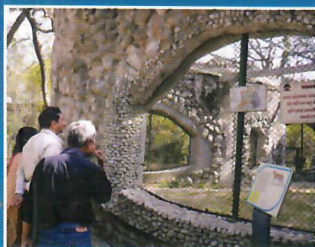


Zoos In India

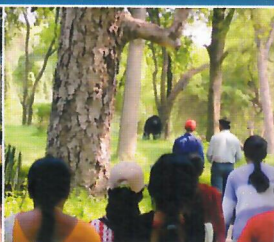
LEGISLATION, POLICY,
GUIDELINES AND STRATEGY
2014



1990'



2000'



2010'



केन्द्रीय चिड़ियाघर प्राधिकरण

Central Zoo Authority

(STATUTORY BODY UNDER THE MINISTRY OF ENVIRONMENT,
FORESTS & CLIMATE CHANGE, GOVT. OF INDIA)

Zoos in India 2014

**Legislation,
Policy,
Guidelines
and
Strategy**



Central Zoo Authority
(Statutory Body under the Ministry of Environment,
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Zoos in India - 2014

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प्रकाश जावडेकर
Prakash Javadekar



राज्य मंत्री
सूचना एवं प्रसारण (स्वतंत्र प्रभार)
पर्यावरण वन और जलवायु परिवर्तन
(स्वतंत्र प्रभार) और
संसदीय कार्य
भारत सरकार

Minister of State
Information & Broadcasting (Independent Charge)
Environment, Forest & Climate Change
(Independent Charge) and
Parliamentary Affairs
Government of India



FOREWORD

The Wild Life (Protection) Act, 1972 was amended in 1992 accordingly Central Zoo Authority was established in the year 1992, to oversee the functioning of zoos in the country and to provide them with technical and other assistance for their improvement. The National Zoo Policy, 1998 was formulated to give clear directions for the functioning of zoos. This Policy states main objective of zoos shall be to complement and strengthen the national efforts in conservation of rich biodiversity of the country, particularly the wild fauna. The Wild Life (Protection), Act was further amended in 2003 where rescue centres and circuses were also brought under the definition of zoos. No zoo can operate in India without being recognized by the Central Zoo Authority (Section 38HI) and no new zoo can be established in the country without obtaining the prior approval of the Authority (38H1A). The Government of India has always recognized the importance of ex-situ wildlife conservation as being the principle importance. This has resulted in establishment of many modern zoos in major Indian cities after independence.

To play the assigned roles, the zoos need to have physically, genetically and behaviourally healthy, self-sustaining populations of desirable wild animal species. This is important, not only for display but also as an insurance for further exigencies and release/ introduction/ re-introduction in the wild, if required. To play all these roles, we need to manage our zoos more scientifically, based on good management practices and keeping animal welfare in mind. The Recognition of Zoo Rules, 1992, which has been further replaced by Recognition of Zoo Rules, 2009 were formulated to fix standards and norms for scientific management of zoos. Accordingly, guidelines for facilitating effective and scientific, management of zoos in India in consonance with Rule 10 of Recognition of Zoo (Amendment) Rules, 2013 and for other aspects has been formulated.

The Central Zoo Authority is working in this direction, it has been the endeavour of the Central Zoo Authority to ensure that Zoo animals are provided with conditions that are congenial to their behavioural and physical well-being, and are able to procreate for augmenting their wild declining populations.

I hope the compilation on "Zoos in India legislation, policy, guidelines and strategies" will help in better management of existing zoos and facilitate creation of even better zoos in the country in future and will also be a very useful publication not only for Zoo Directors but also for Veterinarians, Managers, Researchers, Scholars and Students interested in pursuing wildlife management.

