	3	0	5	2	3	-2	3	
65	SHIKRA	0	0	1	1	2	3	1	6	2	3	0	5	
66	KING VULTURE	0	0	1	1	1	0	0	1	1	0	-1	0	
67	SHAHEEN FALCAN	0	0	0	0	2	3	0	5	2	3	0	5	
68	KITE	0	0	0	0	2	3	0	5	2	3	0	5	
69	FISHING EAGLE	0	0	0	0	2	3	0	5	2	3	0	5	
70	BARN OWL	0	0	1	1	2	3	0	5	2	3	-1	4	
	(C) OTHER BIRDS													
71	ROSE RINGED PARAKEET	0	0	8	8	3	5	0	8	3	5	-8	0	
72	LARGE INDIAN PARAKEET	4	5	0	9	3	5	0	8	-1	0	0	-1	
73	ALEXANDRINE PARAKEET	0	0	0	0	2	3	0	5	2	3	0	5	
74	PLUM HEADED PARAKEET	0	0	0	0	2	3	0	5	2	3	0	5	

75	BLOSSOM HEADED PARAKEET	2	2	0	4	2	3	0	5	0	1	0	1	
76	RED BREASTED PARAKEET	0	0	0	0	2	3	0	5	2	3	0	5	
77	GREY PATRIDGES	0	0	2	2	2	3	0	5	2	3	-2	3	
78	SWAMP PATRIDGES	0	0	0	0	2	3	0	5	2	3	0	5	
79	BLACK PATRIDGES	0	0	2	2	2	3	0	5	2	3	-2	3	
80	INDIAN PEAFOWL	1	1	0	2	2	3	0	5	1	2	0	3	
81	WHITE PEAFOWL	1	2	5	8	2	3	5	10	1	1	0	2	
82	RED JUNGLE FOWL	1	6	2	9	5	8	0	13	4	2	-2	4	
83	RED SPUR FOWL	0	0	0	0	2	3	0	5	2	3	0	5	
84	WHITE BREASTED WATER HEN	0	0	0	0	2	3	0	5	2	3	0	5	
85	COMMON CRANE	0	0	0	0	2	3	0	5	2	3	0	5	
86	SARUS CRANE	1	1	0	2	2	3	1	6	1	2	1	4	
87	PURPLE MOORHEN	0	0	0	0	2	3	0	5	2	3	0	5	
88	KALEEJ PHEASENT	3	0	0	3	2	3	0	5	-1	3	0	2	
89	LADY AMHEARST PHEASENT	0	0	0	0	2	3	0	5	2	3	0	5	
90	CROW PHEASENT	0	0	0	0	2	3	0	5	2	3	0	5	
91	CHEER PHEASENT	0	0	0	0	2	3	0	5	2	3	0	5	
92	MORAL PHEASENT	0	0	0	0	2	3	0	5	2	3	0	5	
93	PIGEON	5	5	4	14	3	5	0	8	-2	0	-4	-6	
94	ROSY PASTOR	0	0	2	2	2	3	2	7	2	3	0	5	
95	HORN BILL	0	0	1	1	2	3	1	6	2	3	0	5	
96	SPOTTED DOVE	0	0	2	2	2	3	2	7	2	3	0	5	
	1- REPTILES													
	(A) REPTILES HOUSE													
97	SAND BOA	0	0	0	0	3	5	0	8	3	5	0	8	
98	RUSSEL VIPER	0	0	0	0	3	5	0	8	3	5	0	8	
99	COBRA	0	0	0	0	2	3	0	5	2	3	0	5	
100	INDIAN PYTHON	0	0	0	0	2	3	0	5	2	3	0	5	
101	RETICULATED PYTHON	0	0	0	0	2	3	0	5	2	3	0	5	
102	COMMON INDIAN TRINKET	0	0	0	0	2	3	0	5	2	3	0	5	
103	CHECKERED SNAKE KEEL BACK	0	0	0	0	2	3	0	5	2	3	0	5	
104	DHAMAN	0	0	0	0	2	3	0	5	2	3	0	5	
105	ELONGATED TORTOISE	0	0	0	0	2	3	0	5	2	3	0	5	
106	SPOTTED POND TURTLE	0	0	0	0	2	3	0	5	2	3	0	5	

107	INDIAN EYED TURTLE	0	0	0	0	2	3	0	5	2	3	0	5	
108	INDIAN BLACK TURTLE	0	0	0	0	2	3	0	5	2	3	0	5	
109	INDIAN SOFT SHELLED TURTLE	0	0	0	0	2	3	0	5	2	3	0	5	
	(B) OTHERS													
110	MARSH CROCODILE	0	0	0	0	2	3	0	5	2	3	0	5	
111	CAIMAN	0	0	0	0	2	3	0	5	2	3	0	5	
112	MAGAR	0	0	9	9	4	6	0	10	4	6	-9	1	
	MAGAR (IN LAKE)	0	0	28	28	0	0	0	0	0	0	-28	-28	
113	GHARIYAL	0	2	0	2	2	3	0	5	2	1	0	3	
	EXOTIC SPECIES													
	(A) ANIMALS													
1	AFRICAN LION	0	0	0	0	2	3	0	5	2	3	0	5	
2	GIRAFFE	0	0	0	0	1	2	0	3	1	2	0	3	
3	SIKKA DEER	1	3	0	4	2	3	0	5	1	0	0	1	
4	CAPUCHIN MONKEY	1	1	0	2	2	3	0	5	1	2	0	3	
5	WHITE THROATED CAPUCHIN MONKEY	0	2	0	2	2	3	0	5	2	1	0	3	
6	CHIMPANZEE	1	0	0	1	1	2	0	3	0	2	0	2	
7	ORANGUTAN	1	0	0	1	1	2	0	3	0	2	0	2	
8	HIPPOPOTAMUS	3	1	1	5	2	3	0	5	-1	2	-1	0	
9	ZEBRA GRANT	1	0	0	1	2	3	0	5	1	3	0	4	
	(B) BIRDS													
10	EMU	0	0	15	15	2	3	0	5	2	3	-15	-10	
11	MACOW	0	0	2	2	2	3	0	5	2	3	-2	3	
12	BUDGERIGAR	0	0	40	40	0	0	25	25	0	0	-15	-15	OFF DISPLAY
13	ZEBRA FINCH	0	0	26	26	0	0	21	21	0	0	-5	-5	OFF DISPLAY
14	LOVE BIRDS	0	0	20	20	0	0	20	20	0	0	0	0	
15	COCKATEL	0	0	248	248	0	0	100	100	0	0	-148	-148	OFF DISPLAY
16	CACKATOO SULPHUR	0	1	0	1	2	3	0	5	2	2	0	4	
17	ROSELLA GOLDEN MANTLED	0	1	0	1	2	3	0	5	2	2	0	4	
18	SILVER PHEASENT	7	8	0	15	5	8	0	13	-2	0	0	-2	
19	GOLDEN PHEASENT	2	2	0	4	3	5	0	8	1	3	0	4	
20	RING NECKED PHEASENT	13	13	3	29	10	15	0	25	-3	2	-3	-4	
		226	**4**	**534**	**119**	**316**	**4**	**1**	**972**	**90**	**43**	**-**	**-218**	

			35		5		78	83				351			

Chapter V

Personnel Planning

Kanpur Zoological Park at present has about 76 different species and has 55 enclosures. Both open and closed type of enclosures. The total spread of the zoological park is about 76 Ha. The zoo has been categorized as Large Zoo by Central Zoo Authority. The zoo has much open type of enclosures to give the animals a naturalistic surroundings and ample scope for the animal for its physiological and biological activities. The enclosures have both wet as well as dry moats.

The zoo, with the forest environment has given the animals the feel of their natural surroundings and many animals successfully bred in these settings.

When the zoo started a total of about 100 staff was sanctioned and according to the need, additional daily wagers were employed. But in course of time the budgetary position dwindled and at the same time the daily wagers went to labour courts for regular employment. Keeping these in view the state government has put ban on keeping the daily wagers for longer time. The works can be taken on contractual basis. Labour issues have really effected the management of the zoo park.

Over the years lifestyle of the people and visitors has changed. The polythene and other packing materials started posing a greater threat to the management. Sometimes the visitors throw these eatables and packing material in to the enclosures. These cause untimely death of wild animals and bring bad name for the park.

The staff was recruited a long time back and has become very old. Hence most of the staff has lost the vigor. The enthusiasm that was there in the earlier part of the service is not seen now. But still they try to do justice to their job.

The total burden of management of the zoo park falls on the Director. The Director is involved in every petty matters of the park. Thus the time for planning and development of the park is hampered. To keep the administrative business in the hands of Curator is the best way for keeping the Director free for planning and implementation of the activities. Curator is in charge of the animal collection and their welfare. The post of curator also has been mandatory by Zoo recognition rules 2009. Thus a post of Curator has been proposed. Presently an officer in the rank of Assistant Conservator of Forests is posted to the zoo and is carrying out the duties of the Curator.

The animals like chimpanzee, orangutan which have been introduced initially have almost completed their life time. Regular illness of them requires constant treatment and medication. Apart from it the pheasants fight during breeding season; similarly the herbivores too have the fight for dominance. These result in injuries to the animals. The zoo inmates are given vaccination and preventive medication at

regular intervals. All these require medical staff for treatment. The doctors are on deputation from animal husbandry department. A lot of persuasion is required to get a doctor on deputation. Presently a doctor on deputation and 2 doctors on contract are working in the zoo. The large zoo also requires two compounders and Laboratory assistant. These are lacking at present. The works of the compounder is performed by a retired person on contract.

The zoo requires a Biologist and an Educator. Presently these posts are filled on contract. The basic function of a Biologist is to assist the Veterinary wing in preparation of balanced diet for the animals and to study the animal behavior and strengthening the research wing. The Educator is required for strengthening the education and awareness wing. He/ She also act as a naturalist and enlighten the visitors. His/her role comes when the media acts negatively and starts criticizing the zoo administration in the event of death of an animal. He can properly educate the media and the visitors on the measures taken by the zoo authorities for animal welfare & health and the reasons for the death of a particular animal. These posts are also mandatory according to Zoo recognition rules 2009.

Presently the interpretation center is not functional and the natural history museum and the exhibits are kept in a building. In the present master plan, strengthening of the interpretation facilities by procuring necessary equipments and exhibits etc., are proposed. For proper interpretation facilities supporting staff for the educator are needed. Two guides for supporting the interpretation center and museum are needed. These may be arranged on contract basis.

The sanctioned strength of sweepers at present are 12 .More sweepers are needed for cleaning the moats, enclosures , Toilets, public amenities and about 9 kms length of roads. In the present master plan expansion of water bird enclosure, a new pheasantry, modification of the present aviary, creation of new reptile house, conservation breeding centre for Rhinoceros, Barasingha, Sarus and Red Jungle Fowl are proposed. Leopard rescue centre and rescue centre for monkeys are also proposed in the present master plan. Thus 5 additional sweepers on contract are proposed. The conservation breeding centre is a non display area. Here three keepers cum sweeper can be engaged so that he would take care of the section.

In the gardening section the sanctioned strength of Maalis are 11 presently all the Maalis are in place. Of the present strength three are women and other five men are old and on the verge of retirement. This hampers greening efforts of the park. More maallis on permanent basis or contract basis is proposed.

A food distribution van and a solid waste disposal van have been acquired for food distribution but at present one of the class IV employee on contract is handling the tractor. In the master plan period and full time drivers are proposed to be employed for the food distribution van and for solid waste management.

Presently at the main entrance, chowkidars are utilized for ticket checking purpose. This leaves limited people for night patrolling and day protection. Presently only two posts of ticket checkers are present. This strength of the ticket checkers to

be increased from two to seven. Thus about six people are available at the main gate and one person at the aquarium.

Thus keeping above in view of the expansion plans of the zoo a table showing the staff position such as sanctioned strength, staff presently employed and the proposed staff strength is given in the **annexure V**

Chapter VI

Disaster Management

6.1-Disaster – Zoological parks of India are susceptible to a number of hazards like floods, cyclones, earthquakes, landslides, fires etc. of natural origin and fire, epidemics, animal escapes, civil disturbances etc. of manmade origin. These hazards are bound to take place and every zoo is vulnerable for these hazards. Hazard is a rare or extreme natural or human made event that threatens to adversely affect human life, property or activity to the extent of causing disaster. The institution should have the capacity to deal with these hazards.

Some of the emergency situations that zoo can face are illustrated as follows -

- Natural disorders like fire, flood, drought, cold and many other seasonal variations.
- Outbreak of Epidemic diseases.
- Curfew etc situations.
- Entry of stray animals inside the zoo.
- Escapes of Zoo animals

6.2-Management Plan - Meticulous prior planning with adequate finance is needed for preparedness to face such exigencies in the interest of the Zoo animals, its property, as well as the public safety. Management plan has been prepared keeping in view the flowing aspects.

- There has to be an overall in-charge in the zoo for giving direction and getting the plan prepared, and implemented
- The members of the team are to be identified meticulously
- Control room and media centers will help in coordinated approach to the disaster and in the dissemination of information
- Establish adequate communication and warning capabilities
- Establish adequate evacuation procedures
- Establish damage assessment capabilities

6.3 Planning For Zoo Emergencies

Planning for zoo emergencies includes constitution of an emergency team, their duties and responsibilities, hazards and its management, capability of staff, available equipment, warning people about the emergencies, relationship with other agencies like district authority, media etc and protection of office records.

For the crises management, an emergency team has been constituted and their duties are clearly defined. Emergency team consists of following members.

1- Director of the zoo.
2- Emergency coordinator.
3- Medical coordinator.

4- Warning /information coordinator.
5- Maintenance Coordinator.
6- Assessment Coordinator.
7- Security Coordinator.

Details about the members of the emergency team

Sl.No.	Leader of The Team	Designation of The Team Leader	Team Leader Assisted By
1-	Director of the zoo.	CCF/CF	All staff and team members.
2-	Emergency Coordinator.	Assistant conservator of forest	Unit coordinators, chaukidars , office staff and gardeners
3-	Medical Coordinator	Veterinary doctors.	Veterinary staff.
4-	Warning/information coordinator	Range officer Protection	Stenographer, head clerk and orderly
5-	Assessment Coordinator	Range officer Administration	Forester, Clerk and orderly.
6-	Maintenance Coordinator	Forester	Carpenter, mason, electrician, tube well operator, ticket checker.
7-	Security Coordinator	Forester	Chaukidars, keepers, security guards, PRD Jawans and Labors

6.4 Duties and Responsibilities of the members of the team

6.4.1 Director, Kanpur Zoological Park Kanpur

The role of Director of the Zoo is very vital before and during exigencies. He will be the one who is responsible for imparting training to people in the different protective actions before actual emergency occurs. He has to make decisions on protective actions, operations and expenditures. He will be receiving information and recommendations from the emergency coordinators and will be taking appropriate decisions. He will be ably assisted by the Assistant Conservator of Forests, who is acting as the curator of the zoo.

Director's primary responsibilities are:

- Identifying the people and assigning tasks to them.
- Deciding and implementing protective actions so that the consequences of the disaster are minimized
- Allowing the use of internal resources of the zoo whenever it is required to do so and arranging necessary logistics.
- Arranging the finances for implementing the plan.

6.4.2 Emergency Coordinator

The Emergency Coordinator for the Zoo is Curator/ Assistant conservator of Forests and he will be assisted by Range Forest Officers, Unit coordinator, Chaukidars, office staff gardeners, keepers etc.

The main responsibilities of the emergency coordinator are

- Maintaining a current disaster management plan and testing it on regular basis.
- Ensuring that all members of different teams are well trained in dealing with exigencies
- Coordinating the functioning of different teams that are involved in crisis management.
- Notifying local authorities of an emergency or disaster situation.
- Ensuring that vital records are identified and protected
- Making arrangements for logistics, emergency housing and feeding for personnel involved in emergency operations
- Making provisions for food and water requirements of Zoo animals
- Organizing and maintaining control room with adequate communication facilities
- Implementing decisions and directives from the Director.

6.4.3 Medical Coordinator

Medical Coordinator for the Zoo **is** Veterinary Doctor posted at Kanpur Zoo.

The medical coordinator is responsible for providing immediate care to injured persons/ injured Zoo animals, as well as the collecting and compiling of health and medical-related disaster information.

Emergency Medical Coordinator's Primary responsibilities are:

- Participating in site medical emergency plan review meetings.
- Ensuring that emergency medical care/ first aid is provided to injured persons and animals
- Maintaining adequate quantities of medicines
- Maintaining all equipment in a proper manner to meet any exigencies.
- Collecting and compiling health/medical disaster information for the Assessment Coordinator.
- Coordinating ambulance calling and pick-up, medical assistance etc.

6.4.4 Warning/ Information Coordinator

Warning/ Information coordinator for the Zoo is Forest Range officer Protection, who can understand the priorities of the zoo and he will be assisted by Stenographer, Head Clerk, and orderly etc.

During disaster occurrence in the zoological park the following action will be taken by the range officer-

1-The first and foremost thing to be done is intimating different coordinators of the zoo about the occurrence of disaster(can be done-through blustering of an alarm/ making public announcements/ wireless messages/ cell phones etc).

2-Communicating about the disaster with the local authorities like police/ fire departments and providing information about the disaster to the print/ electronic media etc.

Warning/ Information Coordinator's Primary responsibilities are:

- Ensuring that protective actions are publicized for all employees
- Participating in emergency plan review meetings
- Training the people working under them
- Establishing a media centre and making arrangements for logging the messages
- Maintaining communication equipment like wireless sets, fax machines, telephone lines etc.
- Receiving and disseminating information about the disaster
- Communicating with the local police/fire departments for assistance
- Requesting the district administration for vehicles/ personnel
- Preparing press notes after consulting assessment coordinator and submitting them to the officer in charge of the zoo for press release
- Conducting media tours whenever possible
- The information coordinator will also be responsible for developing news releases, answering media questions, ensuring that protective actions are publicized for all employees, etc.

6.4.5 Assessment Coordinator

Assessment Coordinator for the Zoo will be Forest range officer Administration and he will be assisted by Forester, keepers, L.D.C and an orderly.

Assessment Coordinator's Primary responsibilities are:

- Assessing of the extent of losses due to disaster.
- Collecting and verifying information about the disaster.
- Participating in emergency plan review meetings.
- Training the people working under him
- Collecting and compiling information on disaster situation.
    - Maintaining a written record of all events that occur including actions taken, decisions made and by whom, personnel involved, costs incurred, etc.
    - Reporting verified damage information to the officer in charge of the zoo.
    - Assisting with the preparation of reports like after-action report.
    - Preparing press releases,
    - Evaluating response efforts and preparedness of the zoo personnel in dealing with disasters,
    - Assessing further training needs of the personnel,
    - Knowing about the lacunae in the plan prepared,
    - Giving inputs for future crises management efforts etc.

6.4.6 Maintenance Coordinator

Maintenance Coordinator for the Zoo is a designated Forester of the zoo and he will be assisted by carpenter, mason, electrician, tube well operator, ticket checkers etc. Crisis deepens when the men are ready but not the materials and mechanical systems, hence the maintenance of these systems is very important.

The maintenance coordinator will be responsible for smooth functioning of all mechanical and utility systems of the zoo and in shutting down of the electrical systems during exigencies. He will also be responsible for maintaining adequate spares, removing of fallen trees, debris etc and in erecting of barricades etc.

Maintenance Coordinator's Primary responsibilities are:

- Participating in emergency plan review meetings.
- Proper maintenance of cages, squeeze cages, fire extinguishers, tube wells, electrical supply points, tractor, trolleys, welding machines, earth moving equipment, shovels, axes, cutters, blades, ropes, ladders and spare parts of different mechanical devices etc
- Training the people working under them
- Putting up of barricades for the control of traffic.
- Getting the fallen trees, poles, debris of the buildings etc cleared off
- Inspecting the damaged areas with his team and giving recommendations for entry/ reuse etc

6.4.7 Security Coordinator

Security Coordinator for the Zoo is a designated Forester of the zoo.

He will be responsible for coordinating safe removal of stranded people, controlling the movement of vehicles, checking the unauthorized entry of people, catching/ caging/ netting / tranquilizing of animals that have escaped their houses as early as possible.

Security Coordinator's Primary responsibilities are:

- Participating in emergency plan meetings
- Providing training and conducting of mock drills
- Ensuring that all wire meshes, chain link fences, walls, double doors, shutters etc are in good condition and getting them repaired immediately
- Ensuring that the trapping materials are in good working condition and are available as per requirement
- Periodic checking for breached boundary walls
- Lopping and cutting of trees that might pose danger
- Controlling the movement of people and vehicles
- Preventing unauthorized entry
- Assisting with the care and handling of injured persons.
- Assisting with fire suppression, if necessary etc.

Kanpur Zoo is divided in to six sectors. Foresters/WLG in-charge of each sector is the Unit Coordinators for the sector. They will be assisted by the Chowkidars, Gardner's, Animal keepers, laborers who are working under them.-

List of unit coordinators are given below

6. Sector -1 Sector in charge (Forester/Forester Guard)
2. Sector-2 Sector in charge (Forester/Forester Guard)
3. Sector-3 Sector in charge (Forester/Forester Guard)
4. Sector-4 Sector in charge (Forester/Forester Guard)
5. Sector-5 Sector in charge (Forester/Forester Guard)
6. Sector-6 Sector in charge (Forester/Forester Guard)

The name of the officers/staff has been given in the annexure no6.It will be revised whenever officer/staff will be transferred.

The unit coordinators will be responsible for-

- Compliance of the directions of emergency coordinator
- Participating in the plan review meetings and giving their inputs.
- Training the people working under them.
- Conducting mock drills.
- Taking in protective actions within their jurisdiction before an actual emergency occurs.
- Identifying and ensuring protection of vital things under their jurisdiction.
- Mobilizing resources and personnel.
- Ensuring that stranded zoo visitors are taken safely to the designated shelter/ evacuation areas.
- Ensuring that the electricity points are shut down during emergencies.
- Helping in the proper movement of people and vehicles.

6.5 Hazards and its management- Flood, Fire, Drought and civil disturbances etc are the hazards that can hit the zoo. List of hazards that zoo might face is listed and possibility of each hazard has been estimated using a scale of 1to 3 where in

1- Low impact
2-Moderate impact
3- High impact

Likewise Employ Impact, Property Impact and Economic Impact was estimated using a scale of 1 to 3 where in

1- Low impact
2-Moderate impact
3- High impact

Hazard matrix has been prepared as follows-

Hazards	Possibility	Employee Impact	Property Impact	Economic Impact	Total Impact
Fire	1	1	1	1	4
Bomb Threat	1	1	1	1	4
Civil Unrest	2	1	2	1	6
Escape of Animals from enclosures	1	1	2	2	6
Animal diseases	3	2	3	3	11
Flood / water Logging	2	1	3	3	9
Drought	2	1	1	2	6
Earthquake	1	1	1	1	4

6.5.1Hazards matrix- The rating of hazards and its analysis is as below-

1. Animal diseases -- (11points)
2. Flood / water Logging -- (9 points)
3. Escape of Animals from enclosures -- (6 points)
4. Drought -- (6 points)
5. Civil Unrest -- (6 points)
6. Fire - (4 points)
7. Bomb Threat -- (4 points)
8. Earthquake -- (4 points)

From the analysis it is clear that hazard due to animal disease is the highest followed by hazards due to flood and animal escape.

2.3.2 Capability of staff- Detail about skilled staff and their phone no are given below-

The Zoo management has identified the skills possessed by its employees that can be used during emergency situations. The identified employees whose list is given below will be asked for their participation in the emergency operations.

In order to tone up the skills of the employees the management will organize workshops/trainings etc. on continuous basis.

6.6 Available Equipment-

Zoo requires a variety of equipment to respond to the hazards. List of the equipment needed has been prepared and provision has been made in the budget for purchasing of new equipment and for replacing of the old, worn out equipment.

List of equipment needed by the zoo for dealing with different kinds of emergencies are shown in table.