(Prakash Javadekar)



अर्थो वै परियाली ।
वर्धो वै सुखासी ॥



GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT & FORESTS

Central Zoo Authority



PREFACE

The Zoos in India are managed as per the provisions of the Wild Life (Protection) Act, 1972 and guided by the National Zoo Policy, 1998. The Government of India established the Central Zoo authority in the year 1992 to oversee the functioning of Zoos in the country and to control mushrooming of ill-planned and ill-conceived Zoos. The Central Zoo Authority is working in this direction. It has been the endeavor of the Central Zoo Authority to ensure that Zoo animals are provided with conditions that are congenial to their psychological and physical well-being and are able to procreate augmenting declining populations in wild. The National Zoo Policy adopted in October, 1998 highlights the need for adequate financial and technical resources for effective functioning of Zoos in the country. The Policy also lays emphasis on coordination between the Zoos and eminent research and education institutions on various aspects of Zoo Management. The Recognition of Zoo Rules, 1992 prescribes the different standards and norms to be followed in the Zoos to provide appropriate housing, veterinary care, diet etc. to the animals kept. In order to achieve the mandated function of CZA, Recognition of Zoo Rules, 1992 was formulated fixing norms and standard for management of zoos in the country. It has been further replaced by Recognition of Zoo Rules, 2009, which are more facilitatory than regulatory in nature. The endeavor of CZA for improvement of zoos in country through Legislation, Policy, Guidelines & Strategy has been compiled with latest amendments, formulation of policy. I hope this compilation on "Zoos in India - Legislation, Policy, Guidelines and Strategy" will help in better management of existing Zoos and facilitate creation of better zoos in future.

(B.S. Bonal)

Member Secretary
Central Zoo Authority

1

National Zoo Policy, 1998

1. National Zoo Policy, 1998

Preamble

1.1 The growing awareness for nature & wildlife conservation has made zoos a popular institution. Estimates indicate that 10% of the world's population visit zoos every year. There are about 350 animal collections in India, which are visited by more than 50 million people annually.

1.2 While there is a history of scientific interest, conservation and welfare of captive wild animals in the country, many zoos have evolved from menageries and private collections, and most zoos until the last two decades were set up mainly for entertainment and recreation. As wildlife resources were abundant in the past, scientific knowledge about the behavioral and biological requirements of animals did not receive adequate attention, with the result that scientific management of wild animals in captivity has evolved slowly.

1.3 The need for making conservation as one of the main objectives of management of zoos was realized by Government of India soon after independence and the Indian Board of Wildlife made important recommendations in this regard. The Government set up an Expert Committee on Management of Zoos in November, 1972 and its recommendations were accepted in June, 1973. The recommendations are relevant even now for improving the management of Zoos. The National Wildlife Action Plan of 1983 again emphasized the role of ex-situ conservation in national conservation efforts. However, because of varied ownership patterns and divergent nature of animal collections, not much was achieved.

1.4 Today when wildlife habitats are under severe pressure and a large number of species of wild fauna have become endangered, the zoos have not only to sustain their own populations but also augment the depleting populations of endangered species in the wild. This new role has been acknowledged by the global conservation community and Article 9 of the Convention on Biological Diversity.

1.5 As zoos are visited by a large number of visitors, zoos are a potent tool for educating people about the close linkage between protection of natural areas and maintaining the life supporting processes of nature. Well-planned and appropriately designed zoos can sensitize visitors to the dangers of a hostile or indifferent attitude towards nature.

1.6 In India, many well designed zoos were set up in some of the States but for the most part, zoos have not been able to meet the challenges

imposed by the changing scenario and still continue with the legacy of past i.e. displaying animals under conditions which are neither congenial to the animals nor educative and rewarding to the visitors.

1.7 The amendment of the Wildlife (Protection) Act, in 1991, provided for the enforcement of mandatory standards and norms for management of zoos through the Central Zoo Authority. However, it is realized that the objectives of the Act can be achieved only through co-operation and participation of various government agencies, non-governmental organisations and people at large.

1.8 The National Zoo Policy aims at giving proper direction and thrust to the management of zoos by mustering co-operation and participation of all concerned.

Objectives

2.1 The main objective of the zoos shall be to complement and strengthen the national efforts in conservation and strengthen the national efforts in conservation of the rich biodiversity of the country, particularly the fauna. The objective can be achieved through the following protocol :-

2.1.1 Supporting the conservation of endangered species by giving species, which have no chance of survival in wild, a last chance of survival through coordinated breeding under ex-situ condition and raise stocks for rehabilitating them in wild as and when it is appropriate and desirable.

2.1.2 To inspire amongst zoo visitors empathy for wild animals, an understanding and awareness about the need for conservation of natural resources and for maintaining the ecological balance.

2.1.3 Providing opportunities for scientific studies useful for conservation in general and creation of database for sharing between the agencies involved in in-situ and ex-situ conservation

2.1.4 Besides the aforesaid objectives, the zoos shall continue to function as rescue centres for orphaned wild animals, subject to the availability of appropriate housing and upkeep infrastructure. Where appropriate housing and upkeep is not available, State Government and the Central Government would ascertain setting up rescue facilities in off-the-display areas of the zoo, subject to the availability of land.

Strategy for Achieving the Objectives

General Policy about Zoos

3.1.1 Since zoos require a significant amount of resources in the form of

land, water, energy and money, no new zoo shall be set up unless a sustained supply of resources including finance and technical support are guaranteed.

3.1.2 Zoos shall prepare a long-term master plan for development to ensure optimum utilisation of the land, water, energy and finance.

3.1.3 Every Zoo shall maintain a healthy, hygienic and natural environment in the zoo, so that the visitors get an adequate opportunity to experience a natural environment.

3.1.4 Zoos shall give priority to endangered species in their collection and breeding plans. The order of preference for selection of species shall be (in descending order) locality, region, country and other areas.

3.1.5 Zoos shall regulate the number of animals of various species in their collection in such a way that each animal serves the objectives of the zoo. For achieving this objective, a detailed management plan of every species in the zoo shall be prepared.

3.1.6 Every zoo shall endeavor to avoid keeping single animals of non-viable sex ratios of any species. They shall cooperate in pooling such animals into genetically, demographically and socially viable groups at zoos identified for the purpose.

3.1.7 Zoos shall avoid keeping surplus animals of prolifically breeding species and if required, appropriate population control measures shall be adopted.

Acquisition of Animals

3.2.1 Except for obtaining founder animals for approved breeding programme and infusion of new blood into inbred groups, no zoo shall collect animals from the wild.

3.2.2 Zoos shall not enter into any transaction involving violation of the law and provisions of international conventions on wildlife conservation.

3.2.3 Zoos shall not enter into any transaction in respect of their surplus animals with any commercial establishment. Even the animal products should not be utilised for commercial purposes. The trophies of the animals could, however, be used for educational or scientific purposes.

Animal Housing

3.3.1 Every animal in a zoo shall be provided housing, upkeep and health care that can ensure a quality of life and longevity to enable the zoo population sustain itself through procreation.

3.3.2 The enclosure for all the species displayed or kept in a zoo shall be of such size that all animals get adequate space for free movement and exercise and no animal is unduly dominated or harassed by any other animal.

3.3.3 Each animal enclosure in a zoo shall have appropriate shelters, perches, withdrawal areas, wallow, pools drinking water points and such other facilities which can provide the animals a chance to display the wide range of their natural behaviour as well as protect them from extremes of climate.

Upkeep of Animal Collections

3.4.1 Zoos shall provide diet to each species, which is similar to its feed in nature. Where for unavoidable reasons any ingredients have to be substituted, due care will be taken to ensure that the substitute fulfills the nutritional requirement of the species.

3.4.2 For the well being of the animals, round the clock supply of potable drinking water shall be made available to all animals kept in the zoo.

3.4.3 With the objectives of avoiding human imprinting and domestication of animals zoos shall prevent physical handling of animals by the staff to the extent possible.

3.4.4 Zoos shall not allow any animal to be provoked or tortured for the purpose of extracting any performance or tricks for the benefit of the visitors or for any other reason.

Health Care

3.5.1 Zoos shall ensure availability of the highest standards of veterinary care to all the animals in their collection.

3.5.2 Adequate measures shall be taken by every zoo for implementing wildlife health and quarantine rules and regulations. Appropriate vaccination programmes shall also be taken up for safeguarding against infectious diseases. Timely action to isolate infected animals from the zoo population shall be taken to avoid further spread of disease.

Research And Training

3.6.1 The zoos shall encourage research on the biology, behaviour, nutrition and veterinary aspects of animals in their collection. They shall also endeavor for creation of expertise on zoo architecture and landscape designing, cooperation of recognised institutions already working in relevant fields in this regard shall be taken.