List of Equipment needed:

Captive animals	Minimal requirement	What Zoo has
Large carnivores	Nets, pole syringes, snare, Projectile guns and darts, blow dart equipment, crates, squeeze cages etc	Nets, pole syringes, snare, Projectile guns and darts, blow dart equipment
Small carnivores	Nets, gloves, pole syringes, snare, crates, blow dart equipment, crates, squeeze cage etc	Nets, gloves, pole syringes, snare, crates, blow dart equipment, crates, squeeze cage etc
Hoofed stock	Projectile guns and darts, blow dart equipment, crates etc	Projectile guns and darts, blow dart equipment, crates etc
Small mammals (e.g. primates).	Nets, gloves, pole syringe, snares, plastic tubes, blow dart equipment, crates, squeeze cage	Nets, gloves, pole syringe, snares, plastic tubes, blow dart equipment, crates, squeeze cage

Large primates like chimpanzée, orangutans etc	Nets, gloves, pole syringe, projectile guns and darts, blow dart equipment	Nets, gloves, pole syringe, projectile guns and darts, blow dart equipment
Birds	Nets, gloves, towels, pole syringe	Nets, gloves, towels, pole syringe
Reptiles	Nets, gloves, snares, plastic shield, bags, plastic tubes, snake tong, snake hook etc	Nets, gloves, snares, plastic shield, bags, plastic tubes, snake tong, snake hook etc
Reptiles	Nets, gloves, snares, bags, plastic tubes, snake tongs, snake hooks etc	Nets, gloves, snares, bags, plastic tubes, snake tongs, snake hooks etc

6.6.1 Warning people about the emergencies

Minimal requirement	What Zoo has
Alarm systems	All Required
Public address system	All Required
Radio communications (walkie talkie)	All Required

6.6.2 Requirement of flood equipment

Minimal requirement	What Zoo has
Large and small boats	All Required
Rope and chain	All Required
Zette.	All Required

6.6.3 Requirement of fire equipment

Minimal requirement	What Zoo has
Tractor mounted water tanker.	All Required
Rope and chain.	All Required
Jetty.	All Required

6.6.4 Requirement of animal diseases,

Minimal requirement	What Zoo has
Medicines	Available
Treatment devices	Available

6.7 Equipment and vehicles-

Equipment/	Department	Address	Telephone

Vehicle Type and its number			Number
Gypsy UP 78 R 0512	Forest Deptt.	KZP	05122560257
Jeep UP 78 U 4243	Forest Deptt.	SDO Kanpur Nagar	9412170389
Jeep -	Forest Deptt.	SDO Kanpur Dehat	9760458774
Jeep UP 32 AK 0477	Forest Deptt.	Silva Kanpur	9412287068
Jeep UP 32 AA 5661	Forest Deptt.	Silva Kanpur	9412708244
Car- UP 32D 5383	Forest Deptt.	DFO Kanpur	9415046636
Car UP 32 BG 0208	Forest Deptt.	CCF Kanpur	9450877777
Mini Bus UP 78 B 0984	Forest Deptt.	FTI Kanpur	2604259
Mini Bus UP 32 BT 9038	Forest Deptt.	FTI Kanpur	2641342
Water Tanker UP 78 BG 0214	Forest Deptt.	RO Kanpur	9452603395
Trolley UP 78 BG 0214	Forest Deptt.	RO Kanpur	9452603395
Earth moving equipment JCB	Private	Pintu singh	9936570954
Ambulance services	Health Deptt.	Kanpur Nagar	108
J.C.B Machine UP 78 BG 4240	Private	Rajesh katiyar	9415130251

6.8 Local Response Capabilities

Name of the department	Name of the officer in-charge	Contact number		
		Office	Fax	Cell
Closest Police station	Nawabganj	100		9415903695
Closest Fire Station	Colnelganj	101		
Closest government hospital	GSVM	108		

6.9 Media contact list

(i)Radio

Address	Contact Person	Telephone/ Fax Number
All India radio	D.S Chauhan	0512-2555755
F.M Channels	Garima Pathak	9935166983

(ii)Television

Name of The channel	Contact Person	Telephone Number
K. News	Chetan Gupta	9336814406
ETV News UP	Subham	9305624694
DoorDarshan Lucknow	Neeraj Sachan	9450330410
Sea News	Piyush Mishra	9335607369
See News	Rajesh Agrawal	9307658848

(iii)Newspaper

Name of The Paper	Frequency of Publication (daily/ weekly/ fortnightly/monthly)	Contact Person	Telephone Number
Danik jagran	Daily	O. P. Bajpai	9918003150
Hindustan	Daily	Gajendra singh	9415039489
Aaj	Daily	Dawood Khan	9335323356
Times of India	Daily	Abhinav Malhotra	9956030000
Amar Ujala	Daily	Shaily	9675898674
Rastriya Sahara	Daily	Pankaj Trivedi	9415477617
Chauthi Dunia		Anil Sighani	9415592770

6.10 **Records** - Some of the vital records of the zoological parks and prescribed method for storing them are as given below-

Records related to	Type of Record	Location	Preservation Method	Responsible Person
Fiscal management	Budget data/ Monthly Accounts	Director office	Fire proof box	Accountant
Personnel	Employee Info. Personnel Database	Director office	Duplicated Copies stored in Fireproof box	Head Clerk/ Establishment clerk
Inventory	Animal records	Zoo Hospital	Duplicated (hard disk of computer)	Zoo vet. / Stenographer

In case of emergency the records will be shifted as follows, if needed-

Name of The parental record place-	Shifting place (vacant area with respect to records)
Vet hospital	Chakor house
Directors office	Lake view
Range office	Store

6.11 Key persons –

Name/Title of Official	Telephone Numbers		
	Office	Home	Cell
Principal Secretary Forests	0522/2214836 0522/2238465	2727240	9453006001
Secretary, Forests	0522/2239293 0522/2214573	2308447	9453006018
Principle chief conservator of	0522/2206168	2208601	9453006002

forests			
Chief wildlife warden	0522/2206584	2207975	9453006004
Member Secretary CZA Delhi	011/23381585	23073072	
Commissioner Kanpur	0512/2525441	05122304304	9305560011
Inspector General of Police	9454402510	2534141	9454400101
Deputy Inspector General of Police	0512/2536036	2534142	9454400211
District Magistrate	0512/2306577	2304436	9454417554
Senior superintendent of police	0512/2304407	2530517	9454400285
Superintendent of police	0512/2304407	2530517	9454400285
Police Circle Inspector, nearest police station	100 0512/2561370	2561370	9454403742
In charge Fire Services, nearest fire station	100	2540262	9454418399
Divisional Forest Officer Kanpur	0512/2582207	2582207	9415046636

6.12 Flood - The flood management strategy is as follows-

6.12.1- Pre flood management-

- Marking of previous year water logging areas.
- Cleaning of all channels
- Collection and removal of Garbage, litter and small wood from water routes and channels.
- Cleaning of all culverts and cause ways.
- Cleaning of inlets and outlets of lake and of all enclosures.
- Purchase of one motor boat and equipments
- Purchase of medicines.
- Storage of food materials at least for one week.
- Alternate arrangement for safe drinking water.
- Lifting of water from dry moats.
- The map will be maintained by the officer in charge of control room.
- Channels / culverts /cause ways will be cleared before the onset of monsoon every year. (before 15th June) The works will be done by the Range officers In charge and monitored by Deputy Director, Director of the zoo will inspect after the completion.
- Dry and wet both types of foods will be stored. The food items will be stored as shown below-

1- Green fodder - 3 days.
2- Food grains in the bags- 7days
3- Straw and dry thatch -3days.
4- Fruits and vegetables - 7 days.
5- 100 Kilogram Gud for 7 days.
6- Plantation of fodder trees and grasses inside the zoo.

(i) Carnivorous-

1- To meet emergency 250 kg of meet will preserved in deep freezer.

2-60-75 Eggs are required per day to meet the requirement of animals. Therefore 600 eggs will be stored every time.

(ii) Omnivorous-

50 kg honey.

The above food items will be stored in existing store as well as in emergency store.

(to be constructed)

- The existing water storage system (Two overhead tanks each of capacity 50000 liters) is enough to meet the water requirement of the zoo. During the emergency only power failure matter, 50 KVA Generator set is available. The fuel of one Generator consumption is 50 lit per day. Therefore 500 lit diesels will be reserved to operate the Generator set for emergencies.
- Each enclosure is provided with water connection. In case of water logging nearby water hydrant will be opened and water will be supplied through house pipes.300 meter length of house pipe will be purchased and kept for this purpose. Tractor with tanker will be purchased /leased for distributing water. The bowl shaped cement pot will be purchased and placed in the feeding cubical to drink water.

6.12.2 -During flood management –

- For the regular watch over flood and animals more staff will be deployed.
- Zoo control room will have regular contact with District flood control room to have information about the possibilities of flood to do the needful.
- Regular monitoring over supply of food.
- The motorboat will be ready to supply food and other things.
- Outer protection wall as well as inner walls will be regularly watched. The material for boundary wall repair will be made available as soon as possible shortly when needed to repair the damaged walls .The material for repair will be collected near vet hospital, Machali Ghar and near gate of Deer safari.

6.12.3- Post flood management-

- Drying of dry moats.
- Pumping of flood water from wet moats and refilling it.
- Drying of enclosures.
- Spray of lime in the moats, kraal and enclosures.
- Malaria treatment.
- Security and Health audit - Monitoring of assets and health of zoo animals
- Repair of infrastructure affected during flood.
- Treatment of sick zoo animals

6.12.4- Critical Decisions to be made in a Flood situation

Indicator	Decision
Water Supply	
6. Total interruption of the normal system	Establish alternative water source
2. Poor water quality at source	Initiate chlorination
3. Poor drinking water quality	Recommend chlorination/boiling
Sewage Disposal	
Total interruption of the normal system/interruption	Provide alternative methods of sewage disposal
Solid Waste Disposal	
Inadequate collection/removal and dumping site	Obtain equipment for a) debris removal, b) reconditioning of dump and c) garbage collection
Food Hygiene	
Frequent inspections	Provide additional personnel for food hygiene inspections
Corpses	
Large number of corpses	Initiate mass burials
Mosquitoes	
Increase in vector population and breeding sites	Initiate Spraying and larval control
Determination of the biological life cycle	Select best spraying time and larvicide application
Sensitivity of mosquitoes, availability, cost and familiarity of personnel to insecticide	Select appropriate insecticide
Other Pests	
Increase in number of poisonous snakes	Stock the snake venom serum

6.13 Drought-

The Allen forest is very rich in flora. But available vegetation is not very good for fodder. The following measures will be adopted to augment fodder availability during pinch period.

(1) Removal of rank vegetations like P*rosopis juliflora* that are encroaching all around the zoo.
(2) Plantation of shade cum fodder species in a suitable manner.
(3) Rising of fodder grasses as recommended by fodder research institute Jhansi.
(4) Plantation of Climber species like Bauhinia. This will serve purpose of fodder and beautification.
(5) Alternate electric supply through generators as there may be possibilitiesof power cut during drought conditions.
(6) For the carnivorous meat shops and contractors has been identified.

6.14 Fire

Fire is not very frequent in the Allen forest but the possibilities of catching fire in zoo cannot be ruled out.

6.14.1 Possible sources of forest fire-

- Short circuiting in electric lines spreading all over the zoo.
- Jump fire from outside the zoo as many habitations and workshops are located around the zoo.
- Fire due to wrong practices by the visitors.

6.14.2 Fire management-

- Clearing fire lines along the roads, Zoo rail path and litter so collect will be deposited in the compost pits there only.
- Removal of fire hazards from the enclosures and moats.
- Pre fire seasons fire management works.
- Display of information regarding do's and don'ts
- Clearing rank vegetations along the roads.
- Purchase fire fighting tools like Bucket, fire rack, axe, spade, fire extinguishers water storage tanks etc.
- Lighting fire in the zoo will be strictly prohibited in any case except burning of carcass.
- At present Public address system is available in the zoo. Siren will be installed at two places one near hospital and another in the residential colony of the zoo. The control room in charge will operate the siren at the time of emergency declared only by an order issued by the Director.
- Possibility of catching fire in zoo will be brought to zero level by having 5 meter wide fire lines on the both sides of road visitor circulation, path service road and zoo railway line. The fire lines will be cleared before 15 March every year. Control burning will be strictly avoided. Litter will be collected and put

in the compost pits. The fire lines will regularly be maintained from 15 March to 30th June.

- The External power lines will be cut by the local Sub Station only on the request of Emergency coordinator.
- In case of emergency auxiliary power supply will be provided by two generator sets of capacity 50.0 KVA and 5.0 KVA available in the Zoo. One Mobile Gen set of 20 KVA capacity mounted on trolley will be purchased.
- 50 liter diesel is required per day to operate all the three gen sets. A reserve stock of 500 litre of diesel will be stored in a suitable container in a mini store room located inside the campus of vet hospital.
- Three wire cutters are available in the zoo. Nine more wire cutters will be purchased for use in emergency.
- Ladders of different size, hard hats, torches, boots, etc. will be purchased in sufficient number and kept for ready use during emergency.

6.14.3- Plan for dealing with Fire accidents

(a) - Notifying and Warning

- Whoever comes across Fire/ explosion with in the premises of Zoo should notify to the zoo authorities
- The warning may be by siren, ringing bell, etc.
- The first person spotting a fire should activate the alarm system and will remain there till rescue team reaches the spot. He will keep on updating the authorities about the intensity of the fire and precautionary measures taken.

6.14.4- Equipment required for dealing with fire

Items	Essentially needed	What the zoo has with it
Rubber boots	√	√
Drinking water bottles	√	√
First aid kit	√	√
Protective gloves	√	√
Helmet	√	√
Measuring tape	√	√
Shovels	√	√
Pick axe	√	√
Tranquilizing gun with drugs	√	√
Welding machine with sufficient welding rods	√	√

Ropes and nets	√	√
Cages	√	√
Construction and repair materials like Cement, iron rods, sand etc	-	√
Gas cutters	-	√
Earth moving equipment	-	X
Fire proof dress		X
Goggles	√	√

6.15 Civil Disturbance Procedures

During Civil Disturbances, it is very important that arrangements may be made to send the zoo visitors and the staff safely to safer areas. As the zoo is visited, largely by women and children evacuating them to safe areas becomes more imminent as panic may result in further injuries if people attempt to evacuate in a disorganized manner. Civil disturbance largely affect the supply of food and water to the zoo animals. The possible civil disturbances are as -

1- Riots,
2- Looting,
3- Curfew
4- Other forms of civil disturbance

6.15.1 - Plan for Evacuating Zoo visitors and Zoo personnel

Notification and Warning

As and when information about a major civil disturbance-affecting the Zoo is received from the Police Department / radio and television; personnel will be given instructions about the incidences of Civil Disturbances

General Response

- The Emergency Coordinator will fully activate the control room to monitor conditions and determine appropriate response actions.
- The Emergency Coordinator will assess the situation and determine what actions are needed to protect Zoo visitors and Zoo personnel. The type of protective actions taken will depend upon several factors, including the size, type, and location of the disturbance, and the level of violence and property destruction involved.
- Assistance from **law enforcement personnel** will be requested
- The Emergency Coordinator will brief Unit Coordinators of the situation as soon as possible and inform them of actions to be taken. Unit Coordinators will brief persons within their work areas.
- Zoo personnel may be released early as deemed appropriate and the Zoo guests will be asked to leave the Zoo immediately.

- If conditions do not warrant or allow the early release of zoo personnel and Zoo guests, all points of entry into the Zoo will be secured and access should be limited to those persons transacting legitimate business.
- Assistance from law enforcement personnel will be requested as deemed necessary to prevent unauthorized access into the zoo

Chapter VII

Contingency Plan

The total area of Kanpur Zoo is 78 hectares including Lake and the zoo is housing a lot of animals. There is continuous stream of visitors to Zoo. Safety and protection of animals and visitors is the integral part of the management. Due to unexpected events, the management may have to face a crisis situation sometimes. As it involves risk to animals, keepers and visitors, a detailed contigency plan must be in place based upon the past experiences.

7.1 Animal Disease Emergencies and Preparedness Of The Zoo

The captive animals of the zoos are subjected to a number of diseases of viral, bacterial, rickettsia and mycoplasma origin. Some of these diseases are dreadful and occurrence of these diseases amongst the captive populations of the zoo may have disastrous consequences, like

- Serious losses to the zoo by the way of loss of valuable genetic materials;
- Increased concerns of animal diseases transmitting to humans (i.e. zoonotic);
- Cause unnecessary pain and suffering to the captive animals

In order to save the zoo animals from the diseases, animal tissues will be regularly collected and sent for pathology and histopathology examinations. The data collected so will be kept on records. The disease occurrence and spread can be minimized and controlled by regular monitoring of health, disease surveillance and risk analysis.

7.1.1 Disease surveillance

Disease surveillance should be an integral and key component of the zoo. This is important for early warning of diseases, planning and monitoring of disease control and provision of sound animal health. Disease surveillance can be categorized into Passive surveillance and Active surveillance. The details are as follows-

7.1.2 Passive disease surveillance

Passive disease surveillance will be done as –

1- Reports from the personnel of the zoo.
2- Reports from the press.
3- Reports from laboratory of the periodic targeted serological investigations and that of urine, and fecal samples of the zoo animals(mostly related to deaths of feral animals of the zoo),
4- Detailed investigation report from post mortem.
5- Periodical inspections of the food sources.

7.1.3 Active disease surveillance

1- From the direct observation of vet doctors.
2- From the pm report of dead animal.

3- Daily observation by animal care staff of each animal for clinical signs of disease and method of reporting abnormalities helps in early veterinary investigation

7.1.4 Risk Analysis-

1- Regular watch over sudden death of animals.
2- Careful covering of carcass of the body and sending it to lab or vet hospital for investigation.
3- Receiving of report, control of disease accordingly.
4- Data collection and its analysis.

7.1.5 Burial -.

Burial ground has been identified. All the dead animals will be either buried or burned on the burial ground only.

7.2 Pest control-

7.2.1-Rodents

1- Rat control consists primarily of gassing rodent burrows with hydrogen phosphate pellets and baiting perimeters of buildings and enclosures

2- Mice are a bit more difficult to control in a zoological setting. Traps will be used for mouse control in areas where baiting is unacceptable especially in bird houses. Watering the rat holes at periodic intervals will prevent rodent population.

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3- Population of rodents depends upon the seed produced in the zoo forest. A good seed year in bamboos also has an impact over rodent's population growth. To control rodent's population in zoo all the mature bamboo clump will be cut flush to the ground to avoid seeding.

4- Trees of species like Holopletlia intergrifolia (Papri). Syzygium cumini (Jamun), Acacia catechu (Khair), Azadiracta indica (Neem), Dalbergia sissoo etc. are abundant in the zoo. They produce profuse seed every year. Therefore sufficient food materials become available to the rodents that favor their population growth and its predators (Snakes).The fallen seeds will be collected every year at the time of fall and burnt safely.

5- Dead rats and mice will be buried in the burial ground.

7.2.2-Free-Flying Birds

1- Elimination of nesting and roosting sites.
2- Attention to sanitation and proper storage, removal of refuse and solid waste,
3- The populations of birds of prey will notably be decrease with proper sanitation of the enclosures of the zoo. The problem to a greater extent is addressed by providing food to the inmates of the zoos within their feeding cells.

7.2.3-Controlling Monkeys

For controlling the monkey menace the following actions is proposed to be taken

1- Visitors will not be allowed to feed the monkeys

2- Feeding the animals (esp. the herbivores) will be strictly in the feeding cells
3- Monkeys will be captured and released in other forest areas. For catching specialized Monkey traps have been prepared.

7.2.4-Controlling Dogs

1- Regularly check the boundary wall. (alternate day).
2- Chowkidars are asked for look out for the stray dogs.
3- Dogs that enter the Zoo will be killed at once.
4- The main gate will always be guarded by gate man.
5- Animal Birth Control measures will be taken through Nagar Nigam

7.3 Escape of Animals from Enclosures and Ensuring Public Safety

Kanpur Zoological Park houses more than 1200 animals. There is always a chance that animals can escape from their enclosures. There are the possibilities of escaping animals from their enclosures and safe evacuation of people from zoo in the event of an animal escaping from the enclosure. The possibilities of escape of animals from their enclosures can be minimized by proper maintenance of enclosure and continuous watch over them and necessary precaution being taken. Accordingly the causes of escape, precaution to check them and protocol to be followed during escape are illustrated here.

7.3.1 Causes of escape

Causes resulting to the escape of animals –

1. Unclosed or partial closing of doors.
2. Improper lock.
3. Breaking of moat wall.
4. Soil erosion in the moat.
5. Breaking of fence in the enclosures.
6. Fallen trunk of trees.
7. Leaning trees and drooping branches of trees,
8. Water filling in the dry moats.
9. Excess water in the water filled moat.
10. Weak and unstable case

7.3.2 Precautions – The following precautions are taken to check escape of animals from enclosures-

1. All the keepers will ensure proper shutting of doors in their respecting cells and enclosures.
2. Keepers will ensure that all the lock is properly locked.
3. Breaking of moat wall may cause soil erosion. As a result eroded soil makes a high land to jump out animals. Keepers will keep watch over broken wall of respecting moat. Whenever such situation comes out immediately soil will be removed and wall will be repaired.
4. Opening in the fence panel may cause escape of animal keeper will always keep watch on the openings. He will repair immediately the mesh and inform to range officer to repair largely.
5. In any condition no trunk of fallen trees will be allowed to remain inside the enclosure. Fallen trunks of the trees will be removed immediately.

6. There will be regular lopping of trees from enclosures. Because hanging branches allows animals to jump out. Especially in the case of primates.
7. Water filled in dry moat will be pumped out immediately.
8. Excess water from wet moats will also be pump out.
9. Design of Gates, Doors & Slides is of utmost importance these must be as follows.
10. Gates or doors of an enclosure must open inwards to the enclosure.
11. If an entrance to an enclosure is a safety entrance through successive gates or doors, they must open inwards towards the enclosure.
12. A gate, door or slide giving entrance to an enclosure must be so designed that an animal in the enclosure cannot lift the gate of door off its hinges or a slide off its tracks; or unfasten the security device such as locks

7.3.3 - Controlling escape of animals

1. The perimeter boundary of the Zoo has an entry and an exit point. No other entry or exit point will be provided.
2. The chaukidars will be engaged to watch upon ill social elements.
3. All the possible escape points such as doors of the enclosures, gate of the deer safari, entrance and exit point, through opening of the Nalah, will be marked and chaukidars kept on duty.
4. Trees and branches near the enclosure will be removed to prevent escape through the trees
5. All animal furrows along the perimeter boundary and enclosure will be plugged.
6. All possible escape routes will be checked by the keepers and chaukidars regularly.
7. Proper signage will be put on every road, park, canteen and water points, enclosure etc.

List of Equipment needed to meet contingencies in Zoo:

SN	**Captive animals**	**Minimal requirement**
1	Large carnivores (10 items)	1-Nets, 2-pole syringes, 3- Snare, 4-Projectile guns and darts, 5- Blow dart equipment, 6- Crates, 7-Squeeze cages etc 8-Ladder 9-Rope 10-Gloves,
2	Small carnivores (10 items)	1-Nets, 2-pole syringes, 3- Snare, 4-Projectile guns and darts, 5- Blow dart equipment, 6- Crates, 7-Squeeze cages etc 8-Ladder

		9-Rope 10-Gloves,
3	Hoofed stock (3items)	Projectile guns and darts, blow dart equipment, crates .
4	Small mammals (e.g. primates) (09 items).	Nets, gloves, pole syringe, snares, plastic tubes, blow dart equipment, crates, squeeze cage.
5	Large primates like chimpanzee, orangutans etc (5 items)	Nets, Gloves, pole syringe, projectile guns and darts, blow dart equipment
6	Birds (3 items)	Nets, gloves, towels, pole syringe
7	Reptiles (8items)	Nets, gloves, snares, plastic shield, bags, plastic tubes, snake tong, Snake hook .
8	Reptiles (7 items)	Nets, gloves, snares, bags, plastic tubes, snake tongs, snake hooks .

- The zoo is to be made well equipped to deal with the emergency. The necessary equipment's will be purchased as per the availability of budget.
- Readiness of the equipment's-
- All the cages and snares/traps will be kept painted, cleaned and oiled.
- Tranquilization kit and medicines will keep ready by zoo doctor.

- The equipment's will be examined every month by the Vet doctor/ RO's and Deputy Director of Zoo and a certificate will be issued regarding fitness of equipment and readiness to meet emergency.
- The exhibit area of all the enclosures will be flooded once in a month to check furrows/ tunnels made by the housing animal or free moving animals (reptiles and rodents etc.)
- Sterilizing enclosures before and after Monsoon.

Chapter VIII

Capacity Building

Zoo is a place where the animals are kept in captivity and has the moto of exsitu conservation of endangered animals.At the same time the zoo also has an objective of conservation education, Research,awareness.Thus the staff working in the zoo should have knowledge of the fields in which they are working and they should be updated with the recent field developments in the zoo management. The zoo personnel act as ambassadors of wildlife conservation. Without proper knowledge of their own fields they can not do justice in the area of their work.

8.1 Training Programmes

Effective conservation requires an informed, supportive, dedicative and participative management. For it, imparting training to the staff will be a vital strategy. The zoological park has different levels of people working in it. Some of them are Keepers, sweepers, Gardeners, Chowkidars, Carpenters, Supervisory staff and medical staff and administration and office staff. Each category of the staff require specific input for his area of work. So the training programmes should be designed in such a way that they impart skills in his area of work.

Zoological park mainly has the following staff

8.2 Zoo Keepers - To enhance and upgrade knowledge and skills of the animal keepers in various aspects of Zoo Management, animal keepers training programmes should be organized in the zoo annually. Many a times these programmes are financed by Central Zoo Authority of India.The zoo keepers mainly perform the function of looking the welfare of the animals and oversee the feeding and health care part.They also supervise the hygeine of the enclosure.To make a keeper more knowledgeful about the animal he deals with and to make him act as a guide to the visitors, he should have the scientific temper to observe the animal behaviour and the intricacies of habitat management,so that he can provide an ameleorating atmospere for the wild animal.And the animals can breed in the given conditions in captivity.Various trainings that are recommended for the keepers are –

8.2.1 Zoo Keepers training- Basic zoo keepers training is compulsory for all the new recruits.The person who has been selected is a new person to deal with the wild animals.To make him aware of the captive wild life management a compulsory training should be imparted within six months of joining the service.These courses should include the concepts of balanced diet to the animals, enclosure enrichment activities and their importance in wild animal management, behvioral skills to deal with the visitors, basic scientific details about the animals so that he can act as a guide.

8.2.2 Refresher courses for the keepers- Refresher courses should be arranged for the zoo keepers to update the knowledge and the recent developments in the field.These trainings should be arranged at the intervals

of at least three years. These courses should include recent developments in the field of exsitu management. Interaction with experts in the field.

8.2.3 Field visit to various Zoos – Seeing is beleiving.Hence the keepers should be taken around various zoos.The best performing zoos and the various methods adopted by these zoos to achieve the best results should be shown to the keepers, so that the keepers with renewed vigour can try these tested methods in their zoo for achieving the results.

8.2.4 Training keepers as guides- The keepers are incharges for certain enclosures.Through out the day they move around these enclosures observing the animal through the entire day.Thus these are well informed about their behaviour.These can be utilised in making them as good guides for the visitors.So they should be imparted proper communication skills.

8.2.5 Keepers as researchers- As the keepers are the best equipped to observe animals behaviour.Small research projects can be taken up with their involvement and great results can be produced.

8.3 Gardeners or Maalis – No doubt that The zoological park is an exsitu conservation center, But at the same time the visitors coming to a zoo want to have both awareness as well as recreation value.The clean and green surroundings attract the people.People wish to spend their leisure time in the lap of nature.To provide them the tranquility of greener surroundings the park should have ample greenery and should attract people.In making the park greener and to provide natural colourful settings the role of maali becomes more important.The maali should have the knowledge of the soil and the plants that grow there and the nursery techniques.At the same time they should have the knowledge of Flowering plants and the right season to grow them. The recent concept of enclosure management is immersion enclosures. An immersion enclosure is possible only when the masonry structures are properly camouflaged and provide the animal all the aspects of forest environment. Intis the Gardeners have a major role.Thus the gardeners or Maalis should be imparted the following trainings-

8.3.1 Basic skills **of Gardening-** After recruitment the gardeners should be given a basic training for the maalis regarding the use of gardening equipment,the planting techniques, basic knowledge of land scaping, maintenance of lawns, following the drip irrigation and sprinkler irrigation methods why and when. etc.,

8.3.2 Grafting,layering tecniques- The ambience of the zoo speaks volumes how best the zoo is maintained. To create a fine ambience colourful flowers and vaiety of flowers arranged properly give the landscape an added attraction.Once the basic skills are imparted to the gardeners they should be exposed to higher technical skills such as grafting and layering techniques so that improved varieties of flowering and fruiting plants can be grown in lesser time.

8.3.3 visit to various **parks and other zoos-** The Gardeners should also have the field visits to various well managed parks and various zoos to know about the enclosure enrichment through greening of the enclosures and at the same time to have the knowledge of basic land scaping to attract the peoples attention.

8.4 Sweepers- The hygeine of the park is maintained by proper solid and liquid waste management.The skill imparted to the sweepers in keeping the zoo clean and timely disposal of solid and liquid wastes adds beauty to the park.The visitors appreciate the clean surroundings.Thus the sweepers are to be motivated for keeping the zoo clean.The duty of the sweeper starts early and ends late, because they have to keep the zoo clean before the visitor enters and to clean when they leave.The sweepers are also responsible for keeping the enclosures clean and the water pots and pools clean.Thus the sweeper should be trained in the following subjects-

8**.4.1Basic principles of hygeine and cleanliness-** Once they are recruited in to the service they should be imparted a training regarding basic principles of hygeine and cleanliness, so that they start appreciating the importance of keeping a clean surroundings.The harmful nature of polythene and the loss they incur to wild animals should be taught at length.The harmful effects of urine and feces on the animals.The vectors that are attracted in the event of unclean surroundings and the damage they cause to the zoo inmates and visitors including them.

8**.4.2 Field visit to varioius zoos-** The sweepers should also be exposed to various zoos to know the level of cleanliness they maintain and the techniques they follow.These field visits also help in motivating the staff and help in inculcating habit of cleanliness.

8.5 Sub ordinate staff- Proper supervision of the park is maintained by the subordinate staff which include the Dy rangers, Foresters and Forest guards.In the system those works which are not monitored will not be performed in the long run.It is human tendency.So the role of subordinate staff to monitor the activities of his jurisdiction forms the back bone of well managed zoo.Thus they should be imparted training in

8.5.1Basic principles of exsitu conservation and zoo management-The subordinate staff who supervise various activities should be imparted basic principles of zoo management.So that they can appreciate the importance of various activities such as cleanliness drive, enclosure enrichment, disaster prepardeness, greening the park, animal behavior and animal welfare and visitor management etc.,

8**.5.2 Field visit to various zoos-** The subordinate staff should also be exposed to field visits to gain the knowledge and recent developments in the management and acquire the additional skills. Interaction with the experts in the field helps them inculcate the better management skills.They also appreciate the modern trends in management.

8.6 Office staff- A well trained office staff are more important for proper updating of the informations and keep pace with the recent developments.Presently the staff working have been recruited two decades back, when the computers were almost not existant in the offices.Presently it has become one of the most used machine in an office.The computers have become part of office working.Without the knowledge of computers the office assistant is regarded as illeterate as on date.So computer training for the staff is a prerequisite to keep pace in communicating with other offices.The computer training include the packages regarding MS Office word, Excel, Power point presentations. Depending on the interest shown by the staff they should be imparted higher levels of skills

8.7 Trainings for Biologists and Educators- Trainings and field visits for the Biologists in nutritional requirements of wild animals and balanced diet, animal behavior, breeding biology, group dynamics of animals, manging the herds and herd behavior is compulosry and for the educators the recent trends in imparting awareness and knowledge to visitors is essential.The use of various equipments of awareness such as touch screens, LCD projectors, over head projectors, designing the pamphlets and brochures, communication skills etc.,Many modern equipments, which can enhance visitor experience, are available in the market.Visits to varioius zoos is also important to know about the utility of the gadgets.

8.8 Field visits and Trainings for the administrators- The director and curator should have upto date knowledge of the developments in the zoo management.For this the best way is the field visits and interaction with various zoo managers.The success stories of varioius zoos will help in motivating the manageres.Interaction with the leaders of zoo management also motivates.

8.9 Trainings and interaction visits for veterianry staff- The veterinarians and assistant veterinarians and the compounders also should be exposed to various veterinary hospitals and universities to know about the recent developments in medical science.This helps in bringing down the mortality rate and best of curing the animals.Should also know the experts in the field who can be contacted in the event of emergency.The medical staff should also interact with other zoos and know about the care they have taken in curing some of the complicated diseases.The medical staff also should learn the tagging techniques so that the individual animal can be identified and conservation breeding programme can be properly implemented.

Chapter IX

E- governance

E-goverenance is the short form for electronic governance.In the past the records were mainitained and retrieved manually.The procedure for maintaining and updating of the records was done repeatedly every time.After the introduciton of computers the data input, data processing and data retrieval and data dissemination have become very fast. Once the electronic transfer of the data came by the invention of internet and world wide web popularly known as www the data dissemination has become very fast. The globe appears very close. One can interact with farther places in seconds.The E-governance includes computerisation, internet, fax facility, photocopying, electronic form of ticketing, Visitor surveillance, Website for the zoo, Using ARKS and Med Arks software for managing the inventory of animals, social networking sites etc.,

9.1 Computerisation

Kanpur zoological park has the capability of E-Governance to a limited extent.The zoo at present is using four computers for day to day correspondance.Three computers are available with the Office of the Director and one computer is available with the Veterinarian.The hospital records are fed in to the hospital computer.The computers are fitted with printers. All the computers in the office are on annual maintenance contract with local vendors.

Presently apart from Director and Veterinarian three clerical staff are well worsed with the usage of computers.The inventory reports are generated through computers quarterly.The monthly reports sent to higher authorities have been computerised.Efforts are on to make other staff computer literate.

9.2 Internet

The Director's office has the facility of broad band internet facility from Bharat Sanchar Nigam Limited.It is an unlimited downloading connection.The internet is utilised for emailing, accessing the information regarding the animals availble with various zoological parks.Searching the web regarding various diseases and preventive measures to be adopted.It is also used for coming in touch with zoological parks within and outside the country and helps in exchange of information to keep in touch with modern technical developmens in zoo management. The data of animals of ARKS software is uploaded to internet and to ISIS site.Kanpur Zoological park is one of the pioneers in entering part of its animal data in to ARKS.

9.3 Website (www.kanpurzoo.org)

Website is one of the important tool in the E- governance. Any body can access the information regarding the zoo from any where in the world.Any emergency informations and do's and don'ts, updates of the zoological parks and their collections can be properly communicated through websites.The zoo park at present does not have the website of its own.A home page has been designed for Kanpur Zoo and uploaded to www.forest.up.nic.in, which is an official website of forest department and provide a link for KanpurZoolgical park.The website gives the information regarding the salient features of Kanpur Zoo, the Zoo ethics, the important animals that are available with the zoo, the entry timings, the tariff, the holidays etc. The facility for online booking of tickets can also be introduced in it along with other information.

9.4 Fax

Fax or facsimile is the method of transmitting the written message through a telephone line.The fax message tranmits the image of the paper as such without any modifications.Presently the zoo has one fax machine, which uses thermal paper.Efforts will be made to acquire a laser faxmachine.The output of the laser fax machines doesnot fade out as it happens with the thermal paper.

9.5 Photocopying machine

In earlier days copying a document was one of the most difficult task.The documents were duplicated while preparing the original document with the help of carbon papers.The out put of the carbon paper was illegible and created problems in proper dissemination of the information.Duplicating the originals was only in hand.This may sometimes lead to omission of words and sentences which may ultimately lead to misinterpretation.

Presently the photocopying machine has come so handy that the copies can be duplicated with total clarity.The duplicating is so fast that it saves the time.The photocopying machine functions like a photo.The image of the document is initially formed in the machine and later it is developed and printed.Thus there is no difference between the original document and the document which has been photocopied.Initially only balck and white photocopiers were availble in the market, but as the technology progressed the colour photocipiers are also available which reproduce all the colours.Thus the couloured documents can also be photocopied

9.6 Electronic ticket wending machine

In earlier days the tickets which were sold for the visitors were printed tickets. The tickets had serial number and denomination of the ticket. These sometimes led to malpractice such as recycling of the tickets from the main gate again and again. To avoid this presently electronic ticketing arrangement is made.

The electronic ticketing machine operates on a programme. The details shown on the ticket are the date, time of the ticket and the visitor serial number, and the no of adults, children, students and the vehicle details. At the end of the day the total of the day's transaction is also given in the daily report. At the end of the month the cumulative figure of the entire month is given. Thus there is cross check at every stage. This helped in avoiding misuse at the main gate.

Presently there are four electronic ticket wending machines. Three machines are at the main gate and one at the fish aquarium.

9.7 Booking of tickets through online.

During week days there is not much difficulty in getting the tickets from ticketing windows in the zoo. But on important public holidays such as Republic day(26th January), Independence day(15th August), Teacher's day(5th September), Christmas (25th December), New year's day 1st January etc. and festivals, the rush will be heavy and the people have to stand in the long queues. Many a times people go back without seeing the zoo. To avoid this and to facilitate easy ticketing, online ticketing facility has been introduced.

9.8 Social networking sites-

Now a day the social networking sites are becoming more and more popular. Some of the most known social networking sites are face book, twitter, orkut etc., Many organizations are registered with these sites and get regular feedback on them e.g., the Nagar Nigams register themselves with facebook and upload their developments. They also encourage people to interact with them and upload their complaints with photographs. Once the complaint is uploaded to the site with the photograph such as leaking taps, damaged street lights etc., the problems are rectified by the nigam and the photo of the rectified work is uploaded by the administration. This builds a confidence in public. Social sites will be used to spread the message of conservation and getting feedback from the visitors to improve the overall management of the zoo.

Chapter X Proposed Schedule of operation, Statement of Budget and, Schedule of operation

Financial year--14-15

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction and renovation of peripheral boundary wall.	3700.00 m	626.94
2.	Lying of Zoo rail track (Part).	2000.0m	637.334
3.	Construction of Sloth beer enclosure.	01	36.00
4.	Construction of Walk in aviary.	01	15.26
5.	Construction of clock room and souvenir shop.	01	52.63
6.	Construction of Toilets	04	12.08
7.	Re-construction of Birds of prey Enclosure.(part)	01	10.71
8.	Reconstruction of Pheasant enclosure.	01	23.55
9.	Construction of feeding cell and extension of Tiger enclosure.	01	11.11
10.	Construction of gate, Souvenir shops Clock Room and Guard room.	01	52.00
11.	Walk in aviary	01	15.26
12.	Aviary modification.	01	95.06
13.	Purchase and installation of C.C.T.V. Camera	74	70.00
14.	Renovation and up gradation of deer safari.	01	34.94
15.	Renovation of Sabhar deer enclosure.	01	7.00
16.	Renovation of hyena No-1 enclosure.	01	1.70
17.	Renovation of deer enclosure.	08	32.00
18.	Stand of Barrier	900	11.70
19.	Renovation of Hemadraise Baoon enclosure.	01	5.00
20.	Up-gradation of White peacock enclosure.	01	3.00
21.	Himalayan black beer enclosure	01	4.50
22.	Sloth beer enclosure	01	5.50
23.	Repair of Orang-utan Enclosure and Feeding cell	01	4.5
24.	Repair of Chimpanzee enclosure and feeding cell.	01	2.0
25.	Repair of lion enclosure and feeding cell.	01	3.5
26.	Renovation of Aquarium.	01	20.0
27.	Renovation of Administrative building.	01	23.00
28.	Renovation of Lake View Building	01	15.36
29.	Renovation of Chakoor Auditorium.	01	8.75
30.	Repair painting of nocturnal house.	01	4.0
31.	Repair of Rhino enclosure.	03	9.0
32.	Sterilization of Enclosure	40	10.00
33.	Tour of Employees	-	4.0
34.	development of Children park	-	15.00
35.	Purchase of Garden Tools and Machines.	-	10.0
36.	Purchase of Fire fighting Tools and instruments	-	10.0
37.	Purchase of Water tanker.	-	4.0
38.	Creation of Website.	-	2.0
39.	Purchase of chain links, tin sheets and Fabrication of Cases.	-	5.0
40.	Purchase of Tranquilising gun and Pistols.	-	8.0
41.	Purchase of cleaning machines.	-	4.0

42.	Purchase of 15 KVA Gen Set, 5 KVA Gen Set.	-	4.0
43.	Purchase of Car for Director	-	7.0
44.	Purchase of vehicle for Solid Waste transportation.	-	6.0
45.	Purchase of large vehicle for Food distribution especially for herbivorous	-	15.0
46.	Purchase / exchange of Zoo animals.	-	3.0
47.	Plantation of saplings.	5000	5.0
48.	Creation and developments of Lawn and Garden.	06	25.0
49.	Facilitating drinking water supply system and installation of RO Plants.	10	10.0
50.	Installation of water pipe line for the supply of drinking water.	-	15.00
51.	New boring for Water supply.	-	6.00
52.	Installation of Water posts at different places in the Zoo.	3	6.00
53.	Cable/installation of feeder pillars for providing illuminates to enclosures.	-	8.00
54.	Installation of spot and street solar lights.	-	30.00
55.	Payment of Electricity bills.	-	10.00
56.	Enclosure enrichment works.	-	20.00
57.	Research project activities.	05	12.00
58.	Awareness activities.	08	15.00
59.	Deployment of Biologist Education officer and accountant on contact basis.	01	7.00
60.	Purchase of books and journals for library.	-	3.00
61.	Printing of brochure, stickers Annual report etc.	-	2.00
62.	Books for Library.	-	1.00
63.	Construction of retaining wall near Lion enclosure.	-	4.00
64.	Establishing staff club.	01	15.00
65.	Adaptation of Enclosures and Zoo animals.	01	10.00
66.	Painting and white washing of all enclosures.	23.0	10.00
67.	Maintenance of old singes	15	4.00
68.	Cleaning of moats	55.0	5.00
69.	Diesel, Petrol, oil and Lubricants.	-	10.00
70.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 8 months @5000/month.	25	10.00
71.	Monkey catching and release in wild.	-	5.0
72.	Maintenance of Zoo website.	-	2.0
73.	Health audit of Staff.	95	2.0
74.	Health audit of Schedule 1 animals.	1250	5.0
75.	Purchase of Refrigerator.	01	0.40
76.	Deployment of PRD staff.		5.50
77.	Providing C.U.G. connections to Staff.		2.00
78.	Repairing wireless sets.		10.00
79.	Food for Carnivorous		20.00
80.	Food for herbivorous Omnivorous and for Safari animals.		30.00
81.	Medicines		10.00
	Total		**2295.284**

2015-16

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Running of Zoo train.	2000.0	581.066
2.	Construction of 6 deer enclosure.	06	81.23
3.	Construction of Impatient ward in Hospital.	01	6.60
4.	Construction of Reptile house.	01	126.95
5.	Construction of Gharial, Kayman enclosure.	02	46.23
6.	Construction of three tortoise enclosure of varies species.	03	31.70
7.	Construction of enclosure for Canady species	01	44.69
8.	Construction of enclosure for wild boar.	01	112.24
9.	Construction of monkey enclosure and renovation of monkey enclosure.	01	51.33
10.	Construction of Road bridge over Nala	01	34.86
11.	Construction of Range officers Office, Room for Biologist and education officer.	01	16.00
12.	Main gate in architectural view	01	34.62
13.	walk in aviary (complete)	01	266.74
14.	Renovation and up gradation Meat house	01	6.00
15.	Renovation and up gradation of Nocturnal house.	01	12.0
16.	Renovation and up gradation Store.	01	12.0
17.	Renovation and up gradation Jackal enclosure.	01	6.00
18.	Renovation of hyena no -2	01	2.30
19.	Renovation of Emu Enclosure.	01	5.0
20.	Renovation of Zebra Enclosure.	01	5.0
21.	Renovation of canteen no -2	01	3.84
22.	Renovation of vet hospital and construction of Operation and treatment room.	01	13.03
23.	Repair and renovation of Staff Quarter in the Zoo colony.	26.0	126.12
24.	Repair and painting of office building.	01	1.50
25.	Maintenance of lake view building.	01	15.00
26.	Repair and maintenance of road.	01	15.00
27.	Maintenance of plantation.	-	2.00
28.	Maintenance of lawn and garden.	06	10.00
29.	Maintenance of Fish house.	01	5.00
30.	Maintenance of chakoor house.	01	12.00
31.	Repair & Maintenance enclosure.	20	40.00
32.	Maintenance of RO plant, AMC and all water post.	10	9.00
33.	Maintenance of all Solar power system.	05	2.0
34.	Maintenance of spot and street solar lights.	-	2.0
35.	Maintenance of wireless system.	-	2.0
36.	Maintenance of all vehicles.	03	2.50
37.	Colouring the bole of the trees.	400	1.50
38.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00

39.	Lopping tree and bush hedge cutting.	25.0 ha	7.00
40.	Maintenance of water supply system.	-	5.00
41.	Maintenance of Electricity supply.	-	5.00
42.	Maintenance of Standoff barrier and welded mesh.	1500.0	6.00
43.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , ice, blower , heater , Green cloth etc.	55.0	12.00
44.	Cleaning of sewage tank, moat and water channels.	-	10.00
45.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	8.00
46.	Maintenance of green belts.	-	5.00
47.	Diesel, petrol and lubricants.	-	3.0
48.	Maintenance of Zoo website	-	2.0
49.	Maintenance of C.C.T.V. Camera	-	5.00
50.	Construction of retaining wall near Rhino enclosure.	-	5.00
51.	Construction of retaining wall near monkey enclosure.	-	3.00
52.	Construction of retaining wall in deer Safari enclosure.	-	6.00
53.	Construction of retaining wall near lake view building.	-	4.00
54.	Soil conservation works – Construction of different types of check dams.	-	10.00
55.	Pre Monsoon and Post monsoon tilling operation.	55	7.0
56.	Eradiation of thorny growth from the Enclosures.	7.0 ha	5.0
57.	Eradiation of *prosopis Juliflora* form the Zoo campus.	15.0 ha	6.0
58.	Maintenance of old singes	05	2.00
59.	Cleaning of moats	40	10.00
60.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 8 months @5000/month.	25	10.00
61.	Monkey catching and release in wild.	-	4.0
62.	Regular health Check up - Staff		4.0
63.	Regular health Check up - animal		2.0
64.	Purchase of surgical instruments for animals.		1.0
65.	Deployment of security guards @5000.00 /month for 8 month	12	4.80
66.	Recharging CUG Phones		1.0
67.	Wireless		1.0
68.	Food for Carnivorous		20.00
69.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
70.	Medicines		10.00
71.	Growing Fodder species inside the Zoo.	5.0	30.00
72.	Fuel for Zoo train	1	20.00
73.	Maintenance of Zoo track	2000 mt	5.0
74.	Maintenance of Bogies	5	6.0
75.	Maintenance of railway station , signal , lineman, barrier etc.	01	5.0
		Total	***2029.846***

2016-17

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction of one brow antelope deer enclosure.	01	70.00
2.	Leopard rescue centre - Construction of two panther Karol/ enclosure with two squeezers and twelve feeding cell.	01	210.00
3.	Construction of Ostrich enclosure.	01	55.00
4.	Development of Sarus gallery.	01	75.00
5.	Construction of monkey rescue centre.	01	80.00
6.	Development of up graded Children Park	01	125.00
7.	Renovation of blue bull enclosure.	01	25.00
8.	Renovation of Giraffe enclosure.	01	35.00
9.	Renovation of Zebra enclosure.	01	15.00
10.	Renovation of existing lion enclosure for housing African lion.	01	18.00
11.	Repair and painting of Residential buildings	45	35.00
12.	Repair and painting of cages.	20	1.00
13.	Painting and minor repair of lake view building.	01	3.00
14.	Repair and maintenance of roads and pedestrians.	9	18.00
15.	Maintenance of plantation.	-	2.0
16.	Maintenance of lawn and garden.	12	15.0
17.	Maintenance of Fish house.	01	8.0
18.	Maintenance of nocturnal house.	01	5.0
19.	Maintenance of all herbivorous enclosure.	20	15.0
20.	Maintenance of all carnivorous enclosure.	12	10.0
21.	Maintenance of all other enclosure.	05	8.0
22.	Maintenance of RO plant and all water post.	10	5.0
23.	Maintenance of all Solar power system.	-	5.0
24.	Maintenance of spot and street solar lights.	-	5.0
25.	Maintenance of wireless system.	-	4.0
26.	Maintenance of all vehicles.	3	2.0
27.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
28.	Lopping tree and bush hedge cutting.	25.0 ha	7.00
29.	Maintenance of water supply system.	-	5.00
30.	Maintenance of Electricity supply.	-	8.00
31.	Designing new standoff barrier and maintenance of existing standoff barriers along with welded mesh.	800.00	12.0
32.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	55	15.00
33.	Cleaning of sewage tank, moat and water channels.	-	20.00
34.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
35.	Maintenance of green belts.	-	4.00
36.	Diesel, petrol and lubricants.	-	3.00
37.	Painting of peripheral boundary wall.	-	5.00
38.	Maintenance of Zoo website	-	2.0

39.	Maintenance of C.C.T.V. Camera	-	5.0
40.	Purchase of battery for wireless.	-	2.00
41.	Recharging C.U.G. system.	100	2.00
42.	Purchase of garden equipments.	-	2.00
43.	Purchase of blankets.	-	2.00
44.	Purchase and exchange of Zoo animals.	-	20.0
45.	Changing old water pipe line for the supply of drinking water.	-	5.0
46.	Repair of boring for water supply.	02	4.0
47.	Repair of water posts at different places in the zoo.	-	2.0
48.	Change of old Cable/installation of feeder pillars for providing illuminates to enclosures.	-	2.0
49.	Installation of Solar Powered Fencing in the enclosures.	500	5.0
50.	Enclosure enrichment works.	04	8.00
51.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
52.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
53.	Eradiation of *prosopis Juliflora* form the Zoo campus.	5.0	3.0
54.	Painting and white washing of all enclosures.	55	6.0
55.	Cleaning of moats.	46	9.0
56.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @5000/month.	25	15.00
57.	Monkey catching and release in wild.	-	4.0
58.	Regular health Check up - Staff		4.0
59.	Regular health Check up - animal		2.0
60.	Purchase of surgical instruments for animals.		1.0
61.	Deployment of security guards @5000.00 /month for 12 month	12	7.20
62.	Recharging CUG Phones.		1.0
63.	Wireless maintenance.		1.0
64.	Food for Carnivorous		20.00
65.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
66.	Medicines For Staff and animals.		10.00
67.	Growing fodder species inside the Zoo.	5.0	30.00
68.	Fuel/Energy for Zoo train.	1	20.00
69.	Maintenance of Zoo track	2000 mt	5.0
70.	Maintenance of Bogies	5	6.0
71.	Maintenance of Zoo Railway station, signal, wages of lineman, barrier etc.	01	5.0
	Total		**1193.20**

2017-18

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction of Lion enclosure with Squeezer and six feeding cell.	01	240.00
2.	Construction of Rhinoceros enclosure	04	220.00
3.	Construction of one Gaur enclosure.	01	85.00
4.	Construction of one Black buck enclosure.	01	85.00
5.	Renovation burial ground	01	6.0
6.	Renovation of water tank	02	8.0
7.	Renovation of Post-mortem house.	01	3.0
8.	Renovation of wooden foot bridge	01	5.0
9.	Repair and painting of Residential buildings	45	15.00
10.	Repair and painting of cages.	20	1.00
11.	Painting and minor repair of lake view building.	01	1.00
12.	Repair and maintenance of road.	9	6.00
13.	Maintenance of plantation.	-	1.0
14.	Maintenance of lawn and garden.	12	15.0
15.	Maintenance of Fish house.	01	5.0
16.	Maintenance of nocturnal house.	01	2.0
17.	Maintenance of all herbivorous enclosure.	20	10.0
18.	Maintenance of all carnivorous enclosure.	12	8.0
19.	Maintenance of all other enclosure.	05	4.0
20.	Maintenance of RO plant and all water post.	10	5.0
21.	Maintenance of all Solar power system.	-	5.0
22.	Maintenance of spot and street solar lights.	-	5.0
23.	Maintenance of wireless system.	-	4.0
24.	Maintenance of all vehicles.	3	2.0
25.	Colouring the bole of the trees.	400	4.00
26.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
27.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
28.	Maintenance of water supply system.	-	5.00
29.	Maintenance of Electricity supply.	-	6.00
30.	Maintenance of Standoff barrier and welded mesh.	800	12.0
31.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
32.	Cleaning of sewage tank, moat and water channels.	-	15.00
33.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
34.	Maintenance of green belts.	-	4.00
35.	Diesel, petrol and lubricants.	-	3.00
36.	Painting of peripheral boundary wall.	-	4.00
37.	Maintenance of C.C.T.V. Camera	-	5.0
38.	Maintenance of zoo rail track, bogies, station, lineman, and shed etc.	-	20.00
39.	Development of garden and lawns.	1	8.00
40.	Changing old water pipe line for the supply of drinking water.	-	5.0
41.	Repair of boring for water supply.	02	4.0
42.	Repair of water posts at different places in the zoo.	-	2.0

43.	Change of old Cable/installation of feeder pillars for providing illuminates to enclosures.	-	2.0
44.	Installation of Solar Powered Fencing in the enclosures.	500 mt	5.0
45.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
46.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
47.	Eradiation of *prosopis Juliflora* form the Zoo campus.	5.0	3.0
48.	Land escaping undulated lands	10.0 ha	20.0
49.	Maintenance and up gradation of viewers Path	1900.00 mt	35.00
50.	Painting and white washing of all enclosures.	55	6.0
51.	Cleaning of wet and dry moat	46	9.0
52.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @5000/month.	25	15.00
53.	Monkey catching and release in wild.	-	4.0
54.	Maintenance of Zoo website	-	2.0
55.	Regular health Check up - Staff		4.0
56.	Regular health Check up - animal		2.0
57.	Purchase of surgical instruments for animals.		1.0
58.	Deployment of security guards @5000.00 /month for 12 month	12	7.20
59.	Recharging CUG Phones		2.0
60.	Wireless		3.0
61.	Food for Carnivorous		20.00
62.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
63.	Medicines		10.00
64.	Growing Fodder species inside the Zoo.	5.0	30.00
65.	Fuel for Zoo train	1	20.00
66.	Maintenance of Zoo track	2000 mt	5.0
67.	Maintenance of Bogies	5	6.0
68.	Maintenance of railway station , signal , lineman, barrier etc.	01	5.0
69.	Construction of Sewage tank	16	7.00
70.	Construction of Sewerage pipe line	1.0 km	25.0
71.	Construction of Drainage.	1.0 km	19.00
72.	Construction of Compost Chember.	10	8.00
	Total		***1181.20***