3.6.2 Zoos shall endeavor for transfer of technical skills available in the field for zoo personnel. The Central Government, Central Zoo Authority and State Government shall provide due support to zoos in these efforts. Assistance of Wildlife Institute of India (WII), India Veterinary Research Institute (IVRI) and other institutions within India and abroad, having appropriate expertise shall be taken in this regard.

3.6.3 Zoos shall also endeavour for dissemination of information on scientific aspects of management through publication of periodicals, journals, newsletters and special bulletins. Help of non-governmental organisations (NGOs) and government institutions shall also be availed in such efforts. The Central Zoo Authority shall provide technical and financial support to the Indian Zoos Directors Association (IZDA) and other institutions in this regard.

Breeding programme for species

3.7.1 Before taking up breeding programmes of any species, zoos shall clearly identify the objectives for which the breeding programme is being taken up. The targeted numbers for the programme would be decided keeping in view the identified objectives.

3.7.2 All zoos shall cooperate in successful implementation of identified breeding programmes by way of loaning, pooling or exchanging animals for the programme and help creation of socially, genetically and demographically viable groups even at the cost of reducing the number of animals or number of species displayed in individual zoos.

3.7.3 Breeding programme shall be taken up by zoos after collection of adequate data like biology, behaviour and other demographic factors affecting the programme including the minimum number of founder animals and the quantum of housing facilities available.

3.7.4 Programmes for breeding of zoo animals for re-introduction in the wild shall be taken up after getting approval of the State Government, the Central Zoo Authority and the Central Government as the case may be.

3.7.5 Zoos shall give priority in their breeding programmes to endangered species representing the zoo-geographic zones in which they are located.

3.7.6 For carrying out breeding programmes in a scientific and planned manner the zoo shall mark every individual animal involved in the programme in an appropriate manner and maintain appropriate records.

3.7.7 Zoos shall take utmost precaution to prevent inbreeding. They shall avoid artificial selection of traits and make no explicit or implicit attempts to interbreed various genera, species and sub-species.

3.7.8 Special efforts shall be made to avoid human imprinting of the stocks raised for reintroduction purposes by providing off exhibit breeding facilities.

Education and Outreach Activity

3.8.1 Each zoo should have a well drawn-up plan for educating the visitors as well as others in the community. Zoos shall keep a close liaison with other ex-situ facilities in this regard.

3.8.2 The central theme of the zoo education programme being the linkage between the survival of various species and protection of their natural habitat, enclosures which allow the animals to display natural behaviour are crucial to zoo education. Zoo shall, therefore, display animals in such enclosures only where the animals do not suffer physiological and psychological restraint.

3.8.3 Attractive and effective signage methods and interactive displays to explain activities of various species to visitors, published education material and audio-visual devices are proven methods for driving home the conservation's message. A formal education programme should also be pursued for strengthening the education message.

3.8.4 Beside signage, the zoos shall also use guided tours, talks by knowledgeable persons and audio-visual shows for effectively communicating the message of conservation to the visitors.

3.8.5 The help of universities, colleges and non-governmental organisation shall be taken to educate the students about the benefits of supporting nature conservation programmes.

Extension Activities

3.9.1 To provide the urban population with a window to nature and to serve as green lungs for the polluting environment, zoos shall extend their expertise and help to State Governments and local authorities to create nature parks extending over extensive areas near big cities.

Amenities to Visitors

3.10.1 Zoo shall provide basic civic amenities to the visitors like toilets, drinking water points, shelters and first-aid facilities. Ramps shall also be provided for the benefit of visitors in wheel chairs for approach to animal enclosure and other civic amenities.

3.10.2 Zoos shall not provide any infrastructure for recreation/entertainment of visitors that is inconsistent with the stated objective of zoos.

* * * * *

2

RELEVANT SECTIONS APPLICABLE TO ZOOS
UNDER

**THE WILDLIFE
(PROTECTION) ACT, 1972**

With

**THE WILDLIFE (PROTECTION)
AMENDMENT ACT, 2006**

CHAPTER - I

Preliminary

1. Short title, extent, and commencement, -

- (1) This Act may be called the Wild Life (Protection) Act, 1972
- (2) It extends to the whole of India except the State of Jammu and Kashmir.
- (3) It shall come into force in a State or Union Territory to which it extends, [***] on such date as the central Government may, by notification, appoint, and different dates may be appointed for different provision of this act or for different States and Union Territories.