2018-19

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction of culverts.	05	30.0
2.	Construction of rain shed.	02	8.0
3.	Constriction of open theatre.	01	65.0
4.	Construction of labour huts in the residential area.	04	6.0
5.	Construction of touring officer quarter.	01	50.0
6.	Renovation of store	01	12.0
7.	Up gradation of meat house	01	4.0
8.	Repair and painting of Residential buildings	45	16.00
9.	Repair and painting of cages.	20	2.00
10.	Painting and minor repair of lake view building.	01	2.00
11.	Repair and maintenance of road.	9	7.00
12.	Maintenance of plantation.	-	1.0
13.	Maintenance of lawn and garden.	12	18.0
14.	Maintenance of Fish house.	01	5.0
15.	Maintenance of nocturnal house.	01	2.0
16.	Maintenance of all herbivorous enclosure.	20	10.0
17.	Maintenance of all carnivorous enclosure.	12	8.0
18.	Maintenance of all other enclosure.	05	4.0
19.	Maintenance of RO plant and all water post.	10	5.0
20.	Maintenance of all Solar power system.	-	5.0
21.	Maintenance of spot and street solar lights.	-	5.0
22.	Maintenance of wireless system.	-	4.0
23.	Maintenance of all vehicles.	3	2.0
24.	Colouring the bole of the trees.	400	4.00
25.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
26.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
27.	Maintenance of water supply system.	-	5.00
28.	Maintenance of Electricity supply.	-	6.00
29.	Maintenance of Standoff barrier and welded mesh.	800	12.0
30.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
31.	Cleaning of sewage tank, moat and water channels.	-	15.00
32.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
33.	Maintenance of green belts.	-	4.00
34.	Diesel, petrol and lubricants.	-	3.00
35.	Painting of peripheral boundary wall.	-	4.00
36.	Purchase of battery for wireless.	-	2.00
37.	Recharging C.U.G. system.	100	2.00
38.	Purchase of garden equipments.	-	2.00
39.	Purchase of fish.	-	3.00
40.	Purchase of blanckets.	-	2.00
41.	Purchase and exchange of Zoo animals.	-	20.0
42.	Purchase of vehicle for Doctor, A.C.. and Range officers.	04	35.00

43.	Development of garden and lawns.	1	8.00
44.	Changing old water pipe line for the supply of drinking water.	-	5.0
45.	Boring for water supply.	02	4.0
46.	Repair of water posts at different places in the zoo.	-	2.0
47.	Regular electricity works and payment of bills	-	20.0
48.	Installation of Solar Powered Fencing in the enclosures.	500 mt	5.0
49.	Research project activities.	01	2.0
50.	Awareness activities.	5	2.0
51.	Purchase of books and journals for library.	-	2.0
52.	Printing of brochure, stickers Annual report etc.	-	1.0
53.	Books for Library.	-	0.50
54.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
55.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
56.	Land scapinging undulated lands	10.0 ha	20.0
57.	Painting and white washing of all enclosures.	55	6.0
58.	Cleaning of wet and dry moat	46	9.0
59.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @5000/month.	25	15.00
60.	Monkey catching and release in wild.	-	4.0
61.	Regular health Check up - Staff		4.0
62.	Regular health Check up - animal		2.0
63.	Purchase of surgical instruments for animals.		1.0
64.	Deployment of security guards @5000.00 /month for 12 month	12	7.20
65.	Recharging CUG Phones		2.0
66.	Wireless		3.0
67.	Food for Carnivorous		20.00
68.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
69.	Medicines		10.00
70.	Growing Fodder species inside the Zoo.	5.0	30.00
71.	Fuel for Zoo train	1	20.00
72.	Maintenance of Zoo track	2000 mt	5.0
73.	Maintenance of Bogies	5	6.0
74.	Maintenance of railway station , signal , lineman, barrier etc.	01	5.0
		Total	***678.70***

2019-20

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Off display breeding centre for Rhinoceros	01	72.00
2.	Construction of officers residence type IV	01	60.0
3.	Construction of culvert.	05	45.0
4.	Repair and painting of Residential buildings	45	16.00
5.	Repair and maintenance of road.	9	7.00
6.	Maintenance of plantation.	-	1.0
7.	Maintenance of lawn and garden.	12	18.0
8.	Maintenance of Fish house.	01	5.0
9.	Maintenance of nocturnal house.	01	2.0
10.	Maintenance of all herbivorous enclosure.	20	10.0
11.	Maintenance of all carnivorous enclosure.	12	8.0
12.	Maintenance of all other enclosure.	05	4.0
13.	Maintenance of RO plant and all water post.	10	5.0
14.	Maintenance of all Solar power system.	-	5.0
15.	Maintenance of spot and street solar lights.	-	5.0
16.	Maintenance of wireless system.	-	4.0
17.	Maintenance of all vehicles.	3	2.0
18.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
19.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
20.	Maintenance of water supply system.	-	5.00
21.	Maintenance of Electricity supply.	-	6.00
22.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
23.	Cleaning of sewage tank, moat and water channels.	-	15.00
24.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
25.	Maintenance of green belts.	-	4.00
26.	Diesel, petrol and lubricants.	-	3.00
27.	Painting of peripheral boundary wall.	-	4.00
28.	Purchase of garden equipments.	-	2.00
29.	Purchase of fish.	-	3.00
30.	Purchase of blankets.	-	2.00
31.	Purchase and exchange of Zoo animals.	-	20.0
32.	Development of garden and lawns.	1	8.00
33.	Repair of water posts at different places in the zoo.	-	2.0
34.	Regular electricity works and payment of bills	-	20.0
35.	Installation of Solar Powered Fencing in the enclosures.	500 mt	5.0
36.	Research project activities.	01	2.0
37.	Awareness activities.	5	2.0
38.	Purchase of books and journals for library.	-	2.0
39.	Printing of brochure, stickers Annual report etc.	-	1.0
40.	Books for Library.	-	0.50
41.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
42.	Land scapinging undulated lands	10.0 ha	20.0

43.	Maintenance and up gradation of viewers Path	800.00 mt	25.0
44.	Painting and white washing of all enclosures.	55	6.0
45.	Cleaning of wet and dry moat	46	9.0
46.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @5000/month.	25	15.00
47.	Monkey catching and release in wild.	-	4.0
48.	Growing Fodder species inside the Zoo.	-	30.00
49.	Food for Carnivorous.	-	30.0
50.	Food for Herbivorous.	-	40.0
51.	Food for Omn. .	-	10.0
52.	Food for Safari animals.	-	8.00
53.	Fuel for Zoo train	1	20.00
54.	Maintenance of Zoo track	2000 mt	5.0
55.	Maintenance of Bogies	5	6.0
56.	Maintenance of railway station , signal , lineman, barrier etc.	01	5.0
	TOTAL		**640.50**

2020-21

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Reconstruction of Roads	9.0 km	90.0
2.	Construction of Rain Shed	5	50.0
3.	Construction of keepers hut	10	50.0
4.	Construction of type II Quarters	3	45.00
5.	Construction of type I Quarters	5	35.00
6.	Extension of meat house	01	6.0
7.	Repair and painting of Residential buildings	45	16.00
8.	Repair and painting of cages.	10	1.00
9.	Painting and minor repair of lake view building.	01	2.00
10.	Repair and maintenance of roads.	9	7.00
11.	Maintenance of plantation.	-	1.0
12.	Maintenance of lawn and garden.	12	18.0
13.	Maintenance of aquarium.	01	5.0
14.	Maintenance of nocturnal house.	01	2.0
15.	Maintenance of all herbivorous enclosure.	20	10.0
16.	Maintenance of all carnivorous enclosure.	12	8.0
17.	Maintenance of all other enclosure.	05	4.0
18.	Maintenance of RO plant and all water post.	10	5.0
19.	Maintenance of all Solar power system.	-	5.0
20.	Maintenance of spot and street solar lights.	-	5.0
21.	Maintenance of wireless system.	-	4.0
22.	Maintenance of all vehicles.	3	2.0
23.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
24.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
25.	Maintenance of water supply system.	-	5.00
26.	Maintenance of Electricity supply.	-	6.00
27.	Maintenance of Standoff barrier and welded mesh.	800	12.0
28.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
29.	Cleaning of sewage tank, moat and water channels.	-	15.00
30.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
31.	Maintenance of green belts.	-	4.00
32.	Diesel, petrol and lubricants.	-	3.00
33.	Painting of peripheral boundary wall.	-	4.00
34.	Purchase of battery for wireless.	-	2.00
35.	Recharging C.U.G. system.	100	2.00
36.	Purchase of garden equipments.	-	2.00
37.	Purchase of fish.	-	3.00
38.	Purchase of blankets.	-	2.00
39.	Purchase and exchange of Zoo animals.	-	20.0
40.	Development of garden and lawns.	1	8.00
41.	Changing old water pipe line for the supply of drinking	-	5.0

	water.		
42.	Boring for water supply.	02	4.0
43.	Repair of water posts at different places in the zoo.	-	2.0
44.	Regular electricity works and payment of bills	-	20.0
45.	Installation of Solar Powered Fencing in the enclosures.	500 mt	5.0
46.	Research project activities.	01	2.0
47.	Awareness activities.	5	2.0
48.	Purchase of books and journals for library.	-	2.0
49.	Printing of brochure, stickers Annual report etc.	-	1.0
50.	Books for Library.	-	0.50
51.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
52.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
53.	Land escaping undulated lands	10.0 ha	20.0
54.	Painting and white washing of all enclosures.	55	6.0
55.	Cleaning of wet and dry moat	46	9.0
56.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
57.	Regular health Check up - Staff		4.0
58.	Regular health Check up - animal		2.0
59.	Purchase of surgical instruments for animals.		1.0
60.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
61.	Recharging CUG Phones		1.0
62.	Wireless		2.0
63.	Food for Carnivorous		20.00
64.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
65.	Medicines		10.00
66.	Growing Fodder species inside the Zoo.	5.0	30.00
67.	Fuel for Zoo train	1	20.00
68.	Maintenance of Zoo track	2000 mt	5.0

2021-22

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction of Rain/Sun Shed	5.0	10.0
2.	Construction of keeper and Chaukidars hut	5	10.0
3.	Construction of Tiger Enclosure.	1	75.0
4.	Reconstruction of Roads	2.0	15.00
5.	Repair and painting of Residential buildings	12	4.00
6.	Repair and painting of cages.	20	2.00
7.	Painting and minor repair of lake view building.	01	2.00
8.	Repair and maintenance of roads.	5 km	7.00
9.	Maintenance of plantation.	-	1.0
10.	Maintenance of lawn and garden.	12	18.0
11.	Maintenance of aquarium.	01	5.0
12.	Maintenance of nocturnal house.	01	2.0
13.	Maintenance of all herbivorous enclosure.	20	10.0
14.	Maintenance of all carnivorous enclosure.	6	8.0
15.	Maintenance of all other enclosure.	05	4.0
16.	Maintenance of RO plant and all water post.	10	5.0
17.	Maintenance of all Solar power system.	-	5.0
18.	Maintenance of spot and street solar lights.	-	5.0
19.	Maintenance of wireless system.	-	4.0
20.	Maintenance of all vehicles.	3	2.0
21.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
22.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
23.	Maintenance of water supply system.	-	5.00
24.	Maintenance of Electricity supply.	-	6.00
25.	Maintenance of Standoff barrier and welded mesh.	800	12.0
26.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
27.	Cleaning of sewage tank, moat and water channels.	-	15.00
28.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
29.	Maintenance of green belts.	-	4.00
30.	Diesel, petrol and lubricants.	-	3.00
31.	Painting of peripheral boundary wall.	-	4.00
32.	Purchase of battery for wireless.	-	2.00
33.	Recharging C.U.G. system.	100	2.00
34.	Purchase of garden equipments.	-	2.00
35.	Purchase of fish.	-	3.00
36.	Purchase of blankets.	-	2.00
37.	Purchase and exchange of Zoo animals.	-	20.0
38.	Development of garden and lawns.	1	8.00
39.	Changing old water pipe line for the supply of drinking water.	-	5.0
40.	Repair of water posts at different places in the zoo.	-	2.0
41.	Regular electricity works and payment of bills	-	20.0

42.	Research project activities.	01	2.0
43.	Awareness activities.	5	2.0
44.	Purchase of books and journals for library.	-	2.0
45.	Printing of brochure, stickers Annual report etc.	-	1.0
46.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
47.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
48.	Land escaping undulated lands	10.0 ha	20.0
49.	Painting and white washing of all enclosures.	55	6.0
50.	Cleaning of wet and dry moat	46	9.0
51.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
52.	Regular health Check up - Staff		4.0
53.	Regular health Check up - animal		2.0
54.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
55.	Recharging CUG Phones		1.0
56.	Wireless		2.0
57.	Food for Carnivorous		20.00
58.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
59.	Medicines		10.00
60.	Growing Fodder species inside the Zoo.	5.0	30.00
61.	Fuel for Zoo train	1	20.00
62.	Maintenance of Zoo track	2000 mt	5.0
	Total		**551.00**

2022-23

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction of Off display tiger breeding centre.	01	80.0
2.	Construction of off display hyena breeding centre	01	50.0
3.	Construction of off display breeding centre for Swamp deer.	01	78.00
4.	Construction of toe wall on the Banks of Road	800mt	40.0
5.	Repair and painting of Residential buildings	20	10.00
6.	Repair and painting of cages.	20	2.00
7.	Painting and minor repair of lake view building.	01	2.00
8.	Repair and maintenance of roads.	2 km	3.00
9.	Maintenance of plantation.	-	1.0
10.	Maintenance of lawn and garden.	12	18.0
11.	Maintenance of aquarium.	01	5.0
12.	Maintenance of nocturnal house.	01	2.0
13.	Maintenance of all herbivorous enclosure.	20	12.0
14.	Maintenance of all carnivorous enclosure.	6	10.0
15.	Maintenance of all other enclosure.	05	5.0
16.	Maintenance of RO plant and all water post.	10	5.0
17.	Maintenance of all Solar power system.	-	5.0
18.	Maintenance of spot and street solar lights.	-	5.0
19.	Maintenance of wireless system.	-	4.0
20.	Maintenance of all vehicles.	3	2.0
21.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
22.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
23.	Maintenance of water supply system.	-	5.00
24.	Maintenance of Electricity supply.	-	6.00
25.	Maintenance of Standoff barrier and welded mesh.	200.00	6.0
26.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
27.	Cleaning of sewage tank, moat and water channels.	-	15.00
28.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
29.	Maintenance of green belts.	-	4.00
30.	Diesel, petrol and lubricants.	-	3.00
31.	Painting of peripheral boundary wall.	-	4.00
32.	Purchase of battery for wireless.	-	2.00
33.	Recharging C.U.G. system.	100	2.00
34.	Purchase of garden equipments.	-	2.00
35.	Purchase of fish.	-	3.00
36.	Purchase of blankets.	-	2.00
37.	Purchase and exchange of Zoo animals.	-	20.0
38.	Development of garden and lawns.	1	8.00
39.	Changing old water pipe line for the supply of drinking	-	5.0

	water.		
40.	Repair of water posts at different places in the zoo.	-	2.0
41.	Regular electricity works and payment of bills	-	20.0
42.	Research project activities.	01	2.0
43.	Awareness activities.	5	2.0
44.	Purchase of books and journals for library.	-	2.0
45.	Printing of brochure, stickers Annual report etc.	-	1.0
46.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
47.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
48.	Land escaping undulated lands	10.0 ha	20.0
49.	Painting and white washing of all enclosures.	55	6.0
50.	Cleaning of wet and dry moat	46	9.0
51.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
52.	Regular health Check up - Staff		4.0
53.	Regular health Check up - animal		2.0
54.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
55.	Recharging CUG Phones		1.0
56.	Wireless		2.0
57.	Food for Carnivorous		20.00
58.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
59.	Medicines		10.00
60.	Growing Fodder species inside the Zoo.	5.0	30.00
61.	Fuel for Zoo train	1	20.00
62.	Maintenance of Zoo track	2000 mt	5.0
63.	Cost of water for the filling of Ganga river water in the lake.	18.0 ha	30.0
	Total		**720.00**

2023-24

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Zoo lake enrichment programme.	01	80.0
2.	Construction of toe wall near lake view building.	60.0	9.0
3.	Repair and painting of Residential buildings	20	10.00
4.	Repair and painting of cages.	20	2.00
5.	Painting and minor repair of lake view building.	01	2.00
6.	Repair and maintenance of roads.	4 km	6.00
7.	Maintenance of plantation.	-	1.0
8.	Maintenance of lawn and garden.	12	20.0
9.	Maintenance of aquarium.	01	8.0
10.	Maintenance of nocturnal house.	01	2.0
11.	Maintenance of all herbivorous enclosure.	20	30.0
12.	Maintenance of all carnivorous enclosure.	6	15.0
13.	Maintenance of all other enclosure.	05	5.0
14.	Maintenance of RO plant and all water post.	10	5.0
15.	Maintenance of all Solar power system.	-	5.0
16.	Maintenance of spot and street solar lights.	-	5.0
17.	Maintenance of wireless system.	-	4.0
18.	Maintenance of all vehicles.	3	2.0
19.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
20.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
21.	Maintenance of water supply system.	-	5.00
22.	Maintenance of Electricity supply.	-	6.00
23.	Maintenance of Standoff barrier and welded mesh.	200.00	6.0
24.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
25.	Cleaning of sewage tank, moat and water channels.	-	15.00
26.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
27.	Maintenance of green belts.	-	4.00
28.	Diesel, petrol and lubricants.	-	3.00
29.	Painting of peripheral boundary wall.	-	4.00
30.	Purchase of battery for wireless.	-	2.00
31.	Recharging C.U.G. system.	100	2.00
32.	Purchase of garden equipments.	-	2.00
33.	Purchase of fish.	-	3.00
34.	Purchase of blankets.	-	2.00
35.	Purchase and exchange of Zoo animals.	-	20.0
36.	Development of garden and lawns.	1	8.00
37.	Changing old water pipe line for the supply of drinking water.	-	5.0
38.	Repair of water posts at different places in the zoo.	-	2.0

39.	Regular electricity works and payment of bills	-	20.0
40.	Research project activities.	01	2.0
41.	Awareness activities.	5	2.0
42.	Purchase of books and journals for library.	-	2.0
43.	Printing of brochure, stickers Annual report etc.	-	1.0
44.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
45.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
46.	Land escaping undulated lands	10.0 ha	20.0
47.	Painting and white washing of all enclosures.	55	6.0
48.	Cleaning of wet and dry moat	46	9.0
49.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
50.	Regular health Check up - Staff		4.0
51.	Regular health Check up - animal		2.0
52.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
53.	Recharging CUG Phones		1.0
54.	Wireless		2.0
55.	Food for Carnivorous		20.00
56.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
57.	Medicines		10.00
58.	Growing Fodder species inside the Zoo.	5.0	30.00
59.	Fuel for Zoo train	1	20.00
60.	Maintenance of Zoo track	2000 mt	5.0
	TOTAL		**562.00**

2024-25

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Construction of New Administrative Building.	01	75.00
2.	Construction of New hospital building.	01	50.0
3.	Land escaping and beautification works along the main road from gate to Zebra enclosure.	5.2 km	45.00
4.	Repair and painting of Residential buildings.	20	10.00
5.	Repair and painting of cages.	20	2.00
6.	Maintenance of RO plant and all water post.	10	5.0
7.	Maintenance of all Solar power system.	-	5.0
8.	Maintenance of spot and street solar lights.	-	5.0
9.	Maintenance of wireless system.	-	4.0
10.	Maintenance of all vehicles.	3	2.0
11.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
12.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
13.	Maintenance of water supply system.	-	5.00
14.	Painting and minor repair of lake view building.	01	2.00
15.	Repair and maintenance of roads.	4 km	6.00
16.	Maintenance of plantation.	-	1.0
17.	Maintenance of Electricity supply.	-	6.00
18.	Maintenance of Standoff barrier and welded mesh.	200.00	6.0
19.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
20.	Maintenance of lawn and garden.	12	20.0
21.	Maintenance of aquarium.	01	8.0
22.	Maintenance of nocturnal house.	01	2.0
23.	Maintenance of all herbivorous enclosure.	20	30.0
24.	Maintenance of all carnivorous enclosure.	6	15.0
25.	Maintenance of all other enclosure.	05	5.0
26.	Changing old water pipe line for the supply of drinking water.	-	5.0
27.	Repair of water posts at different places in the zoo.	-	2.0
28.	Regular electricity works and payment of bills	-	20.0
29.	Research project activities.	01	2.0
30.	Awareness activities.	5	2.0
31.	Purchase of books and journals for library.	-	2.0
32.	Printing of brochure, stickers Annual report etc.	-	1.0
33.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
34.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
35.	Land escaping undulated lands	10.0 ha	20.0
36.	Painting and white washing of all enclosures.	55	6.0
37.	Cleaning of wet and dry moat	46	9.0
38.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
39.	Cleaning of sewage tank, moat and water channels.	-	15.00

40.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
41.	Maintenance of green belts.	-	4.00
42.	Diesel, petrol and lubricants.	-	3.00
43.	Painting of peripheral boundary wall.	-	4.00
44.	Purchase of battery for wireless.	-	2.00
45.	Recharging C.U.G. system.	100	2.00
46.	Purchase of garden equipments.	-	2.00
47.	Purchase of fish.	-	3.00
48.	Purchase of blankets.	-	2.00
49.	Purchase and exchange of Zoo animals.	-	20.0
50.	Development of garden and lawns.	1	8.00
51.	Regular health Check up - Staff		4.0
52.	Regular health Check up - animal		2.0
53.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
54.	Recharging CUG Phones		1.0
55.	Wireless		2.0
56.	Food for Carnivorous		20.00
57.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
58.	Medicines		10.00
59.	Growing Fodder species inside the Zoo.	5.0	30.00
60.	Fuel for Zoo train	1	20.00
61.	Maintenance of Zoo track	2000 mt	5.0
	Total		**643.00**

2025-26

S. No.	**Item of works**	Quantum of work	Expenditure in Lacs Rs.
1	**2**	**3**	**4**
1.	Maintenance of peripheral boundary wall.	3700.00mt	20.00
2.	Maintenance of Sloth beer enclosure.	01	5.00
3.	Maintenance of Walk in aviary.	01	2.0
4.	Maintenance of clock room and souvenir shop.	01	2.0
5.	Maintenance of Deer enclosure	20	25.0
6.	Maintenance of monkey house	01	3.0
7.	Maintenance of Snake house.	01	5.0
8.	Maintenance of Gharial and kayman houses.	01	3.0
9.	Maintenance of Toilets	04	6.0
10.	Maintenance of Birds of prey Enclosure.	01	5.0
11.	Maintenance of Pheasant enclosure.	01	5.0
12.	White wash of gate, Souvenir shops Clock Room and Guard room	01	4.0
13.	Walk in aviary Maintenance	01	2.0
14.	Aviary Maintenance.	01	3.0
15.	Maintenance of Stand of Barrier	900	6.0
16.	Up-gradation of White peacock enclosure.	01	3.00
17.	Renovation of Aquarium.	01	20.0
18.	Growing Fodder species inside the Zoo.	5.0	30.00
19.	Fuel for Zoo train	1	20.00
20.	Maintenance of Zoo track	2000 mt	5.0
21.	Medicines		10.00
22.	Purchase / exchange of Zoo animals.	-	3.0
23.	Facilitating drinking water supply system and installation of RO Plants.	10	10.0
24.	Payment of Electricity bills.	-	10.00
25.	Enclosure enrichment works.	-	20.00
26.	Research project activities.	05	12.00
27.	Awareness activities.	08	15.00
28.	Purchase of books and journals for library.	-	3.00
29.	Printing of brochure, stickers Annual report etc.	-	2.00
30.	Books for Library.	-	1.00
31.	Maintenance of old singes	15	4.00
32.	Cleaning of moats	55.0	5.00
33.	Diesel, Petrol, oil and Lubricants.	-	10.00
34.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12 months @8000/month.	25	24.0
35.	Maintenance of Zoo website.	-	2.0
36.	Health audit of Staff.	95	2.0
37.	Health audit of Schedule 1 animals.	-	5.0
38.	Deployment of PRD staff.	-	5.50
39.	Providing C.U.G. connections to Staff.	100	1.00
40.	Repairing wireless sets.	-	2.0
41.	Food for Carnivorous		20.00
42.	Food for herbivorous Omnivorous and for Safari animals.		30.00
	Total		**370.5**

2026-27

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Repair and painting of Residential buildings	45	16.00
2.	Repair and painting of cages.	10	1.00
3.	Painting and minor repair of lake view building.	01	2.00
4.	Repair and maintenance of roads.	9	7.00
5.	Maintenance of plantation.	-	1.0
6.	Maintenance of lawn and garden.	12	18.0
7.	Maintenance of aquarium.	01	5.0
8.	Maintenance of nocturnal house.	01	2.0
9.	Maintenance of all herbivorous enclosure.	20	10.0
10.	Maintenance of all carnivorous enclosure.	12	8.0
11.	Maintenance of all other enclosure.	05	4.0
12.	Maintenance of RO plant and all water post.	10	5.0
13.	Maintenance of all Solar power system.	-	5.0
14.	Maintenance of spot and street solar lights.	-	5.0
15.	Maintenance of wireless system.	-	4.0
16.	Maintenance of all vehicles.	3	2.0
17.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
18.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
19.	Maintenance of water supply system.	-	5.00
20.	Maintenance of Electricity supply.	-	6.00
21.	Maintenance of Standoff barrier and welded mesh.	800	12.0
22.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
23.	Cleaning of sewage tank, moat and water channels.	-	15.00
24.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
25.	Maintenance of green belts.	-	4.00
26.	Diesel, petrol and lubricants.	-	3.00
27.	Painting of peripheral boundary wall.	-	4.00
28.	Purchase of battery for wireless.	-	2.00
29.	Recharging C.U.G. system.	100	2.00
30.	Purchase of garden equipments.	-	2.00
31.	Purchase of fish.	-	3.00
32.	Purchase of blankets.	-	2.00
33.	Purchase and exchange of Zoo animals.	-	20.0
34.	Development of garden and lawns.	1	8.00
35.	Changing old water pipe line for the supply of drinking water.	-	5.0
36.	Boring for water supply.	02	4.0
37.	Repair of water posts at different places in the zoo.	-	2.0
38.	Regular electricity works and payment of bills	-	20.0
39.	Installation of Solar Powered Fencing in the enclosures.	500 mt	5.0
40.	Research project activities.	01	2.0
41.	Awareness activities.	5	2.0