2. [Definitions - An Act to provide for the protection of wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto with a view to ensuring the ecological and environmental security of the country.]

[(1) ***“animal” includes mammals, birds, reptiles, amphibians, fish, other chordates and invertebrates and also includes their young and eggs;***]

(2) ***“animal article” means an article made from any captive animal or wild animal, other than vermin, and includes an article or object in which the whole or any part of such animal [has been used and ivory imported into India and an article made therefrom].***

(3) [Omitted 1991.]

[(4) **“Board” means a State Board for Wild Life constituted under sub-section (1) of section 6;**]

(5) ***“captive animal” means any animal, specified in Schedule I, Schedule II, Schedule III or Schedule IV, which is captured or kept or bred in captivity;***

(6) [Omitted 1991.]

(7) **“Chief Wildlife Warden” means the person appointed as such under C1. (a) of sub-section (1) of Sec.4;**

[(7A) **“Circus” means an establishment, whether stationary or mobile where animals are kept or used wholly or mainly for the purpose of performing tricks or manoeuvres;**]

- [(8) [Omitted 2002.]]
- [(9) “Collector” means the chief officer- in-charge of the revenue administration of a district or any other officer not below the rank of a Deputy Collector as may be appointed by the State Government under section 18B in this behalf;]
- (10) “commencement of this Act”, in relation to -
- (a) a State, means commencement of this Act in the State.
 - (b) any provision of this Act, means commencement of that provision in the concerned State;
- [(11) ***“dealer” in relation to any captive animal, animal article, trophy, uncured trophy, meat or specified plant, means a person, who carries on the business of buying or selling any such animal or article, and includes a person who undertakes business in any single transaction;]***
- (12) “Director” means the person appointed as Director of Wildlife Preservation under
- C1 (a). of sub-section (1) of Sec. 3;
- [(12A) “Forest Officer” means the Forest officer appointed under clause (2) of Sec. 2 of the Indian Forest Act, 1927 (16 of 1927) or under any other act for the time being in force in a State;]
- [(12B) “forest produce” shall have the same meaning as in sub-clause (b) of clause (4) of Sec. 2 of the Indian Forest Act, 1927 (16 of 1927);]
- (13) [Omitted 1991.]
- (14) ***“Government property” means property referred to in Sec.39; [or Sec.17H]***
- (15) ***“habitat” includes land, water, or vegetation which is the natural home of any wild animal;***
- (16) ***“hunting”, with its grammatical variations and cognate expressions, includes,-***

- [(a) killing or poisoning of any wild animal or captive animal and every attempt to do so;]**
- [(b) capturing, coursing, snaring, trapping, driving or baiting any wild or captive animal and every attempt to do so;]**
- (c) injuring or destroying or taking any part of the body of any such animal, or in the case of wild birds or reptiles, damaging the eggs of such birds or reptiles, or disturbing the eggs or nests of such birds or reptiles;**
- (17) “land” includes canals, creeks, and other water channels, reservoirs, rivers, streams and lakes, whether artificial or natural, [marshes and wetlands and also includes boulders and rocks;]
- (18) “licence” means a licence granted under this Act;
- [(18A) “livestock” means farm animals and includes buffaloes, bulls, bullocks, camels, cows, donkeys, goats, sheep, horses, mules, yaks, pigs, ducks, geese, poultry and their young but does not include any animal specified in Schedule I to V;]
- [(19) “manufacturer” means a person who manufactures articles from any animal or plant specified in Schedule I to V and VI, as the case may be;]
- [(20) “meat” includes blood, bones, sinew, eggs, shell or carapace, fat and flesh with or without skin, whether raw or cooked, of any wild animal or captive animal, other than a vermin;]
- [(21) **“National Board” means the National Board for Wild Life Constituted under Sec.5A;]**
- (22) **“notification” means a notification published in the official Gazette;**
- (23) “permit” means a permit granted under this Act or any rule made thereunder;
- (24) “person” includes a firm;
- [(24A) **“protected area” means a national Park, a sanctuary, a conservation reserve or a community reserve notified under sections 18, 35, 36A and 36C of the Act;]**

- (25) “prescribed” means prescribed by rules made under this Act;
- [(25A) **“recognized zoo” means a zoo recognized under Sec. 38H;**]
- [(25B) “reserve forest” means the forest declare to be reserved by the State Government under Sec. 20 of the Indian Forest Act, 1927, (16 of 1927) or declared as such under any other State Act;]
- [(26) “sanctuary” means an area declared as a sanctuary by notification under the provisions of Chapter IV of this Act and shall also include a deemed sanctuary under sub-section (4) of Sec. 66;]
- [(27) “specified plant” means any plant specified in Schedule VI;]
- [(28) [Omitted 2002.]]
- (29) **“State Government”, in relation to a Union Territory, means the Administrator of that union Territory appointed by the President under Art 239 of the Constitutions;**
- [(30) **“taxidermy”, with its grammatical variations and cognate expressions, means the curing, preparation or preservation or mounting of trophies;**]
- [(30A) “territorial waters” shall have the same meaning as in Sec.3. of Territorial waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act, 1976 (80 of 1976);]
- (31) **“trophy” means the whole or any part of any captive animal or wild animal, other than vermin, which has been kept or preserved by any means, whether artificial or natural, and includes,**
- (a) **rugs, skins, and specimens of such animals mounted in whole or in part through a process of taxidermy, and**
- [(b) **antler, bone, carapace, shell, horn, rhinoceros horn, hair, feather, nail, tooth, tusk, musk, eggs, nests and honeycomb;**]

- (32) ***“uncured trophy” means the whole or any part of any captive animal, other than vermin, which has not undergone a process of taxidermy, and includes a [freshly killed wild animal ambergris, musk and other animal products];***
- (33) “vehicle” means any conveyance used for movement on land, water or air, and includes buffalo, bull, bullock, camel, donkey, elephant, house and mules;
- (34) ***“vermin” means any wild animal specified in Sch.V;***
- (35) “weapon” includes ammunition, bows and arrows, explosives, firearms, hooks, knives, nets, poison, snares, traps, and any instrument or apparatus capable of anaesthetizing, decoying, destroying, injuring or killing an animal;
- [(36) ***“wild animal” means any animal specified in Schedules I and IV and found wild in nature;]***
- [(37) ***“wild life” includes any animal, aquatic or land vegetation which forms part of any habitat;]***
- (38) “Wildlife Warden” means the person appointed as such under C1. (b) of sub-section (1) of Sec.4;
- [(39) ***“zoo” means an establishment, whether stationary or mobile, where captive animals are kept for exhibition to the public and includes a circus and rescue centers but does not include an establishment of a licenced dealer in captive animals;]***

* * * * *

CHAPTER II

Authorities to be appointed or constituted under this Act

3. **Appointment of Director and other officers.** - (1) The Central Government may, for the purpose of this Act appoint -
- (a) a Director of Wildlife Preservation;
 - [(b) [Omitted 2002.]]
 - (c) such other officers and employees as may be necessary.
- (2) In the performance of his duties and exercise of his powers by or under this Act, the Director shall be subject to such general or special directions, as the Central Government may, from time to time, give.
- [(3) The Officers and other employees appointed under this section shall be required to assist the Director.]
4. **Appointment of Chief Wildlife Warden and other officers.** - (1) The State Government may, for the purpose of this Act, appoint -
- (a) Chief Wildlife Warden;[***]
 - (b) Wildlife Wardens;
 - [(bb) Honorary Wild Life Wardens;]
 - (c) such other officers and employees as may be necessary.
- (2) In the performance of his duties and exercise of his powers by or under this Act, the Chief Wildlife Warden shall be subject to such general or special directions, as the State Government may, from time to time, give.
- (3) [The Wildlife Warden, the Honorary Wildlife Warden] and other officers and employees appointed under this section shall be subordinate to the Chief Wildlife Warden.
5. **Power to delegate** - (1) The Director may, with the previous approval of the Central Government, by order in writing, delegate all or any of his powers and duties under this Act to any officer subordinate to him subject to such conditions, if any, as may be specified in the order.
- (2) The Chief Wildlife Warden may, with the previous approval of the State Government, by order in writing, delegate all or any of his

powers and duties under this Act, except those under Clause (a) of sub-section (1) of Sec.11, to any officer subordinate to him subject to such conditions, if any, as may, be specified in the order.