42.	Purchase of books and journals for library.	-	2.0
43.	Printing of brochure, stickers Annual report etc.	-	1.0
44.	Books for Library.	-	0.50
45.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
46.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
47.	Land escaping undulated lands	10.0 ha	20.0
48.	Painting and white washing of all enclosures.	55	6.0
49.	Cleaning of wet and dry moat	46	9.0
50.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
51.	Regular health Check up - Staff		4.0
52.	Regular health Check up - animal		2.0
53.	Purchase of surgical instruments for animals.		1.0
54.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
55.	Recharging CUG Phones		1.0
56.	Wireless		2.0
57.	Food for Carnivorous		20.00
58.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
59.	Medicines		10.00
60.	Growing Fodder species inside the Zoo.	5.0	30.00
61.	Fuel for Zoo train	1	20.00
62.	Maintenance of Zoo track	2000 mt	5.0
	Total		**462.5**

2027-28

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Repair and painting of cages.	20	2.00
2.	Painting and minor repair of lake view building.	01	2.00
3.	Repair and maintenance of roads.	5 km	7.00
4.	Maintenance of plantation.	-	1.0
5.	Maintenance of lawn and garden.	12	18.0
6.	Maintenance of aquarium.	01	5.0
7.	Maintenance of nocturnal house.	01	2.0
8.	Maintenance of all herbivorous enclosure.	20	10.0
9.	Maintenance of all carnivorous enclosure.	6	8.0
10.	Maintenance of all other enclosure.	05	4.0
11.	Maintenance of RO plant and all water post.	10	5.0
12.	Maintenance of all Solar power system.	-	5.0
13.	Maintenance of spot and street solar lights.	-	5.0
14.	Maintenance of wireless system.	-	4.0
15.	Maintenance of all vehicles.	3	2.0
16.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
17.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
18.	Maintenance of water supply system.	-	5.00

19.	Maintenance of Electricity supply.	-	6.00
20.	Maintenance of Standoff barrier and welded mesh.	800	12.0
21.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
22.	Cleaning of sewage tank, moat and water channels.	-	15.00
23.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
24.	Maintenance of green belts.	-	4.00
25.	Diesel, petrol and lubricants.	-	3.00
26.	Painting of peripheral boundary wall.	-	4.00
27.	Purchase of battery for wireless.	-	2.00
28.	Recharging C.U.G. system.	100	2.00
29.	Purchase of garden equipments.	-	2.00
30.	Purchase of fish.	-	3.00
31.	Purchase of blankets.	-	2.00
32.	Purchase and exchange of Zoo animals.	-	20.0
33.	Development of garden and lawns.	1	8.00
34.	Changing old water pipe line for the supply of drinking water.	-	5.0
35.	Repair of water posts at different places in the zoo.	-	2.0
36.	Regular electricity works and payment of bills	-	20.0
37.	Research project activities.	01	2.0
38.	Awareness activities.	5	2.0
39.	Purchase of books and journals for library.	-	2.0
40.	Printing of brochure, stickers Annual report etc.	-	1.0
41.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
42.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
43.	Land escaping undulated lands	10.0 ha	20.0
44.	Painting and white washing of all enclosures.	55	6.0
45.	Cleaning of wet and dry moat	46	9.0
46.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
47.	Regular health Check up - Staff		4.0
48.	Regular health Check up - animal		2.0
49.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
50.	Recharging CUG Phones		1.0
51.	Wireless		2.0
52.	Food for Carnivorous		20.00
53.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
54.	Medicines		10.00
55.	Growing Fodder species inside the Zoo.	5.0	30.00
56.	Fuel for Zoo train	1	20.00
57.	Maintenance of Zoo track	2000 mt	5.0
	Total		**437.00**

2028-29

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Repair and painting of cages.	20	2.00
2.	Painting and minor repair of lake view building.	01	2.00
3.	Repair and maintenance of roads.	2 km	3.00
4.	Maintenance of plantation.	-	1.0
5.	Maintenance of lawn and garden.	12	18.0
6.	Maintenance of aquarium.	01	5.0
7.	Maintenance of nocturnal house.	01	2.0
8.	Maintenance of all herbivorous enclosure.	20	12.0
9.	Maintenance of all carnivorous enclosure.	6	10.0
10.	Maintenance of all other enclosure.	05	5.0
11.	Maintenance of RO plant and all water post.	10	5.0
12.	Maintenance of all Solar power system.	-	5.0
13.	Maintenance of spot and street solar lights.	-	5.0
14.	Maintenance of wireless system.	-	4.0
15.	Maintenance of all vehicles.	3	2.0
16.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
17.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
18.	Maintenance of water supply system.	-	5.00
19.	Maintenance of Electricity supply.	-	6.00
20.	Maintenance of Standoff barrier and welded mesh.	200.00	6.0
21.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
22.	Cleaning of sewage tank, moat and water channels.	-	15.00
23.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
24.	Maintenance of green belts.	-	4.00
25.	Diesel, petrol and lubricants.	-	3.00
26.	Painting of peripheral boundary wall.	-	4.00
27.	Purchase of battery for wireless.	-	2.00
28.	Recharging C.U.G. system.	100	2.00
29.	Purchase of garden equipments.	-	2.00
30.	Purchase of fish.	-	3.00
31.	Purchase of blankets.	-	2.00
32.	Purchase and exchange of Zoo animals.	-	20.0
33.	Development of garden and lawns.	1	8.00
34.	Changing old water pipe line for the supply of drinking water.	-	5.0
35.	Repair of water posts at different places in the zoo.	-	2.0
36.	Regular electricity works and payment of bills	-	20.0
37.	Research project activities.	01	2.0
38.	Awareness activities.	5	2.0
39.	Purchase of books and journals for library.	-	2.0
40.	Printing of brochure, stickers Annual report etc.	-	1.0

41.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
42.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
43.	Land escaping undulated lands	10.0 ha	20.0
44.	Painting and white washing of all enclosures.	55	6.0
45.	Cleaning of wet and dry moat	46	9.0
46.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
47.	Regular health Check up - Staff		4.0
48.	Regular health Check up - animal		2.0
49.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
50.	Recharging CUG Phones		1.0
51.	Wireless		2.0
52.	Food for Carnivorous		20.00
53.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
54.	Medicines		10.00
55.	Growing Fodder species inside the Zoo.	5.0	30.00
56.	Fuel for Zoo train	1	20.00
57.	Maintenance of Zoo track	2000 mt	5.0
58.	Cost of water for the filling of Ganga river water in the lake.	18.0 ha	30.0
	Total		**462.00**

2029-30

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Repair and maintenance of toe wall near lake view building.	60.0	9.0
2.	Repair and painting of Residential buildings	20	10.00
3.	Repair and painting of cages.	20	2.00
4.	Painting and minor repair of lake view building.	01	2.00
5.	Repair and maintenance of roads.	4 km	6.00
6.	Maintenance of plantation.	-	1.0
7.	Maintenance of lawn and garden.	12	20.0
8.	Maintenance of aquarium.	01	8.0
9.	Maintenance of nocturnal house.	01	2.0
10.	Maintenance of all herbivorous enclosure.	20	30.0
11.	Maintenance of all carnivorous enclosure.	6	15.0
12.	Maintenance of all other enclosure.	05	5.0
13.	Maintenance of RO plant and all water post.	10	5.0
14.	Maintenance of all Solar power system.	-	5.0
15.	Maintenance of spot and street solar lights.	-	5.0
16.	Maintenance of wireless system.	-	4.0
17.	Maintenance of all vehicles.	3	2.0
18.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
19.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
20.	Maintenance of water supply system.	-	5.00
21.	Maintenance of Electricity supply.	-	6.00
22.	Maintenance of Standoff barrier and welded mesh.	200.00	6.0
23.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
24.	Cleaning of sewage tank, moat and water channels.	-	15.00
25.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
26.	Maintenance of green belts.	-	4.00
27.	Diesel, petrol and lubricants.	-	3.00
28.	Painting of peripheral boundary wall.	-	4.00
29.	Purchase of battery for wireless.	-	2.00
30.	Recharging C.U.G. system.	100	2.00
31.	Purchase of garden equipments.	-	2.00
32.	Purchase of fish.	-	3.00
33.	Purchase of blankets.	-	2.00
34.	Purchase and exchange of Zoo animals.	-	20.0
35.	Development of garden and lawns.	1	8.00
36.	Changing old water pipe line for the supply of drinking water.	-	5.0
37.	Repair of water posts at different places in the zoo.	-	2.0
38.	Regular electricity works and payment of bills	-	20.0
39.	Research project activities.	01	2.0
40.	Awareness activities.	5	2.0

41.	Purchase of books and journals for library.	-	2.0
42.	Printing of brochure, stickers Annual report etc.	-	1.0
43.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
44.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
45.	Land escaping undulated lands	10.0 ha	20.0
46.	Painting and white washing of all enclosures.	55	6.0
47.	Cleaning of wet and dry moat	46	9.0
48.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
49.	Regular health Check up - Staff		4.0
50.	Regular health Check up - animal		2.0
51.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
52.	Recharging CUG Phones		1.0
53.	Wireless		2.0
54.	Food for Carnivorous		20.00
55.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
56.	Medicines		10.00
57.	Growing Fodder species inside the Zoo.	5.0	30.00
58.	Fuel for Zoo train	1	20.00
59.	Maintenance of Zoo track	2000 mt	5.0
	TOTAL		**482.00**

2030-31

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Maintenance of Administrative Building.	01	75.00
2.	Maintenance of New hospital building.	01	50.0
3.	Land escaping and beautification works along the main road from gate to Zebra enclosure.	5.2 km	45.00
4.	Repair and painting of Residential buildings.	20	10.00
5.	Repair and painting of cages.	20	2.00
6.	Maintenance of RO plant and all water post.	10	5.0
7.	Maintenance of all Solar power system.	-	5.0
8.	Maintenance of spot and street solar lights.	-	5.0
9.	Maintenance of wireless system.	-	4.0
10.	Maintenance of all vehicles.	3	2.0
11.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
12.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
13.	Maintenance of water supply system.	-	5.00
14.	Painting and minor repair of lake view building.	01	2.00
15.	Repair and maintenance of roads.	4 km	6.00
16.	Maintenance of plantation.	-	1.0
17.	Maintenance of Electricity supply.	-	6.00
18.	Maintenance of Standoff barrier and welded mesh.	200.00	6.0
19.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
20.	Maintenance of lawn and garden.	12	20.0
21.	Maintenance of aquarium.	01	8.0
22.	Maintenance of nocturnal house.	01	2.0
23.	Maintenance of all herbivorous enclosure.	20	30.0
24.	Maintenance of all carnivorous enclosure.	6	15.0
25.	Maintenance of all other enclosure.	05	5.0
26.	Changing old water pipe line for the supply of drinking water.	-	5.0
27.	Repair of water posts at different places in the zoo.	-	2.0
28.	Regular electricity works and payment of bills	-	20.0
29.	Research project activities.	01	2.0
30.	Awareness activities.	5	2.0
31.	Purchase of books and journals for library.	-	2.0
32.	Printing of brochure, stickers Annual report etc.	-	1.0
33.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
34.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
35.	Land escaping undulated lands	10.0 ha	20.0
36.	Painting and white washing of all enclosures.	55	6.0
37.	Cleaning of wet and dry moat	46	9.0
38.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @8000/month.	25	24.00
39.	Cleaning of sewage tank, moat and water channels.	-	15.00

40.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
41.	Maintenance of green belts.	-	4.00
42.	Diesel, petrol and lubricants.	-	3.00
43.	Painting of peripheral boundary wall.	-	4.00
44.	Purchase of battery for wireless.	-	2.00
45.	Recharging C.U.G. system.	100	2.00
46.	Purchase of garden equipments.	-	2.00
47.	Purchase of fish.	-	3.00
48.	Purchase of blankets.	-	2.00
49.	Purchase and exchange of Zoo animals.	-	20.0
50.	Development of garden and lawns.	1	8.00
51.	Regular health Check up - Staff		4.0
52.	Regular health Check up - animal		2.0
53.	Deployment of security guards @10000.00 /month for 12 month	12	14.0
54.	Recharging CUG Phones		1.0
55.	Wireless		2.0
56.	Food for Carnivorous		20.00
57.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
58.	Medicines		10.00
59.	Growing Fodder species inside the Zoo.	5.0	30.00
60.	Fuel for Zoo train	1	20.00
61.	Maintenance of Zoo track	2000 mt	5.0
	Total		**553.00**

2031-32

S. No.	**Item of works**	Quantum of work	Expenditure in Lacs Rs.
1	**2**	**3**	**4**
1.	Maintenance of peripheral boundary wall.	3700.00mt	20.00
2.	Maintenance of Sloth beer enclosure.	01	5.00
3.	Maintenance of Walk in aviary.	01	2.0
4.	Maintenance of clock room and souvenir shop.	01	2.0
5.	Maintenance of Deer enclosure	20	25.0
6.	Maintenance of monkey house	01	3.0
7.	Maintenance of Snake house.	01	5.0
8.	Maintenance of Gharial and kayman houses.	01	3.0
9.	Maintenance of Toilets	04	6.0
10.	Maintenance of Birds of prey Enclosure.	01	5.0
11.	Maintenance of Pheasant enclosure.	01	5.0
12.	Walk in aviary Maintenance	01	2.0
13.	Aviary Maintenance.	01	3.0
14.	Maintenance of Stand of Barrier	900	6.0
15.	Renovation of Aquarium.	01	20.0
16.	Growing Fodder species inside the Zoo.	5.0	30.00
17.	Fuel for Zoo train	1	20.00
18.	Maintenance of Zoo track	2000 mt	5.0
19.	Medicines		10.00
20.	Purchase / exchange of Zoo animals.	-	3.0
21.	Facilitating drinking water supply system and installation of RO Plants.	10	10.0
22.	Payment of Electricity bills.	-	10.00
23.	Enclosure enrichment works.	-	20.00
24.	Research project activities.	05	12.00
25.	Awareness activities.	08	15.00
26.	Purchase of books and journals for library.	-	3.00
27.	Printing of brochure, stickers Annual report etc.	-	2.00
28.	Books for Library.	-	1.00
29.	Maintenance of old singes	15	4.00
30.	Cleaning of moats	55.0	5.00
31.	Diesel, Petrol, oil and Lubricants.	-	10.00
32.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12 months @8000/month.	25	24.0
33.	Maintenance of Zoo website.	-	2.0
34.	Health audit of Staff.	95	2.0
35.	Health audit of Schedule 1 animals.	-	5.0
36.	Deployment of PRD staff.	-	5.50
37.	Providing C.U.G. connections to Staff.	100	1.00
38.	Repairing wireless sets.	-	2.0
39.	Food for Carnivorous		20.00
40.	Food for herbivorous Omnivorous and for Safari animals.		30.00
	Total		**363.5**

2032-33

S. No.	**Item of works**	Quantum of work	Expenditure in Lacs Rs.
1	**2**	**3**	**4**
1.	Maintenance of peripheral boundary wall.	3700.00mt	20.00
2.	Maintenance of Sloth beer enclosure.	01	5.00
3.	Maintenance of Walk in aviary.	01	2.0
4.	Maintenance of clock room and souvenir shop.	01	2.0
5.	Maintenance of Deer enclosure	20	25.0
6.	Maintenance of monkey house	01	3.0
7.	Maintenance of Snake house.	01	5.0
8.	Maintenance of Gharial and kayman houses.	01	3.0
9.	Maintenance of Toilets	04	6.0
10.	Maintenance of Birds of prey Enclosure.	01	5.0
11.	Maintenance of Pheasant enclosure.	01	5.0
12.	White wash of gate, Souvenir shops Clock Room and Guard room	01	4.0
13.	Walk in aviary Maintenance	01	2.0
14.	Aviary Maintenance.	01	3.0
15.	Maintenance of Stand of Barrier	900	6.0
16.	Up-gradation of White peacock enclosure.	01	3.00
17.	Renovation of Aquarium.	01	20.0
18.	Growing Fodder species inside the Zoo.	5.0	30.00
19.	Fuel for Zoo train	1	20.00
20.	Maintenance of Zoo track	2000 mt	5.0
21.	Medicines		10.00
22.	Purchase / exchange of Zoo animals.	-	3.0
23.	Facilitating drinking water supply system and installation of RO Plants.	10	10.0
24.	Payment of Electricity bills.	-	10.00
25.	Enclosure enrichment works.	-	20.00
26.	Research project activities.	05	12.00
27.	Awareness activities.	08	15.00
28.	Purchase of books and journals for library.	-	3.00
29.	Printing of brochure, stickers Annual report etc.	-	2.00
30.	Books for Library.	-	1.00
31.	Maintenance of old singes	15	4.00
32.	Cleaning of moats	55.0	5.00
33.	Diesel, Petrol, oil and Lubricants.	-	10.00
34.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12 months @8000/month.	25	24.0
35.	Maintenance of Zoo website.	-	2.0
36.	Health audit of Staff.	95	2.0
37.	Health audit of Schedule 1 animals.	-	5.0
38.	Deployment of PRD staff.	-	5.50
39.	Providing C.U.G. connections to Staff.	100	1.00
40.	Repairing wireless sets.	-	2.0
41.	Food for Carnivorous		20.00
42.	Food for herbivorous Omnivorous and for Safari animals.		30.00
	Total		**370.5**

2033-34

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Maintenance of of one brow antelope deer enclosure.	01	70.00
2.	Maintenance of of Ostrich enclosure.	01	55.00
3.	Maintenance of t of Sarus gallery.	01	75.00
4.	Repair and painting of cages.	20	1.00
5.	Painting and minor repair of lake view building.	01	3.00
6.	Repair and maintenance of roads and pedestrians.	9	18.00
7.	Maintenance of plantation.	-	2.0
8.	Maintenance of lawn and garden.	12	15.0
9.	Maintenance of Fish house.	01	8.0
10.	Maintenance of nocturnal house.	01	5.0
11.	Maintenance of all herbivorous enclosure.	20	15.0
12.	Maintenance of all carnivorous enclosure.	12	10.0
13.	Maintenance of all other enclosure.	05	8.0
14.	Maintenance of RO plant and all water post.	10	5.0
15.	Maintenance of all Solar power system.	-	5.0
16.	Maintenance of spot and street solar lights.	-	5.0
17.	Maintenance of wireless system.	-	4.0
18.	Maintenance of all vehicles.	3	2.0
19.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
20.	Lopping tree and bush hedge cutting.	25.0 ha	7.00
21.	Maintenance of water supply system.	-	5.00
22.	Maintenance of Electricity supply.	-	8.00
23.	Designing new standoff barrier and maintenance of existing standoff barriers along with welded mesh.	800.00	12.0
24.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	55	15.00
25.	Cleaning of sewage tank, moat and water channels.	-	20.00
26.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
27.	Maintenance of green belts.	-	4.00
28.	Diesel, petrol and lubricants.	-	3.00
29.	Painting of peripheral boundary wall.	-	5.00
30.	Maintenance of Zoo website	-	2.0
31.	Maintenance of C.C.T.V. Camera	-	5.0
32.	Purchase of battery for wireless.	-	2.00
33.	Recharging C.U.G. system.	100	2.00
34.	Purchase of garden equipments.	-	2.00
35.	Purchase of blankets.	-	2.00
36.	Purchase and exchange of Zoo animals.	-	20.0
37.	Changing old water pipe line for the supply of drinking water.	-	5.0
38.	Repair of boring for water supply.	02	4.0
39.	Repair of water posts at different places in the zoo.	-	2.0
40.	Change of old Cable/installation of feeder pillars for providing illuminates to enclosures.	-	2.0

41.	Installation of Solar Powered Fencing in the enclosures.	500	5.0
42.	Enclosure enrichment works.	04	8.00
43.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
44.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
45.	Eradiation of *prosopis Juliflora* form the Zoo campus.	5.0	3.0
46.	Painting and white washing of all enclosures.	55	6.0
47.	Cleaning of moats.	46	9.0
48.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @5000/month.	25	15.00
49.	Monkey catching and release in wild.	-	4.0
50.	Regular health Check up - Staff		4.0
51.	Regular health Check up - animal		2.0
52.	Purchase of surgical instruments for animals.		1.0
53.	Deployment of security guards @5000.00 /month for 12 month	12	7.20
54.	Recharging CUG Phones.		1.0
55.	Wireless maintenance.		1.0
56.	Food for Carnivorous		20.00
57.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
58.	Medicines For Staff and animals.		10.00
59.	Growing fodder species inside the Zoo.	5.0	30.00
60.	Fuel/Energy for Zoo train.	1	20.00
61.	Maintenance of Zoo track	2000 mt	5.0
62.	Maintenance of Bogies	5	6.0
63.	Maintenance of Zoo Railway station, signal, wages of lineman, barrier etc.	01	5.0
	Total		**512.20**

2034-35

S. No.	Item of works	Quantum of work	Expenditure in Lacs Rs.
1	2	3	4
1.	Repair and painting of Residential buildings	45	15.00
2.	Repair and painting of cages.	20	1.00
3.	Painting and minor repair of lake view building.	01	1.00
4.	Repair and maintenance of road.	9	6.00
5.	Maintenance of plantation.	-	1.0
6.	Maintenance of lawn and garden.	12	15.0
7.	Maintenance of Fish house.	01	5.0
8.	Maintenance of nocturnal house.	01	2.0
9.	Maintenance of all herbivorous enclosure.	20	10.0
10.	Maintenance of all carnivorous enclosure.	12	8.0
11.	Maintenance of all other enclosure.	05	4.0
12.	Maintenance of RO plant and all water post.	10	5.0
13.	Maintenance of all Solar power system.	-	5.0
14.	Maintenance of spot and street solar lights.	-	5.0
15.	Maintenance of wireless system.	-	4.0
16.	Maintenance of all vehicles.	3	2.0
17.	Colouring the bole of the trees.	400	4.00
18.	Eradication of unwanted growth from the zoo campus.	20.0 ha	5.00
19.	Lopping tree and bush hedge cutting.	25.0 ha	5.00
20.	Maintenance of water supply system.	-	5.00
21.	Maintenance of Electricity supply.	-	6.00
22.	Maintenance of Standoff barrier and welded mesh.	800	12.0
23.	Seasonal maintenance like Camp fire, Thatch huts, wind breaks , Green cloth etc.	-	8.00
24.	Cleaning of sewage tank, moat and water channels.	-	15.00
25.	Removing fallen branches and trunk trees from enclosure, road, lawn and gardens.	-	4.00
26.	Maintenance of green belts.	-	4.00
27.	Diesel, petrol and lubricants.	-	3.00
28.	Painting of peripheral boundary wall.	-	4.00
29.	Maintenance of C.C.T.V. Camera	-	5.0
30.	Maintenance of zoo rail track, bogies, station, lineman, and shed etc.	-	20.00
31.	Development of garden and lawns.	1	8.00
32.	Changing old water pipe line for the supply of drinking water.	-	5.0
33.	Repair of boring for water supply.	02	4.0
34.	Repair of water posts at different places in the zoo.	-	2.0
35.	Change of old Cable/installation of feeder pillars for providing illuminates to enclosures.	-	2.0
36.	Installation of Solar Powered Fencing in the enclosures.	500 mt	5.0
37.	Pre Monsoon and Post monsoon tilling operation.	55	10.0
38.	Eradiation of thorny growth from the Enclosures.	25.0	6.00
39.	Eradiation of *prosopis Juliflora* form the Zoo campus.	5.0	3.0
40.	Land escaping undulated lands	10.0 ha	20.0
41.	Maintenance and up gradation of viewers Path	1900.00 mt	35.00

42.	Painting and white washing of all enclosures.	55	6.0
43.	Cleaning of wet and dry moat	46	9.0
44.	Wages of Gardener, Chaukidar, Sweepers, Watchers. For 12months @5000/month.	25	15.00
45.	Monkey catching and release in wild.	-	4.0
46.	Maintenance of Zoo website	-	2.0
47.	Regular health Check up - Staff		4.0
48.	Regular health Check up - animal		2.0
49.	Purchase of surgical instruments for animals.		1.0
50.	Deployment of security guards @5000.00 /month for 12 month	12	7.20
51.	Recharging CUG Phones		2.0
52.	Wireless		3.0
53.	Food for Carnivorous		20.00
54.	Food for herbivorous, Omnivorous and for Safari animals.		30.00
55.	Medicines		10.00
56.	Growing Fodder species inside the Zoo.	5.0	30.00
57.	Fuel for Zoo train	1	20.00
58.	Maintenance of Zoo track	2000 mt	5.0
59.	Maintenance of Bogies	5	6.0
60.	Maintenance of railway station , signal , lineman, barrier etc.	01	5.0
61.	Construction of Sewage tank	16	7.00
62.	Construction of Sewerage pipe line	1.0 km	25.0
63.	Construction of Drainage.	1.0 km	19.00
64.	Construction of Compost Chember.	10	8.00
	Total		***529.20***

Part III

Annexures

Annexure-la

Meteorological data of temp, Rainfall and relative humidity of last 10 years - Chandra Shekhar Azad, Agricultural University

Max Temp (Deg Celsius)

Year	January	February	March	April	May	June	July	August	September	October	November	December
1999	32.0	19.3	25.7	32.6	40.5	40.2	38.5	35.3	33.7	32.8	32.0	29.3
2000	31.4	21.2	24.0	30.8	38.9	39.5	35.5	32.8	33.1	32.8	34.3	29.6
2001	31.2	20.3	25.7	31.4	37.6	38.7	34.8	33.0	33.4	35.0	32.4	28.9
2002	31.8	21.3	24.3	31.5	38.0	39.5	38.7	38.8	32.7	31.3	32.5	28.9
2003	30.6	15.8	24.4	30.3	38.0	40.4	39.1	33.8	32.6	30.9	31.9	28.2
2004	31.3	17.4	25.1	33.5	38.2	40.4	36.3	34.1	33.2	33.8	31.6	28.9
2005	31.7	21.4	24.8	32.0	37.6	40.4	40.5	31.9	34.0	33.0	32.0	28.9
2006	32.2	23.9	29.5	30.5	38.1	38.5	37.8	33.1	33.0	34.8	33.4	28.7
2007	22.8	24.3	29.4	38.8	39.0	39.0	34.2	32.8	33.3	33.3	29.0	23.6
2008	21.9	23.8	32.8	38.1	39.0	34.0	31.5	32.3	34.1	33.3	28.5	24.4
2009	22.3	26.5	32.5	39.2	-	-	-	-	-	-	-	-

Annexure-lb

Min Temp (Deg.Celsius)

Year	January	February	March	April	May	June	July	August	September	October	November	December
1999	6.8	11.0	16.5	21.4	24.9	24.7	23.5	23.8	22.4	20.3	11.3	6.3
2000	6.6	8.1	14.5	23.2	26.7	26.8	25.4	25.2	24.5	19.7	12.3	5.5
2001	5.1	10.0	15.7	22.9	26.7	26.6	24.8	24.4	22.0	17.7	10.6	5.9
2002	3.5	5.9	13.0	21.2	27.9	29.1	29.6	26.4	23.8	20.3	11.9	6.8
2003	3.6	10.0	13.6	20.4	22.2	26.6	24.7	25.0	23.4	16.9	10.2	7.9
2004	8.2	10.7	16.4	23.1	26.4	26.4	26.4	26.2	25.0	19.4	12.9	10.3
2005	9.5	11.9	17.1	20.4	24.1	27.8	25.5	26.0	25.1	19.3	11.4	6.7
2006	7.2	12.5	14.5	20.4	26.1	27.4	26.6	26.3	24.8	19.9	14.5	9.9
2007	7.8	12.0	14.8	23.0	25.4	27.3	26.8	26.3	25.2	18.0	13.1	8.6
2008	7.4	9.0	16.5	20.0	24.5	25.8	25.5	25.6	24.5	19.7	12.8	10.1
2009	9.0	10.3	14.4	20.6	-	-	-	-	-	-	-	-

Annexure-lc

Rainfall (mm)

Year	January	February	March	April	May	June	July	August	September	October	November	December
1999	18.2	5.2	0.0	0.0	3.4	85.6	196.3	132.6	281.7	137.0	0.0	5.4
2000	1.6	1.6	3.2	19.4	22.8	185.2	247.8	186.0	87.2	0.2	0.0	0.0
2001	0.0	0.0	5.2	4.0	22.0	93.2	260.8	154.2	46.1	55.8	0.0	0.0
2002	3.2	49.8	0.0	0.0	56.2	41.4	25.6	269.2	393.8	1.8	3.6	0.8
2003	12.1	40.8	0.0	39.8	10.0	50.4	334.0	129.2	453.6	0.0	0.0	36.0
2004	37.4	0.0	0.0	5.0	5.0	119.2	275.0	98.0	203.0	23.0	0.0	0.0
2005	23.8	0.0	11.7	0.0	7.0	44.0	332.0	127.2	136.2	15.8	0.0	5.2
2006	0.0	0.0	15.0	25.0	34.4	42.3	317.6	34.7	44.4	36.0	1.5	0.4
2007	0.0	43.5	17.4	0.0	6.0	38.8	186.4	272.2	23.6	0.0	0.0	3.0
2008	0.0	1.6	0.0	9.5	4.8	309.8	465.8	320.4	63.4	0.0	0.0	0.0
2009	0.0	4.0	1.5	6.3	-	-	-	-	-	-	-	-

Annexure-ld

Highest Humidity (%)

Year	January	February	March	April	May	June	July	August	September	October	November	December
1999	86.5	74.3	53.1	56.0	50.6	60.2	76.8	84.1	87.2	80.8	68.0	77.5
2000	91.9	86.4	78.0	65.7	59.9	73.5	83.6	83.6	86.2	78.2	83.4	82.2
2001	92.1	80.6	68.6	52.5	63.4	79.5	87.7	88.5	80.5	83.7	79.5	93.9
2002	91.9	90.1	80.1	66.7	69.1	72.0	63.6	87.8	88.2	81.1	86.0	85.6
2003	94.5	88.1	76.5	71.5	62.0	68.5	88.7	88.2	93.8	91.0	90.0	92.7
2004	93.0	89.6	73.0	57.5	60.6	77.5	83.2	91.5	86.2	88.3	78.0	91.6
2005	91.2	87.3	74.9	53.5	54.6	63.5	87.5	81.6	87.2	86.6	80.3	82.7
2006	83.3	84.5	76.6	58.0	68.0	66.7	86.6	83.3	81.4	77.7	87.8	89.4
2007	87.7	92.9	78.5	62.8	56.8	67.2	82.9	87.5	83.6	78.1	88.8	86.6
2008	82.5	77.4	70.9	49.2	55.1	73.5	90.9	90.6	85.1	83.1	87.9	92.4
2009	91.6	84.5	71.1	53.6	-	-	-	-	-	-	-	-

Annexure-le

Lowest Humidity (%)

Year	January	February	March	April	May	June	July	August	September	October	November	December
1999	79.5	59.6	39.6	45.4	37.7	54.9	71.2	76.4	87.1	75.3	66.5	77.2
2000	62.8	53.3	48.0	39.5	38.2	62.6	74.4	69.5	68.6	48.7	41.5	38.7
2001	50.5	33.9	33.5	25.6	38.0	60.5	72.3	68.9	52.2	47.2	35.8	51.1
2002	54.4	57.6	48.5	41.6	38.6	45.5	45.8	72.9	71.1	44.8	38.8	40.1
2003	72.2	64.0	43.1	33.6	33.7	48.6	69.7	72.3	78.2	45.8	45.2	61.3
2004	75.2	76.7	35.4	35.7	35.9	55.5	69.3	75.0	70.1	58.7	53.2	62.4
2005	62.7	60.0	39.2	33.2	31.6	42.4	74.9	63.8	69.5	49.8	29.5	38.7
2006	37.7	48.1	36.7	21.1	38.0	44.0	70.8	66.2	54.0	44.3	46.6	53.3
2007	42.9	58.0	46.6	39.3	33.5	42.4	63.0	72.9	63.2	39.0	48.5	47.0
2008	36.6	38.1	33.5	22.5	31.1	64.8	76.5	76.3	62.7	45.2	42.1	53.0
2009	52.6	39.9	31.0	30.5	-	-	-	-	-	-	-	-

Annexure-ll

LIST OF FLORA OF KANPUR ZOO

S. No	Scientific name	Common Hindi Name
TREES OF KANPUR ZOO		
1.	Holoptelia integrifolia	Chilbil
2.	Prosopis juliflora	Vilayati babul
3.	Syzygium cumini	Jamun
4.	Azadirachta indica	Neem
5.	Annona squamosa	Sharifa
6.	Dalbergia sissoo	Shisham
7.	Cassia siamia	Cassia
8.	Delonix regia	Gul mohar
9.	Ficus religiosa	Pipal
10.	Limonia elephantum	Kaitha
11.	Pithecellobium dulce	Jangal Jilebee
12.	Tamarindus indica	Imli
13.	Tectona grandis	Sagoan
14.	Acacia Catechu	Katha
15.	Acacia leucophloea	Rhionz
16.	Aegle marmelos	Bel pathar
17.	Ailanthus exelsa	Arru
18.	Albizzia lebbec	Kala sirus
19.	Albizzia procera	Safed sirus
20.	Alstonia echolaris	Chitwan
21.	Anthocephalus indicus	Kadamb
22.	Bauhinia variegate	Kachnar
23.	Psidium guava	Amrud
24.	Mangifera indica	Aam
25.	Artocarpurs heterophyllus	Kathal
26.	Eucalyptus citriodora	Eualyptus
27.	Lagerstroemia speciosa	Jarul
28.	Phoenix sylvestris	Khajur
29.	Pongamia pinnata	Kanji
30.	Ficus lacor	Paakad
31.	Terminalia arjuna	Arjun
32.	Ficus bengalensis	Bargad
33.	Morus alba	Shatoot
SHRUBS IN FOREST AREA		
34.	Lantana camara	Lantana
35.	Dodonoea viscosa	Dodonea
36.	Bougainvillia spectabilis	Bogan villea
37.	Clerodendrom infortunatum	Inni
38.	Hibiscus rosasinensis	Gudhal
39.	Lagerstroemia indica	Jarul
MAIN GRASSES SPECIES		
40.	Cinodon dactylon	Doob
41.	Dendrocalamus strictus	Baans
42.	Sachharum munja	Moonz
43.	Sacharum spontaneum	Kaans
44.	Chrysopogan fulyus	Kus

List of Free ranging Fauna of Kanpur Zoological Park

S. No	Scientific name	Common name in Hindi
Mammals		
1.	Rhesus macaque	Bandar
2.	Presbytis entellus dufresn	Common Langur
3.	Viverrcula indica	Common Indian civet/Kasthuri
4.	Mellivora capensis	Bijju/ Ratel
5.	Herpestes edwarsii	Nevla/ Common Mongoose
6.	Bosephalus tragocamelus palls	Nilgai/Blue Bull
7.	Funambulus palmarum	Gilhari
8.	Rattus rattus	Chuha/Common house rat
9.	Bandicota bengalensis	Chuha/Indian mole rat
10.	Vandeleuria olderacea	Chuha/Long tailed tree mouse
11.	Mus musculus	Chuha/House mouse
12.	Hystrix indica	Sehi/Porcupine
13.	Suncus murimus	Chchundar/Ground shrews
14.	Scotophilus heathi	Chamgadad/Common yellow bat
Aves		
15.	Francolinus pondicerianus	Bhura titar/Grey francolin
16.	Pavo cristatus linn	Mor /Indian peafowl
17.	Columba livia	Neela kabutar/Blue rock pegion
18.	Streptopelia chinensis	Chittiar Fakta/Spotted dove
19.	Streptopelia decaocto	Dhor Fakta/Eurasian collared dove
20.	Treron phoenicoptera	Hariyal/Yellow footed green pegion
21.	Sarkidiornis melanotos	Nakta/Comb duck
22.	Tadorna ferruginea	Surkhab/Brahminy duck
23.	Dendrocygna javanica	Choti silhi/lesser whistling teal
24.	Tachybaptus ruficollis	Dubdubi/Little grebe
25.	Gallinago gallinago	Chaha/Common snipe
26.	Egretta garzetta	Chota bagula/Little egret
27.	Ardea cinerea	Sileti anjan/Grey heron
28.	Ciconia spiscopus	Shwet greev jhangil/White necked stork
29.	Bulbulcus ibis	Badami Bagula/Cattle egret
30.	Accipiter triviragatus	Shikra
31.	Clamator jacobinus	Kuhuk/Pied cuckoo
32.	Hierococcyx varius	Kuhuk/Common hawk cuckoo
33.	Eudynamys scolopacea	Koel
34.	Centropus sinesis	Bada mahok/Greater Coucal
35.	Glaucidium radiatum	Junglee chougad/Jungle owlet
36.	Athene brama	Dhabbedar chougad/Spotted owlet
37.	Bubo bubo	Ghughu/Greater horned owl
38.	Caprimugus indicus	Dabnak/Grey nightjar
39.	Coracias benghalensis	Neel kanth/Indian roller
40.	Tockus birostris	Sileti dhanesh/Indian grey hornbill
41.	Ceryle rudis	Chittidar kilkila/Pied kingfisher
42.	Halcyon smyrnensis	Safed gardan kilkila/White breasted kingfisher
43.	Dinopium benghalense	Kathpodva/Woodpecker
44.	Dicrurus adsimilis	Kala bhujang/Black Drongo
45.	Passer domesticus	Gouraiah/Common house sparrow
46.	Corvus macrorhynchos	Jangli kauvva/Large billed crow
47.	Corvus splendens	Desi Kauvva/House crow

48.	Acridotheres tristis	Myna/Common Myna
49.	Pycnonotus cafer	Lal punch bulbul/Red vented bulbul
50.	Pycnonotus jocosus	Lal gal bulbul/Red whiskered bulbul
51.	Turdoides caudatus	Samanya pandoua/Common babbler
52.	Copsychus saularis	Dahial/Magpie robin
53.	Oriolus oriolus	Sunahra peelak/Goldern oriole
54.	Orthotomus sutorius	Darji phutki/Tailor bird
55.	Merops orientalis	Hara patringa/Green bee eater
56.	Psittacula krameri	Lahbar thotha/Rose ringed parakeet
57.	Psittacula cyanocephala	Tuiia thotha/Plum headed parakeet
Reptiles		
58.	Varanus benghalensis	Gouh/Common Indian monitor lizard
59.	Calotes versicplou	Girgit/Common garden lizard
60.	Hemidactylus flaviviridis	Chipkali/Northern house geko
61.	Python molurus gray	Azgar/Inidan python
62.	Bungarus caeruleus Russell	Karait/Coommon Indian krait
63.	Naja naja	Naag/Indian cobra
64.	Crocodilus palustris lesson	Muggar/Marsh crocodile

Annexure 4a
Inventory report of Zoo Animals 01-04-2010 to 31-03-2011

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
	Endangered species - schedule I & II		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
BIRDS																						
1	Peafowl white	Pavo cristatus	1	1	6	8	0	0	2	0	0	0	0	0	0	0	0	0	1	1	8	10
2	Peafowl	Pavo cristatus	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
3	Kaleej Pheasant	Lophura leucomelanos	2	0	1	3	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1
4	King Vulture	Sarcogyps calvus	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5	Tawny eagle	Aquila rapax	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
			5	**2**	**8**	**14**	0	0	2	0	0	0	0	0	0	3	0	0	2	2	10	14

Annexure 4b

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT

S.No.	Species	Scientific Name	Stock as on 01.04.2013				Births			Acquisitions			Disposals			Deaths			Stock as on 31-03-2014			
	Endangered species (schedule I & II)		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
1	Antelope Four Horned Chowsingha	Tetraceros quadricornis	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
2	Deer Swamp/ Barasingha	Cervus duvaucelli	9	8	15	32	0	0	0	0	0	0	1	1	0	4	1	0	4	6	15	25
3	Deer Brow Antelered/ Deer - Sanghai	Cervus eldi	8	12	13	33	0	0	0	0	0	0	1	1	0	5	11	0	2	0	13	15
4	Black Buck -Krishna Mrig	Antelope cervicapra	6	11	0	17	4	0	2	1	0	0	0	2	0	3	0	0	8	9	2	19
5	Bear Himalayan Black	Selenarctos thibetanus	2	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	5
6	Bear Sloth	Melursus ursinus	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
7	Bengal Porcupine	Atherurusmecrourus assamensis	1	2	4	7	0	0	3	0	0	0	0	0	0	0	0	0	1	2	7	10
8	Leopard/Panther	Panthera pardus	7	5	0	12	0	0	0	1	0	0	0	0	0	0	0	0	8	5	0	13
9	Tiger Royal Bengal	Panthera tigris	3	1	3	7	0	0	0	0	0	0	0	0	0	2	0	0	1	1	3	5
10	Asiatic Lion	Panthera leo persica	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2
11	Rhinoceros Indian	Rhinoceros unicornis	3	1	0	4	1	0	0	0	0	0	1	0	0	0	0	0	3	1	0	4
12	Langur common	Presbytis entellus	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3
13	Macaque bonnet	Macaca radiata	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
14	Macaque rhesus	Macaca mulatta	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	4
15	Elephant Indian	Elephas maximus	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	Total		**44**	**54**	**35**	**133**	5	0	5	3	1	0	3	4	0	14	12	0	35	39	40	114
	Reptiles																					
1	Mugger crocodile (in cage)	Crocodylus pelustris	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9
2	Mugger crocodile (in lake)	Crocodylus pelustris	0	0	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	28
3	Ghariyal	Gavialis gengeticus	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
4	Turtle		2	4	0	6	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	6
	Total		**2**	**6**	**37**	**45**	0	0	0	0	0	0	0	0	0	0	0	0	2	6	37	45
	Grand Total		**46**	**60**	**72**	**178**	**5**	**0**	**5**	**3**	**1**	**0**	**3**	**4**	**0**	**14**	**12**	**0**	**37**	**45**	**77**	**159**

Annexure 4d

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	**Species**	**Scientific Name**	**Stock as on 01.04.2013**				**Births**			**Acquisitions**			**Disposals**			**Deaths**			**Stock as on 31-03-2014**			
	schedule III & IV		**M**	**F**	**U**	**T**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**M**	**F**	**U**	**T**
1	Deer Barking	Muntiacus muntjac	3	3	0	6	1	1	0	0	0	0	0	0	0	1	1	0	3	3	0	6
2	Deer Hog	Axis porcinus	2	3	8	13	0	0	3	0	0	0	0	0	0	0	1	0	2	2	11	15
3	Deer Sambhar	Cervus unicolor	5	5	9	19	0	0	1	0	0	0	0	0	0	2	1	0	3	4	10	17
4	Deer Spotted	Axis axis	17	27	26	70	0	0	0	0	0	0	0	0	0	1	0	0	16	27	26	69
5	**Deer spotted (in Hiran safari)**	**Axis axis**	**89**	**246**	**34**	369	0	0	0	0	0	0	0	0	0	0	0	0	89	246	34	369
6	NilGai / Blue bull	Boselaphus trangocamelus	3	5	9	17	0	0	0	0	0	0	0	0	0	0	0	0	3	5	9	17
7	Striped Hyena	Hyaena hyaena	1	3	4	8	0	0	3	0	0	0	1	1	0	0	1	0	0	1	7	8
8	Jackal	Canis aureus	2	3	4	9	0	0	0	0	0	0	0	0	0	2	0	0	0	3	4	7
9	Common Palm Civet Toddy cat	Paradoxus hermaphroditus	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Total		**122**	**295**	**95**	**512**	**1**	**1**	**7**	**0**	**0**	**0**	**1**	**1**	**0**	**6**	**4**	**0**	**116**	**291**	**102**	**509**

Annexure 4e

KANPUR ZOOLOGICAL PARK 01.04.2013 TO 31-03-2014 STOCK REPORT																						
S.No.	Species	Scientific Name	Stock as on 01.04.2013				Births			Acquisitions			Disposals			Deaths			Stock as on 31-03-2014			
Exotic animals			M	F	U	T	M	F	U	M	F	U	M	F	U	M	F	U	M	F	U	T
1	Orang Utan	Papopygmaeus	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
2	Chimpanzee	Pan Troglodytes	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3	Deer Sikka	Cervus nippon	1	3	0	4	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	3
4	Hipppopotamus	Hippopotamus amphibius	3	1	1	5	0	0	1	0	0	0	0	0	0	0	0	0	3	1	2	6
5	Monkey Capuchin	Cebus capucinus	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2
6	Monkey capuchin white throated	Cebus capucinus	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
7	Zebra Grant	Equus burchelli	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
	Total		**8**	**7**	**1**	**16**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**7**	**6**	**2**	**15**
	Exotic Birds																					
1	Macow- Blue & Yellow	Ara ararauna	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
2	Emu	Dromeaus novaehollandae	2	0	13	15	0	0	0	0	1	0	0	0	0	2	1	0	0	0	13	13
3	Budgrigar	Melopsittacus undulatus	0	0	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40
4	Zebra finch	Taeniopygia guttata	0	0	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	26
5	Fischer love bird	Agapornis fischeri	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
6	Peach love bird	Agapornis roseicollis	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
7	Cockatiel	Nymphicus hollandicus	0	3	245	248	0	0	0	0	0	0	0	0	0	0	3	2	0	0	243	243
8	Cockatoo Sulphur Crested	Cacatua galerita	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
9	Rosella Golden Mantled	Platycercus eximius	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
10	Pheasant Silver	Lophura nychemera	7	8	0	15	0	0	0	0	0	0	0	0	0	1	3	0	6	5	0	11
11	Pheasant Golden	Crysolophus pictus	1	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	2	2	0	4
12	Pheasant Ring Necked	Phasianus colchinus	12	13	3	28	0	0	0	0	0	0	0	0	0	8	8	0	4	5	3	12
13	Ostrich	Struthio camelus	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	2
	Total		**23**	**25**	**349**	**397**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**0**	**0**	**11**	**15**	**2**	**14**	**14**	**347**	**375**
	Reptiles																					
1	Caiman	Caiman crocodilus	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	3	1	0	4
	Total		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	4

KANPUR ZOOLOGICAL PARK, KANPUR				
SUMMARY FROM 01.04.2013 TO 31-03-2014				
Opening stock as on 01-04-2013				
	MALE	**FEMALE**	**UNIDENTIFIED**	**TOTAL**
Schedule 1&2	49	56	83	188
Schedule 3&4 & exotics	166	348	488	1002
TOTAL	**215**	**404**	**571**	**1190**
CLOSING STOCK as on 31.03.2013				
	MALE	**FEMALE**	**UNIDENTIFIED**	**TOTAL**
Schedule 1&2	39	47	87	173
Schedule 3&4 & exotics	161	340	487	988
TOTAL	**200**	**387**	**574**	**1161**

Annexure v

Staff Position

The sanctioned posts as per the Scheme of Management are as follows: -

S. No.	Present Posts	Approved Posts	Presently working
1	Director	01	01
2	Veterinary Doctor	01	02 (one on contract, other on deputation from animal Husbandry deptt)
3	Range Officers	02	02
4	Sr. Assistant	01	0
5	Sr. Clerk	03	03
6	Jr. Clerk	04	02
7	Draftsman	01	01
8	Driver	01	01 (on contract)
9	Forester	04	01
10	Wildlife Guard	04	04
11	Orderly	03	03
12	Booking clerk	03	03
13	Ticket Checker	02	02
14.	Cook	02	02
15.	Electrician	01	0
16	Tube well operator	02	02
17	Head Keeper	01	01
18	Vet. assistant	01	01(one pharmacist on contract)
19	Food Distributor	02	02
20	Mahout	02	02
21	Masson	01	01
22	Carpenter	01	01
23	Keeper	12	12
24	Chowkidar	19	19
25	Sweeper	12	12
26	Seasonal Sweeper	01	00
27	Maali	10	10
	Total	**98**	**84**

Annexure v a

PROPOSED ADDITIONAL POSTS

S. No.	Proposed Posts	Nos Proposed	Mode of recruitment
1	Curator	01	Transferring from the available strength of DCF/ACF
2	Veterinary Doctor	01	On Contract or on Deputation from animal husbandry department
3	Biologist	01	Either by sanction of the post by State Govt. or on contract basis
4	Education Officer	01	-do-
5.	Compounder	02	-do-
6	Lab Assistant	01	-do-
7	Guides for interpretation center	02	On contract basis
8	Sweepers	05	Either by sanction of the post by State Govt. or on contract basis
9	Keepers/ sweeper	3	-do-
10	Tractor Driver	01	-do-
11	Guides	02	To assist the Education Officer. Either on contract basis or by sanction of posts

Annexure Vl

The Enclosure Dimensions of Some important Animals of Kanpur Zoological Park

S,No	Species	Dimensions of the House			Space available for roaming in Sq. mts
		Length in mts	Breadth in mts.	Height in mts.	
1	Tiger	10.8	2.55	2.85	1600
2	Lion	10.5	2.3	2.1	3700
3	Leopard-1	4.5	1.75	1.7	236
4	Leopard-2	4.5	1.75	1.7	236
5	Leopard-3	8.4	2.15	1.7	410
6	Rhinoceros	8.4	7	3.4	2200
7	Manipuri Deer	12.1	6.35	3.6	3240
8	Swamp Deer	12.2	7.9	3.6	3025
9	Chinkara	11.9	6.5	3.3	1700
10	Chousingha	11.9	7	3.6	2000
11	Spotted Deer	12.0	7.0	3.6	2686
12	Hog Deer	12	7.0	3.6	1950
13	Barking deer	11.5	7.0	3.6	2485
14	Blackbuck	12.0	7.0	3.6	3500
15	Himalayan Black bear	12.4	2.2	2.1	1250
16	Jackal	3.8	1.95	2	560
17	Hyena	3.8	1.95	2	470
18	Bonet Monkey	5.7	2.2	2	1320
19	H. Baboon	6.55	2.3	2	760
20	Monkey House	3.2	1.9	2.2	222
21	Zebra	11.5	7.7	4.25	5400
22	Hippo	6.6	2.8	3	1250
23	ORUNGTUN	3.4	2.5	3	1620
24	Chimpanzee	3.4	2.5	3	1170

Annexure VII List of Buildings other than enclosures

S. No	Name of the Building
1.	Booking windows and entrance gates Building
2.	Administrative Building
3.	Stores and Commissary Building
4.	Meat House
5.	Lake View Building (interpretation centre)
6.	Chakor Auditorium
7.	Hospital Building
8.	Post mortem room
9.	Incinerator Building
10.	Pump House at Hospital
11.	Pump House at Monkey house (Abondoned)
12.	Pump House at Blackbuck enclosure I (Abondoned)
13.	Pump House at Nocturnal animal House (Abondoned)
14.	Pump House at Van Manush
15.	Kiosk I & Kiosk II

' कानपुर प्राणि उद्यान के प्रबन्ध एवं विकास हेतु सोसाइटी का संगम ज्ञापन '

1— नाम— सोसाइटी का नाम 'कानपुर प्राणि उद्यान के प्रबन्ध एवं विकास हेतु सोसाइटी' है (जिसे इसमें इसके पश्चात् 'सोसाइटी' के रूप में उल्लिखित किया गया है।)

2— सोसाइटी का पंजीकृत कार्यालय— इस सोसाइटी का पंजीकृत कार्यालय निम्नलिखित स्थान पर होगा—

कार्यालय निदेशक,
कानपुर प्राणि उद्यान,
आजादनगर, नवाबगंज,
कानपुर, उ0प्र0, 208002

3— कार्यक्षेत्र— इस सोसाइटी का कार्यक्षेत्र ' कानपुर प्राणि उद्यान ' कानपुर होगा।

4— उद्देश्य— इस सोसाइटी की स्थापना के उद्देश्य एवं प्रयोजन निम्नवत् हैं:—

4.1 आधुनिक वैज्ञानिक तरीकों से कानपुर प्राणि उद्यान का विकास और रख—रखाव करना तथा इसे एक आदर्श ढाँचा प्रदान करना;

4.2 संकटापन्न वन्य जीवों को लुप्त होने से बचाने तथा इन वन्य जीव प्रजातियों के विकास के लिए आधुनिक वैज्ञानिक तरीकों का अनुसरण करना ;

4.3 छात्रों तथा प्राणि उद्यान के बाह्य तथा आंतरिक लोगों को सुशिक्षित करने तथा वन्य जीव संरक्षण का संदेश देने के लिए उद्यानों को आगे बढ़ाने वाले कार्यक्रमों को आयोजित करना ;

4.4 प्राकृतिक वातावरण में तथा कैद में वन्य जीवों के व्यवहार पर शोध करने के लिए व्यवस्था उपलब्ध कराना;

4.5 उपयुक्त समाचार पत्रों तथा पत्रिकाओं में लेखों तथा विज्ञापनों के प्रकाशन द्वारा वन्य जीव से संबंधित समस्याओं/सूचनाओं के बारे में जानकारी प्रस्तुत करना;

4.6 लोगों को सुशिक्षित करने के लिए समय—समय पर सांस्कृतिक कार्यक्रमों, संगोष्ठियों, परिचर्चा वाद—विवाद और जागरूकता ज्ञान—शिविरों का आयोजना करना;

4.7 कानपुर प्राणि उद्यान के कार्यों के निष्पादन के दौरान घायल कर्मचारियों के कल्याण तथा उनके उपचार के लिए कदम उठाना;

4.8 वन्यजीव के स्वास्थ्य तथा व्यवहार पर प्रयोग और शोध के लिए

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प्रयोगशाला / चिकित्सालय का विकास करना;

4.9 विभिन्न उपायों, जैसे विभिन्न क्षेत्रों, राष्ट्रीय एवं अन्तर्राष्ट्रीय ख्यातिप्राप्त अभिकरणों, कंपनियों / निगमित क्षेत्रों से दान के माध्यम से आय प्राप्त करने के लिए प्रयास करना। आय नकद या वस्तु / सामग्री के रूप में, जैसा कि दानकर्ता के लिए उपयुक्त हो, हो सकती है;

4.10 उत्तर प्रदेश सरकार के अनुमोदन से सोसाइटी के नियमों / उपविधियों को व्यवस्थित करना। सोसाइटी उत्तर प्रदेश सरकार की सहमति से समय–समय पर नए या अतिरिक्त नियम बना सकती है या नियमों को संशोधित / निरस्त कर सकती है;

4.11 उत्तर प्रदेश राज्य के पूर्व अनुमोदन के अधीन रहते हुये अचल सम्पत्ति को प्राप्त तथा धारण करना;

4.12 सोसाइटी पंजीकरण अधिनियम, 1860 में निहित प्राविधानों के अधीन रहते हुये सोसाइटी के उद्देश्यों हेतु सोसाइटी की किसी सम्पत्ति के विषय में संव्यवहार करना;

4.13 एक निधि का अनुरक्षण करना तथा सोसाइटी के उद्देश्यों के लिए ही उसका उपयोग करना;

4.14 ऐसे सभी कार्यों को करना, जो सोसाइटी के सभी या किसी उद्देश्य की प्राप्ति के लिए आवश्यक, आनुषंगिक या सहायक हों।

5– <u>सोसाइटी का कार्यकारी निकाय–</u> सोसाइटी के कार्यकारी निकाय के प्रथम सदस्यों, जिनको सोसाइटी के नियमों एवं विनियमों द्वारा सोसाइटी के कार्यों का प्रबन्धन सौंपा गया है, के नाम पते तथा व्यवसाय निम्नवत् हैं :–

क्र. सं0	नाम तथा पदनाम और पता	कार्यकारी निकाय में प्रास्थिति
1	मुख्य वन्यजीव प्रतिपालक, उत्तर प्रदेश	चेयर परसन
2	मुख्य वन संरक्षक, पारिस्थितिकी विकास	वाइस चेयर परसन
3	निदेशक, कानपुर प्राणि उद्यान, कानपुर, उत्तर प्रदेश	सदस्य सचिव
4	निदेशक, लखनऊ प्राणि उद्यान, लखनऊ, उत्तर प्रदेश।	सदस्य
5	प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग, कानपुर नगर, उत्तर प्रदेश	सदस्य
6	उप मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश, लखनऊ	सदस्य
7	वित्त नियंत्रक, वन विभाग उत्तर प्रदेश	सदस्य

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हम विभिन्न व्यक्ति, जिसके नाम और पते नीचे दिये गये है तथा जो इस संगम ज्ञापन में वर्णित प्रायोजनार्थ संगठित हुये हैं, एतद्द्वारा इस संगम ज्ञापन पर अपने नाम हस्ताक्षरित करते हैं तथा इस पर अपने–अपने हस्ताक्षर करते हैं, और सोसाइटी रजिस्ट्रीकरण अधिनियम 1860(1860 का अधिनियम संख्या 21) के अधीन आज दिनांक ——————2011 को एक सोसाइटी गठित करते हैं:–

कमांक	नाम	व्यवसाय व पता	सदस्यों के हस्ताक्षर	साक्षी के हस्ताक्षर
1	श्री बी0के0पटनायक	मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश		
2	श्री के0के0 झा	मुख्य वन संरक्षक, पारिस्थितिकी विकास		
3	श्री के0 प्रवीन राव	निदेशक, कानपुर प्राणि उद्यान कानपुर, उत्तर प्रदेश		
4	श्रीमती रेनू सिंह	निदेशक, लखनऊ प्राणि उद्यान, लखनऊ उत्तर प्रदेश		
5	श्री बी0आर0 अहिरवार	प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग, कानपुर नगर, कानपुर, उत्तर प्रदेश	17.8.11	
6	श्री मनीष मित्तल	उप मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश, लखनऊ।	18/08	
7	श्री क्षत्रपाल वर्मा	वित्त नियंत्रक वन विभाग, उत्तर प्रदेश	18.8.11	

दिनांक:–

स्थान:–

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एवं विकास सोसाइटी

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अनुलग्नक–I

कानपुर प्राणि उद्यान प्रबन्ध एवं विकास सोसाइटी नियमावली

1– नाम एवं विस्तार– यह नियमावली " कानपुर प्राणि उद्यान प्रबन्ध एवं विकास सोसाइटी नियमावली–2011" कही जाएगी और उत्तर प्रदेश में लागू होगी।

2– सोसाइटी का पंजीकृत कार्यालय– कार्यालय, निदेशक, कानपुर प्राणि उद्यान आजाद नगर, नवाबगंज, कानपुर, उत्तर प्रदेश, 208002

3– परिभाषाएं– जब तक सन्दर्भ से अन्यथा अपेक्षित न हो, इस नियमावली में:–

(क) "अधिनियम" का तात्पर्य सोसाइटी रजिस्ट्रीकरण अधिनियम, 1860(अधिनियम संख्या–21 सन् 1860) से है;

(ख) " सामान्य निकाय" का तात्पर्य नियम–21 में यथा उल्लिखित सोसाइटी के सामान्य निकाय से है;

(ग) " सोसाइटी" का तात्पर्य "कानपुर प्राणि उद्यान प्रबन्ध एवं विकास सोसाइटी" से है;

(घ) "चेयरपरसन" का तात्पर्य सोसाइटी के सामान्य, निकाय एवं कार्यकारी निकाय के चेयनपरसन से है;

(ड़) " कार्यकारी निकाय" का तात्पर्य इस नियमावली के नियम–23 के अधीन यथागठित सोसाइटी के शासी निकाय से है;

(च) "सदस्य सचिव" का तात्पर्य सोसाइटी एवं कार्यकारी निकाय के सदस्य–सचिव से है;

(छ) "ए.पी.ओ." का तात्पर्य वार्षिक कार्ययोजना से है जो वर्ष के दौरान कार्यान्वित किये जाने वाले कार्यकलापों/कार्यक्रमों को समाविष्ट करते हुए प्रतिवर्ष तैयार की जाती है;

(ज) "नियमावली" का तात्पर्य समय–समय पर यथासंशोधित सोसाइटी की नियमावली से है;

(झ) "सरकार" का तात्पर्य उत्तर प्रदेश सरकार से है;

(ञ) " राज्य" का तात्पर्य उत्तर प्रदेश राज्य से है;

(ट) "वाइस चेयर परसन" का तात्पर्य सोसाइटी के सामान्य निकाय या कार्यकारी निकाय के वाइस चेयर परसन से है;

4– सोसाइटी के सदस्य– सोसाइटी में सामान्य निकाय के सभी सदस्य सम्मिलित होंगे।

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सोसाइटी के पदेन और नामित सदस्य की पदावधि– सोसाइटी या उसकी किसी समिति/निकाय के पदेन सदस्यों की सदस्यता उसके द्वारा पद न धारण किये जाने की स्थिति में समाप्त हो जाएगी। नामित सदस्यों की पदावधि नामांकन के दिनांक से दो वर्ष की होगी।

6–नामित सदस्यों की अनर्हता– नामित सदस्य निम्नलिखित परिस्थितियों में सदस्यता धारण करने के लिए अनर्ह हो जाएंगें:–

1–सामान्य निकाय की किसी बैठक में उपस्थित संदस्यों के दो तिहाई बहुमत द्वारा किसी सदस्य के विरूद्ध अविश्वास प्रस्ताव पारित होने पर;

2–त्यागपत्र देने पर;

3–किसी आपराधिक कार्यकलाप के लिए न्यायालय द्वारा सिद्धदोष ठहराए जाने पर;

4–पदावधि की समाप्ति पर;

5–बिना अनुमति के लगातार तीन बैठकों में निरन्तर रूप से अनुपस्थित रहने पर।

7–सदस्यों की पंजी– सोसाइटी सदस्यों की एक पंजी रखेगी और सोसाइटी का प्रत्येक सदस्य इस पंजी में हस्ताक्षर करेगा और उसमें अपने व्यवसाय एवं पते का उल्लेख करेगा। कोई व्यक्ति तब तक सदस्य नहीं समझा जाएगा जब तक कि वह उपरोक्त रूप से पंजी पर हस्ताक्षर न कर दे।

8– पते में परिवर्तन– यदि सोसाइटी का कोई सदस्य अपने पते में परिवर्तन करता है तो वह सदस्यों की पंजी में अपना नया पता अधिसूचित कर सकता है, परन्तु यदि वह अपना नया पता अधिसूचित करने में विफल रहता है तो सदस्यों की पंजी में दिया गया पता उसका सही पता माना जाएगा।

9– सामान्य निकाय की बैठक– सामान्य निकाय वर्ष में कम से कम दो बार, और तत्पश्चात् जब भी आवश्यक हो, बैठक आयोजित करेगा, परन्तु यह कि चेयरपरसन कम से कम पचास प्रतिशत सदस्यों के लिखित अनुरोध पर सोसाइटी की बैठक बुलाएगा।

10– कार्यकारी निकाय की बैठक– कार्यकारी निकाय सामान्यतः वर्ष में चार बार, और तत्पश्चात जब भी आवश्यक हो, जिसका विनिश्चय चेयर परसन द्वारा किया जायेगा, बैठक आयोजित करेगा।

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11– बैठक के लिए नोटिस– सामान्य निकाय या कार्यकारी निकाय की प्रत्येक बैठक के लिए सामान्य निकाय या कार्यकारी निकाय यथास्थिति के सदस्यों को पन्द्रह दिन की नोटिस दी जाएगी:

परन्तु यह कि आपात स्थिति में चेयरपरसन नोटिस की अवधि को ऐसी अवधि तक कम कर सकता है जैसा वह उचित समझे।

12– गणपूर्ति– सामान्य निकाय या कार्यकारी निकाय यथास्थिति के पचास प्रतिशत सदस्यों से किसी बैठक की गणपूर्ति होगी;
परन्तु यह कि यदि गणपूर्ति के अभाव में कोई बैठक स्थगित कर दी जाय, तो स्थगित बैठक के लिए किसी गणपूर्ति की आवश्यकता नहीं रहेगी।

13– बैठक का पीठासीन अधिकारी– सामान्य निकाय या कार्यकारी निकाय की प्रत्येक बैठक की अध्यक्षता चेयरपरसन द्वारा की जाएगी। चेयरपरसन की अनुपस्थिति में बैठक की अध्यक्षता चेयरपरसन की लिखित अनुमति से वाइस चेयरपरसन द्वारा की जाएगी।

14– मत– सामान्य निकाय या कार्यकारी निकाय के प्रत्येक सदस्य के पास एक मत होगा और सभी मामलों में निर्णय बहुमत द्वारा लिया जाएगा। मतों के बराबर होने की दशा में चेयरपरसन का मत निर्णायक होगा।

15– संकल्प– सामान्य निकाय या कार्यकारी निकाय की बैठक की कार्यसूची बैठक के कम से कम सात दिन पूर्व सदस्यों के मध्य परिचालित की जाएगी: परन्तु यह कि सामान्य निकाय या कार्यकारी निकाय का कोई सदस्य एक पूर्ण सप्ताह की नोटिस देने के पश्चात् या संबंधित चेयर परसन या बैठक की अध्यक्षता करने वाले व्यक्ति की अनुमति से सामान्य निकाय या कार्यकारी निकाय यथास्थिति की बैठक में संकल्प प्रस्तावित करेगा।

16– चेयरपरसन का विनिर्णय– प्रकिया सम्बन्धी समस्त आपत्तियों के सम्बन्ध में सम्बन्धित चेयरपरसन का विनिर्णय अन्तिम होगा।

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– बैठक का कार्यवृत्त– सामान्य निकाय या कार्यकारी निकाय की किसी बैठक की कार्यवाही का कार्यवृत्त सदस्य–सचिव द्वारा तैयार किया जाएगा और उसे सामान्य निकाय या कार्यकारी निकाय के सदस्यों के मध्य परिचालित किया जाएगा। सुझाए गये किसी संशोधन के साथ कार्यवृत्त को सामान्य निकाय या कार्यकारी निकाय की अगली बैठक में पुष्टि के लिए रखा जाएगा। संबंधित चेयरपरसन द्वारा कार्यवृत्त की पुष्टि एवं उस पर हस्ताक्षर किये जाने के पश्चात् उसे कार्यवृत्त–पुस्तक में अभिलिखित किया जाएगा।

18– अधिप्रमाणीकरणः– कार्यकारी निकाय के सभी आदेशों और विनिश्चयों का अधिप्रमाणन, सदस्य सचिव या कार्यकारी निकाय द्वारा इस निमित्त प्राधिकृत किसी अन्य व्यक्ति के हस्ताक्षर से किया जायेगा।

19– सरकार को प्रतिलिपिः– सामान्य निकाय या कार्यकारी निकाय की प्रत्येक बैठक की कार्यवाहियों की प्रतिलिपि सरकार को उपलब्ध करायी जायेगी।

20– यात्रा भत्ताः– सरकारी कर्मचारी, जो सामान्य निकाय या कार्यकारी निकाय के सदस्य हों, सामान्य निकाय या कार्यकारी निकाय या सोसाइटी या कार्यकारी निकाय के कार–बार के संबंध में चेयरपरसन द्वारा नियुक्त उप समिति/(यों) की बैठकों में सम्मिलित होने के लिये की गई यात्रा के सम्बन्ध में यात्रा और दैनिक भत्ता हेतु सम्बन्धित सरकारी नियमों द्वारा शासित होगें। गैर सरकारी सदस्यों के लिये यात्रा और अन्य भत्ते उसी रूप में प्रदान किये जायेगें जैसा कि कार्यकारी निकाय द्वारा विनिश्चित किया जाय।

21–सोसाइटी का सामान्य निकायः– सामान्य निकाय के सदस्य निम्नवत् हैं :–

क.सं.	धारित पद का नाम, व्यवसाय और पता	सोसाइटी में प्रास्थिति
1.	प्रमुख सचिव, वन विभाग, उत्तर प्रदेश।	चेयरपरसन
2.	मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश।	वाइस चेयरपरसन
3.	निदेशक, कानपुर प्राणि उद्यान, कानपुर, उत्तर प्रदेश।	सदस्य–सचिव
4.	प्रमुख वन संरक्षक, उत्तर प्रदेश, लखनऊ।	सदस्य

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5.	आयुक्त, कानपुर मंडल, कानपुर।	सदस्य
6.	सचिव, पर्यटन विभाग, उत्तर प्रदेश।	सदस्य
7.	मुख्य वन संरक्षक, पारिस्थितिकी विकास, उत्तर प्रदेश, लखनऊ।	सदस्य
8.	निदेशक, लखनऊ प्राणि उद्यान, लखनऊ, उत्तर प्रदेश।	सदस्य
9.	प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग, कानपुर नगर, कानपुर।	सदस्य
10.	उपाध्यक्ष, कानपुर विकास प्राधिकरण, कानपुर।	सदस्य
11.	निदेशक, वानिकी प्रशिक्षण संस्थान, कानपुर।	सदस्य
12.	मुख्य पशु चिकित्सा अधिकारी, कानपुर नगर, कानपुर।	सदस्य
13.	उप मुख्य वन्यजीव प्रतिपालक, लखनऊ, उत्तर प्रदेश।	सदस्य
14.	विशेष सचिव, वित्त विभाग, उत्तर प्रदेश सरकार।	सदस्य
15.	संकायाध्यक्ष, पशुपालन विभाग, मथुरा पशुचिकित्सा महाविद्यालय, मथुरा।	सदस्य
16.	वित्त नियंत्रक, वन विभाग, उत्तर प्रदेश।	सदस्य
17.	मुख्य वन्यजीव प्रतिपालक, उत्तर प्रदेश, लखनऊ द्वारा नाम निर्दिष्ट वन्यजीव–विशेषज्ञ,(व्यक्तिगत)।	सदस्य
18.	मुख्य वन्यजीव प्रतिपालक, उत्तर प्रदेश, लखनऊ ,द्वारा नाम निर्दिष्ट वन्यजीव गैर सरकारी संगठन।	सदस्य

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22– सामान्य निकाय की शक्तियॉ और कृत्यः–

सामान्य निकाय की शक्तियों और कृत्यों में अन्य बातों के साथ –साथ निम्नलिखित सम्मिलित होगी–

(एक) सोसाइटी का संपरीक्षित वार्षिक तुलन–पत्र तथा वार्षिक प्रतिवेदन को अंगीकृत करना;

(दो) अध्यक्ष (चेयरमैन) की अनुमति से, सोसाइटी से सम्बन्धित किसी मामले पर विचार विमर्श आयोजित करना;

(तीन) कार्यकारी समिति द्वारा संचालित विभिन्न कार्यक्रमों के समुचित संचालन में आवश्यक निदेश देना;

(चार) वार्षिक बजट को अनुमोदित करना;

(पांच) सोसाइटी के उद्देश्यों और नियमों में परिवर्तन, संशोधन या सामंजस्य स्थापित करना; और

(छः) कार्यक्रमों के समुचित कियान्वयन का पर्यवेक्षण करने के लिये समय–समय पर उप–समितियों का सृजन करना और उनके माध्यम से विभिन्न कार्यक्रमों को प्रभावी रूप से कियान्वित कराना।

23– सोसाइटी का कार्यकारी निकाय

(1) सोसाइटी के कार्यों और उसकी निधियों तथा चल और अचल सम्पत्ति का सामान्य अधीक्षण, निर्देशन और नियंत्रण कार्यकारी निकाय में निहित होंगे।

(2) सोसाइटी, कार्यकारी निकाय द्वारा प्रबंधकृत/शासित होगी, जिसमें निम्नलिखित होंगेः–

कम.सं.	नाम, पदनाम और पता	कार्यकारी निकाय में प्रास्थिति
1	मुख्य वन्यजीव प्रतिपालक, उत्तर प्रदेश।	चेयरपरसन
2	मुख्य वन संरक्षक, पारिस्थितिकी विकास, उत्तर प्रदेश।	वाइस चेयर परसन
3	निदेशक, कानपुर प्राणि उद्यान, कानपुर, उत्तर प्रदेश।	सदस्यसचिव
4	निदेशक, लखनऊ प्राणि उद्यान, लखनऊ उत्तर प्रदेश	सदस्य
5	प्रभागीय निदेशक, सामाजिक वानिकी, प्रभाग, कानपुर नगर, उत्तर प्रदेश	सदस्य
6	उप मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश, लखनऊ।	सदस्य
7	वित्त नियंत्रक, वन विभाग, उत्तर प्रदेश।	सदस्य
8	मुख्य वन्यजीव प्रतिपालक, उत्तर प्रदेश द्वारा यथा विनिश्चित वन्यजीव क्षेत्र से दो विशिष्ट आमंत्रीगण	सदस्य गण

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.4 कार्यकारी निकाय की शक्तियॉं और कार्यः–

कार्यकारी निकाय की शक्तियॉं और कार्य, अन्य बातों के साथ–साथ, निम्नलिखित होंगेः–

(एक) पिछली बैठक के कार्य–बिन्दु की पुष्टि करना;

(दो) अपने कर्तव्यों के संचालन के दौरान अधिनियम, नियमावली और विनियमावली के उपबन्धों का पालन करना;

(तीन) सदस्य–सचिव के माध्यम से किसी राष्ट्रीयकृत बैंक में सोसाइटी के खाते का रखरखाव सुनिश्चित करना; भारत के नियंत्रक और महालेखाकार परीक्षक के पैनल में सम्मिलित किसी प्रसिद्ध चार्टर्ड एकाउन्टेंट द्वारा सोसाइटी के खातों की वार्षिक सम्परीक्षा कराना;

(चार) केन्द्र सरकार, सरकार, केन्द्रीय प्राणि उद्यान प्राधिकरण और सामान्य निकाय द्वारा अनुमोदित विभिन्न विकास परियोजनाओं, कार्यक्रमों, क्रियाकलापों और अनुरक्षण कार्यों के कार्यान्वयन का पर्यवेक्षण करना;

(पांच) तिथि, समय और स्थान निर्धारित करके सोसाइटी के सामान्य निकाय की बैठकें आयोजित करना;

(छः) सोसाइटी के उद्देश्यों के अनुरूप प्रयोजनों के लिये वैज्ञानिक और शैक्षिक संस्थाओं तथा धर्मार्थ और परोपकारी अन्य संस्थाओं को प्रोत्साहित करना;

(सात) वन्य जीवों के व्यवहार और स्वास्थ्य पर परीक्षण और शोध हेतु प्रयोगशाला बनाना और उसे सज्जित करना;

(आठ) सोसाइटी की किसी सम्पत्ति जैसे कि उपकरण, वस्तुएं इत्यादि को किराये पर उठाना;

(नौ) कार्यकारी निकाय की बैठकों में भाग लेने के लिये किसी संबंधित अधिकारी/व्यक्ति को विशेष आमंत्री के रूप में आमंत्रित करना;

(दस) सोसाइटी की कार्य प्रणाली के लिए व्यापक नीतिगत ढॉंचा निर्धारित करना और समय–समय पर इसकी कार्य प्रणाली की समीक्षा करना;

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(ग्यारह)ऐसे नियम बनाना जो कि सोसाइटी के कृत्यों के निष्पादन के लिये आवश्यक हों।

25. सदस्य –सचिव के कार्य और शक्तियॉः–

सदस्य–सचिव के कार्य और शक्तियॉ निम्नलिखित हैं:–

(एक) सम्बन्धित चेयरपरसन के अपेक्षित अनुमोदन के पश्चात् सामान्य निकाय अथवा कार्यकारी निकाय की बैठक बुलाना;

(दो) सामान्य निकाय की बैठक में सम्मिलित होना और ऐसी बैठकों की कार्यवाही को अभिलिखित करना;

(तीन) सोसाइटी की स्थापना, प्रबन्धन और प्रशासन के लिये, निष्पादित कार्यों के लिये सोसाइटी की अथवा किसी अन्य निधि से भुगतान करना;

(चार) सोसाइटी का वार्षिक बजट तैयार करना और सोसाइटी के सामान्य निकाय से इसको अनुमोदित कराना;

(पांच)सोसाइटी के खाते से आवश्यक निधियों को आहरित करना और सोसाइटी के दिन–प्रतिदिन के कृत्यों के लिये उनकों नियमावली के अनुसार व्यय करना;

(छः) कार्यकारी निकाय की संस्तुतियों पर विभिन्न कार्यों के लिये निधियॉ उपलब्ध कराना;

(सात) निधियों उपलब्ध कराने वाले अभिकरणों जैसे कि भारत सरकार/उत्तर प्रदेश सरकार आदि को प्रगति रिपोर्ट अग्रसारित करना;

(आठ) सोसाइटी के संचालन के लिये विभिन्न संगठनों से पत्र–व्यवहार करना तथा विनिर्दिष्ट विषयों पर पत्र–व्यवहार करना;

(नौ) सोसाइटी की समस्त प्राप्तियों, रसीदों तथा व्यय–विवरणों को तैयार करना;

(दस) सोसाइटी के उद्देश्यों की पूर्ति के लिये प्रत्यक्ष

अथवा अप्रत्यक्ष रूप से उपयोगी या उपयोगी प्रतीत होने वाले धन या उपयोगी वस्तुओं को भारतवर्ष के और बाहर के व्यक्तियों/संस्थाओं से प्राप्त करना;

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सदस्य/सचिव

(ग्यारह) सोसाइटी के सामान्य प्रशासन का प्रबन्ध करना;

(बारह) कार्यकारी निकाय के अवलोकनार्थ सम्परीक्षित लेखा प्रस्तुत करना;

(तेरह)कानपुर प्राणि उद्यान के परिसर के अन्दर के ऐसे कार्यों को करना, जो सोसाइटी के उद्देश्यों की पूर्ति के लिये प्रत्यक्ष अथवा अप्रत्यक्ष रूप में सहायक हों।

26. निधि :– इस सोसाइटी की निधि का नाम 'कानपुर प्राणि उद्यान प्रबन्ध एवं विकास सोसाइटी निधि' होगा और इसमें निम्नलिखित को जमा किया जायेगा:–

(एक) सरकार/केन्द्र सरकार से प्राप्त आवर्ती तथा अनावर्ती सहायता;

(दो) सार्वजनिक क्षेत्र के उपक्रमों, निजी संस्थाओं, सामान्य जनता आदि से प्राप्त धन;

(तीन) निवेश तथा अन्य स्रोतों से प्राप्त आय ;

(चार) अनुदान तथा उपहार से;

(पॉच) अनुज्ञप्ति शुल्क, आगन्तुकों से प्रवेश–शुल्क/अन्य शुल्क, पट्टा किराया आदि से;

(छः) अंशदान, दान, अन्य स्रोतों जैसे कि अभिदान, परामर्श शुल्क आदि से;

(सात) इनके जमा पर प्रोद्भूत ब्याज से; तथा

(आठ) निधि केवल वैध वित्तीय स्रोतों से प्राप्त की जा सकती है।

27. निधि का उपयोग और वितरण:– सोसाइटी के व्ययों की पूर्ति के लिए निधि का उपयोग और वितरण निम्नलिखित रीति से किया जायेगा–

(एक) कानपुर प्राणि उद्यान के जानवरों के विकास, भरण–पोषण और सुरक्षा तथा संरक्षण के लिए व्यय।

(दो) सोसाइटी के प्रबंधन के लिए अनावर्ती के साथ–साथ आवर्ती व्यय, जिसमें इसके अधिकारियों एवं कर्मचारियों को देय वेतन, भत्ते और अन्य पारिश्रमिक सम्मिलित होंगें।

(तीन) अपने कृत्यों के निर्वहन में किये गये सोसाइटी के व्यय।

सदस्य सचिव

(चार)सदस्य–सचिव सभी संसाधनों, आस्तियों, सम्पत्तियों और निर्माणों का प्रबन्धन और नियंत्रण करेगा। सदस्य–सचिव सामान्य निकाय/कार्यकारी निकाय द्वारा स्वीकृति कार्यों के लिए बजट के भीतर व्यय अनुमोदित और स्वीकृत करेगा।

(पॉच)सोसाइटी की निधियॉ राष्ट्रीयकृत बैंक में सोसाइटी के खाते में जमा की जायेगी, जिसे सदस्य–सचिव और सामान्य निकाय के चेयरपर्सन द्वारा प्राधिकृत किसी सदस्य द्वारा संयुक्त रूप से संचालित किया जायेगा।

28. लेखा प्रकिया–

1. सोसाइटी प्रत्येक वित्तीय वर्ष में अगले वित्तीय वर्ष के लिये अपना बजट ऐसे रूप में और ऐसे समय पर जैसा विहित किया जाय तैयार करेगी, जिसमें सोसाइटी की अनुमानित प्राप्तियॉ और व्यय प्रदर्शित होंगे और सामान्य निकाय द्वारा इसे अनुमोदित करायेगी।
2. सोसाइटी समुचित लेखा एवं अन्य सुसंगत अभिलेखों का अनुरक्षण करेगी तथा सदस्य–सचिव के माध्यम से लेखा का वार्षिक विवरण उस रूप में, जो कि विहित किया जाय, तैयार करेगी।

29. लेखा परीक्षा–

सोसाइटी की लेखा–परीक्षा किसी ऐसे ख्याति प्राप्त और अनुभवी चार्टर्ड एकाउन्टेट द्वारा की जायेगी जो भारत के नियंत्रक एवं महालेखा परीक्षक के पैनल में हो।

30 वार्षिक प्रतिवेदन–

(1)सोसाइटी अपने किया–कलापों का पूरा विवरण देते हुए पूर्ववर्ती वित्तीय वर्ष के लिए अपना वार्षिक प्रतिवेदन तैयार करेगी, और तीन माह के अन्तर्गत अनुमोदन के लिए सामान्य निकाय के समक्ष प्रस्तुत करेगी।

(2)अन्य बातों के साथ–साथ वार्षिक प्रतिवेदन में निम्नांकित भी दिया जायेगा–

(एक)किये गये विभिन्न कार्यों एवं व्यय की गई धनराशि का विवरण,

(दो)सोसाइटी द्वारा विभिन्न स्रोतों से प्राप्त की गई धनराशि का विवरण, और

(तीन)लेखा परीक्षा रिपोर्ट में अंकित किये गये वन्य जीव संरक्षण के प्रयास और संबंधित किया–कलाप।

सदस्य सचिव

Murli/Ld vetland

31. कार्यों का अनुश्रवण एवं मूल्यांकन– कार्यकारी समिति प्राणि उद्यान में सम्पादित कार्यों के स्वतंत्र अनुश्रवण और मूल्यांकन के लिए प्रकिया निर्धारित करेगी और दिशा–निर्देश जारी करेगी।

32. सोसाइटी की सम्पत्ति– सोसाइटी की समस्त सम्पत्तियॉं केवल सोसाइटी की होंगी।

सोसाइटी की आय और सम्पत्ति का उपयोग सोसाइटी के संगम ज्ञापन में विहित उद्देश्यों की प्रोन्नति के लिए ही किया जायेगा।

33. वाद एवं कार्यवाही– सोसाइटी अपने सदस्य–सचिव के माध्यम से सोसाइटी के नाम से वाद दाखिल कर सकती है अथवा इसके विरूद्ध इस नाम से वाद दाखिल किया जा सकता है।

(क)कोई रिक्ति होने अथवा सदस्य–सचिव अथवा सोसाइटी के किसी पदधारी के कार्यालय के पते में परिवर्तन होने के कारण कोई वाद अथवा कार्यवाही ग्राह्य नहीं होगी।

(ख)किसी वाद अथवा कार्यवाही में सोसाइटी के विरूद्ध पारित कोई निर्णय अथवा आदेश सोसाइटी की सम्पत्ति के विरूद्ध निष्पादनीय होना न कि सोसाइटी के किसी व्यक्ति अथवा किसी पदधारी की सम्पत्ति के विरूद्ध।

उपर्युक्त उपनियम(ख) की कोई बात सोसाइटी के किसी पदधारी को किसी अपराधिक दायित्व से छूट नहीं प्रदान करती है या किसी दण्ड न्यायालय द्वारा दोष सिद्ध किये जाने पर उनके द्वारा दिये जाने वाले किसी जुर्माने के संबंध में सोसाइटी की सम्पत्ति से किसी अभिदान के लिए दावा करने का अधिकार प्रदान नहीं करती है।

34. विनियम कार्यकारी निकाय सोसाइटी के कार्यो के प्रशासन एवं प्रबंधन के लिए विनियम बनाएगा जो इस नियमावली से असंगत न होंगे और इसी प्रकार इस तरह बनाये गये किसी विनियम में परिवर्धन, संशोधन, परिवर्तन एवं निरस्तीकरण कर सकता है।

35. सोसाइटी का प्रथम विनियम– कार्यकारी निकाय प्रथम विनियम बनाने के लिए उत्तरदायी होगा। ये विनियम सोसाइटी के कार्यो के प्रशासन एवं प्रबन्धन के नियमों के अनुकूल होने चाहिए।

सदस्य सचिव

36. सोसाइटी के कर्मचारी और सेवा नियमावली– सोसाइटी द्वारा भर्ती किये गये सभी कर्मचारियों के लिए सेवा नियमावली का निर्माण एवं प्रवर्तन शासी निकाय द्वारा शासन के पूर्व अनुमोदन से किया जायेगा।

37. प्राणि उद्यान के कर्मचारियों की सेवायें– शासन के पूर्व अनुमोदन से और कानपुर प्राणि उद्यान के अधिकारियों और कर्मचारियों द्वारा दिये गये विकल्प के आधार पर कानपुर प्राणि उद्यान के कर्मचारी सोसाइटी में कार्य कर सकते हैं।

38. बजट– (एक)सोसाइटी का वार्षिक बजट सदस्य–सचिव द्वारा तैयार किया जायेगा और प्रत्येक पूर्वगामी वर्ष के फरवरी माह में कार्यकारी निकाय के समक्ष प्रस्तुत किया जायेगा।

(दो)सदस्य–सचिव से बजट प्रस्ताव एवं प्रतिवेदन प्राप्त होने पर कार्यकारी निकाय इस पर विचार करेगा और ऐसे संशोधनों के अधीन, जिन्हें वह उनमें करना चाहे, उस पर अपना अनुमोदन प्रदान करेगा।

39. सामान्य मुहर एवं वाद– सोसाइटी की एक सामान्य मुहर होगी।

40. अचल सम्पत्ति का निस्तारण– सरकार के पूर्व अनुमोदन के बिना सोसाइटी की किसी भी अचल सम्पत्ति का किसी भी तरीके से निस्तारण नहीं किया जायेगा।

41. सोसाइटी का अधिग्रहण– यदि सोसाइटी ठीक से कार्य नहीं करती है तो सरकार के पास अधिकार होगा कि सोसाइटी की परिसम्पत्ति को अधिग्रहीत करले एवं सोसाइटी का प्रबन्धन स्वयं संभाल लें।

42. सोसाइटी का परिसमापन– सोसाइटी का विघटन अधिनियम के प्राविधानों के अनुरूप होगा। यदि सोसाइटी के परिसमापन अथवा विघटन पर इसके ऋणों और दायित्वों के परिशोधन के पश्चात् कोई धन या सम्पत्ति अवशेष रह जाती है तो सोसाइटी के किसी सदस्य को उसका भुगतान अथवा वितरण नहीं किया जायेगा बल्कि उसे इस प्रकार निस्तारित किया जायेगा जैसाकि सरकार द्वारा अधिनियम के प्राविधानों के अनुरूप इस सम्बन्ध में निर्णय लिया जाय।

43. सोसाइटी के उद्देश्यों में परिवर्तन– सरकार के पूर्व अनुमोदन के अधीन सोसाइटी किसी उद्देश्य या उद्देश्यों जिसके लिए यह स्थापित की गयी है, में संशोधन कर सकती है:

परन्तु यह कि सोसाइटी द्वारा अधिनियम में इसके लिए विहित प्रकिया का पालन किया जायेगा।

44. नियमों में परिवर्तन– इन नियमों को इस उद्देश्य हेतु सम्यक् रूप से आहूत शासी निकाय की किसी बैठक में उपस्थित सदस्यों के दो तिहाई बहुमत द्वारा पारित प्रस्ताव से शासन का पूर्व अनुमोदन प्राप्त करके किसी भी समय संशोधित, निरस्त अथवा परिवर्तित किया जा सकता है।

45. संविदायें– (क) सोसाइटी के लिए एवं सोसाइटी की ओर से समस्त संविदाएं सोसाइटी के नाम से किये जाने के लिए अभिव्यक्त होंगी।

(दो) सोसाइटी या कार्यकारी निकाय के किसी सदस्य या उसके सम्बन्धी या किसी फर्म जिसमें ऐसा सदस्य या उसका सम्बन्धी भागीदार या अंशधारक है या निजी कम्पनी जिसमें सोसाइटी का सदस्य भागीदार या निदेशक है, सोसाइटी के निमित्त और उसकी ओर से किसी माल या सामग्री के क्रय, विक्रय या आपूर्ति के लिए कोई संविदा नहीं की जायेगी और न ही कोई वित्तीय अनुबन्ध ही किया जायेगा।

46. सोसाइटी के अभिलेख– (एक)सोसाइटी अपने पंजीकृत कार्यालय में लेखा संबंधी समुचित अभिलेख रखेगी, जिनमें निम्नलिखित की यथार्थ प्रविष्टि की जायेगी;

(क) समस्त प्राप्त धनराशियॉ एवं उनकी प्राप्ति के स्रोत, सोसाइटी द्वारा व्यय समस्त धनराशियॉ तथा उद्देश्य या प्रयोजन जिसके लिए ऐसी धनराशियॉ व्यय की गयी हैं।

(ख) सोसाइटी की परिसम्पत्तियॉ एवं दायित्व।

(दो) सोसाइटी के अन्य अभिलेख निम्नवत् होंगें:–

1. कार्यसूची पंजी।
2. सदस्यता पंजी।
3. कार्यवाही पंजी।
4. रोकड़ बही।
5. सोसाइटी के कर्मचारियों के अभिलेख।

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हम कार्यकारी निकाय के निम्न सदस्यगण प्रमाणित करते हैं कि उपरोक्त सोसाइटी की नियमावली की सत्य प्रतिलिपि है:–

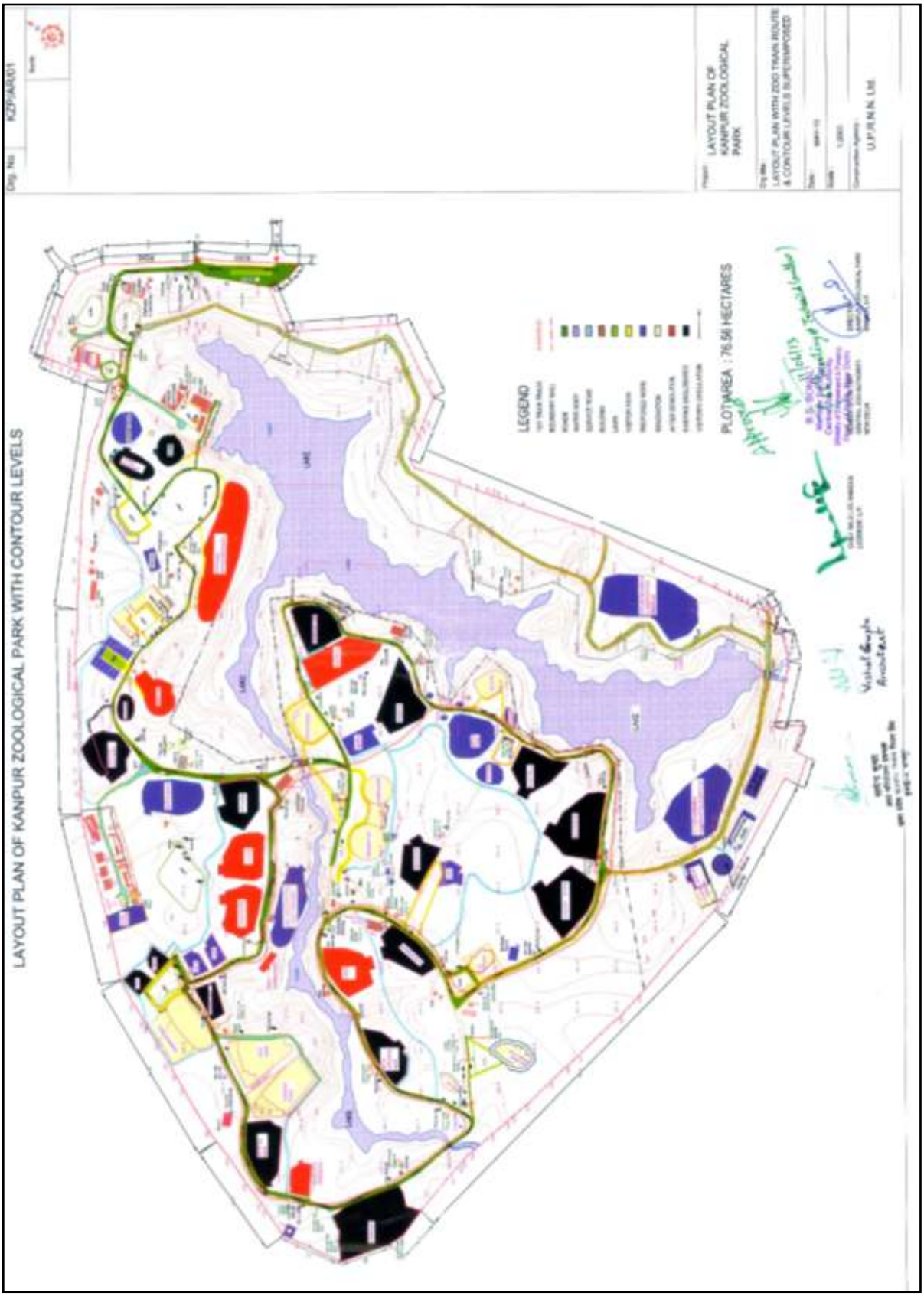
क. सं0	नाम	पता	हस्ताक्षर
1.	श्री बी0के0 पटनायक	मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश।	
2.	श्री के0के0 झा	मुख्य वन संरक्षक, पारिस्थितिकी विकास।	
3.	श्री के0 प्रवीन राव	निदेशक, कानपुर प्राणि उद्यान कानपुर,उत्तर प्रदेश।	
4.	श्रीमती रेनू सिंह	निदेशक, लखनऊ प्राणि उद्यान, लखनऊ,उत्तर प्रदेश।	
5.	श्री0बी0आर0 अहिरवार	प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग कानपुर नगर, कानपुर, उत्तर प्रदेश।	17.8.11
6.	श्री मनीष मित्तल	उप मुख्य वन्य जीव प्रतिपालक, उत्तर प्रदेश,लखनऊ।	18/08
7.	श्री छत्रपाल वर्मा	वित्त नियंत्रक वन विभाग, उत्तर प्रदेश।	18.8.11

दिनांक–
स्थान–

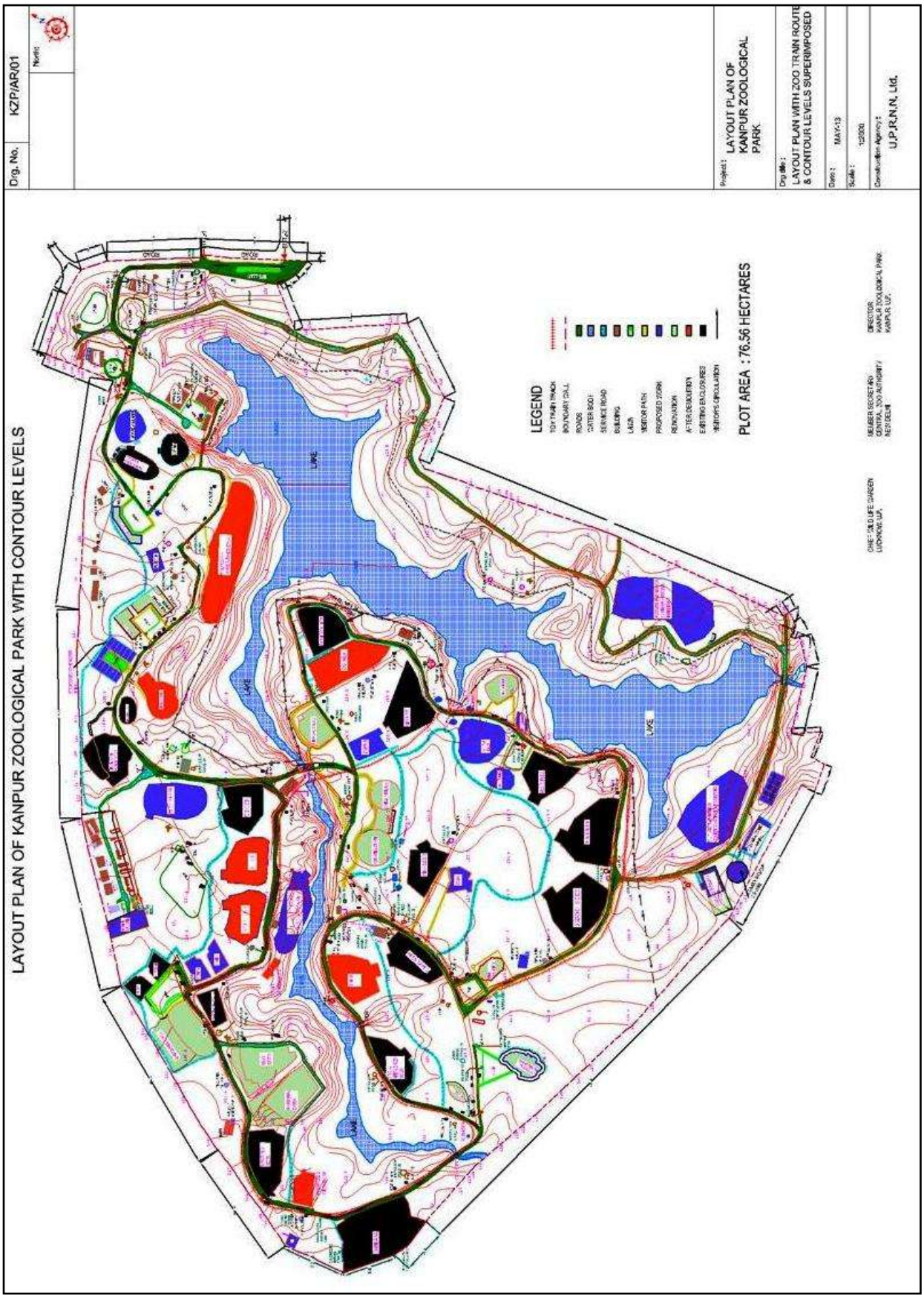
सदस्य सचिव
कानपुर प्राणि उद्यान
प्रबन्ध एवं विकास सोसाइटी

Murli/Lcd veiland

Annexure IX Layout Plan of Kanpur Zoological Park Approved By CZA

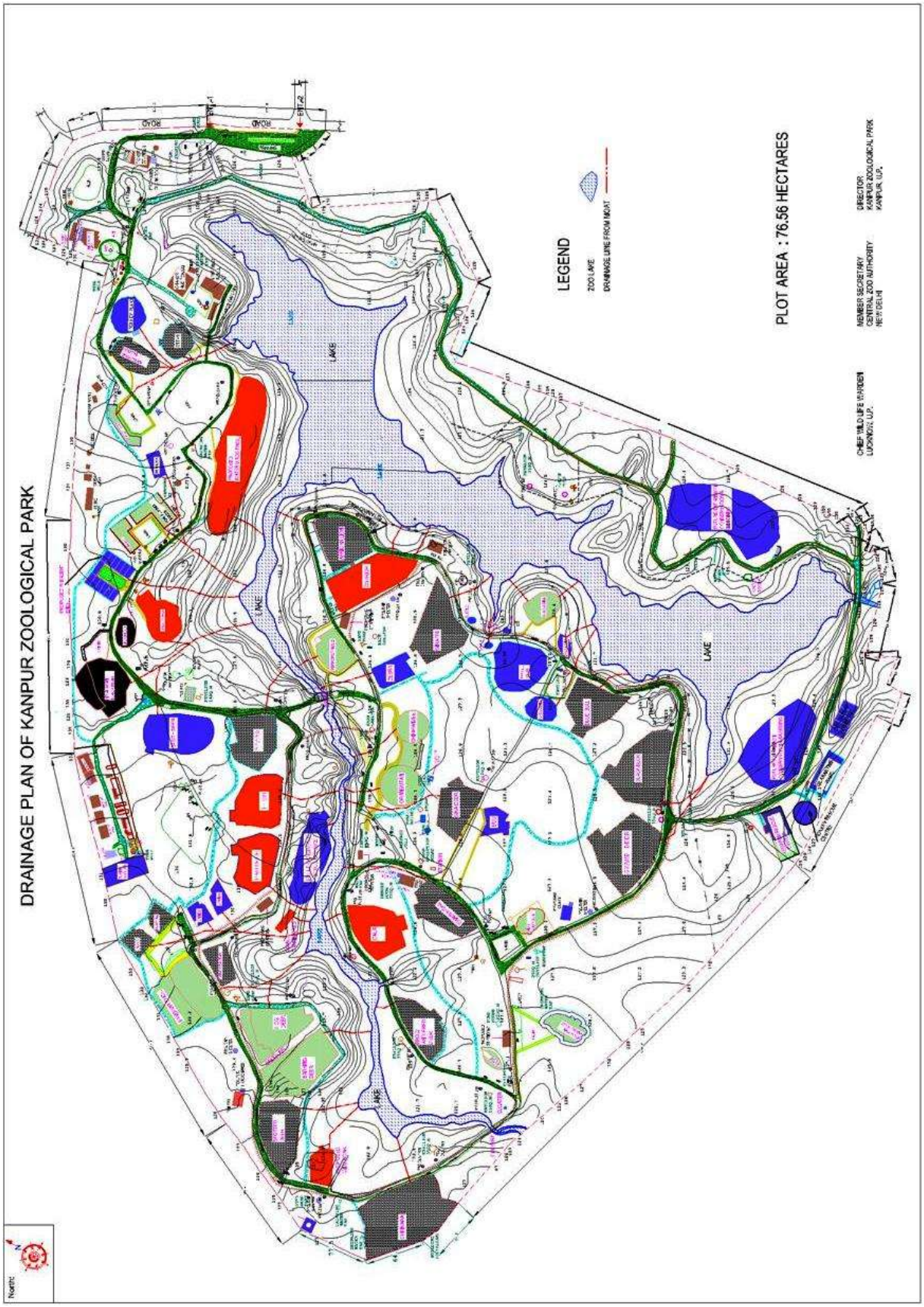


Annexure X Contour Plan of Kanpur Zoological Park

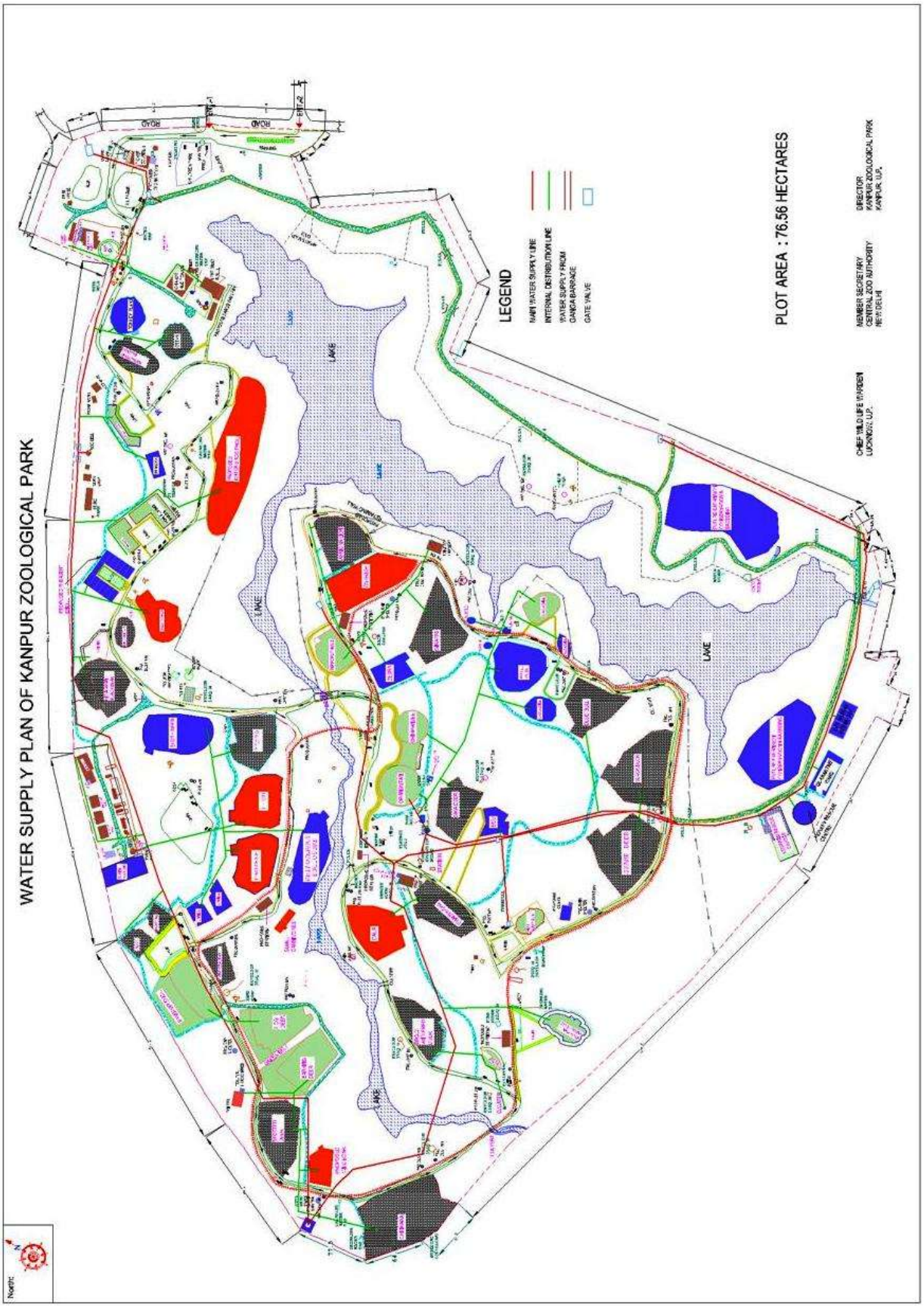


Annexure XI Layout Plan indicating the electricity lines

Annexure XII Layout Plan indicating Drainage of Storm Water



Annexure XI1I Layout Plan indicating Water Distribution System



Annexure XIV Layout Plan indicating Sewage system