- (3) Subject to any general or special direction given or condition imposed by the Director or the Chief Wildlife Warden, any person, authorised by the Director or the Chief Wildlife Warden to exercise any powers, may exercise those powers in the same manner and to the same effect as if they had been conferred on that person directly by this Act and not by way of delegation.

[5A. Constitution of the National Board for Wild Life.- (1) The Central Government shall, within three months from the date of commencement of the Wild Life (Protection) Amendment Act, 2002, constitute the National Board for Wild Life consisting of the following members, namely: -

- (a) the Prime Minister as Chairperson;
- (b) the Minister in-charge of Forests and Wild Life as Vice-Chairperson;
- (c) three members of Parliament of whom two shall be from the House of the People and one from the Council of States;
- (d) Member, Planning Commission in-charge of Forests and Wild Life;
- (e) five persons to represent non-governmental organizations to be nominated by Central Government;
- (f) ten persons to be nominated by the Central Government from amongst eminent conservationists, ecologists and environmentalists;
- (g) the Secretary to the Government of India in-charge of the Ministry or Department of the Central government dealing with Forests and Wild Life;
- (h) the Chief of the Army Staff;
- (i) the Secretary to the Government of India in-charge of the Ministry of Defence;
- (j) the Secretary to the Government of India in-charge of the Ministry of Information and Broadcasting;

- (k) the Secretary to the Government of India in-charge of the Department of Expenditure, Ministry of Finance;
 - (l) the Secretary to the Government of India, Ministry of Tribal Welfare;
 - (m) the Director-General of Forests in the Ministry or Department of the Central Government dealing with Forests and Wild Life;
 - (n) the Director-General of Tourism, Government of India;
 - (o) the Director-General, Indian Council for Forestry Research and Education, Dehradun;
 - (p) the Director, Wild Life Institute of India, Dehradun;
 - (q) the Director, Zoological Survey of India;
 - (r) the Director, Botanical Survey of India;
 - (s) the Director, Indian Veterinary Research Institute;
 - (t) the Member-Secretary, Central Zoo Authority;
 - (u) the Director, National Institute of Oceanography;
 - (v) one representative each from ten States and Union Territories by rotation, to be nominated by the Central Government;
 - (w) the Director of Wild life Preservation who shall be the Member-Secretary of the National Board.
- (2) The term of office of the members other than those who are members ex officio, the manner of filling vacancies referred to in clauses (e), (f) and (v) of sub-section (1), and the procedure to be followed in the discharge of their functions by the members of the National Board shall be such, as may be prescribed.
- (3) The members (except members ex officio) shall be entitled to receive such allowances in respect of expenses incurred in the performance of their duties as may be prescribed.
- (4) Notwithstanding anything contained in any other law for the time being in force, the office of a member of the National Board shall not be deemed to be an office of profit.]

[5B. Standing Committee of the National Board. - (1) The National Board may, in its discretion, constitute a Standing Committee

for the purpose of exercising such powers and performing such duties as may be delegated to the Committee by the National Board.

- (2) The Standing Committee shall consist of the Vice-Chairperson, the Member- Secretary, and not more than ten members to be nominated by the Vice-Chairperson from amongst the members of the National Board.
- (3) The National Board may constitute committees, sub-committees or study groups, as may be necessary, from time to time in proper discharge of the functions assigned to it.]

[5C. Functions of the National Board.- (1) It shall be the duty of the National Board to promote the conservation and development of wild life and forests by such measures as it thinks fit.

- (2) Without prejudice to the generality of the foregoing provision, the measures referred to therein may provide for -
 - (a) framing policies and advising the Central Government and the State Governments on the ways and means of promoting wild life conservation and effectively controlling poaching and illegal trade of wild life and its products;
 - (b) making recommendations on the setting up of and management of national parks, sanctuaries and other protected areas and on matters relating to restriction of activities in those areas;
 - (c) carrying out or causing to be carried out impact assessment of various projects and activities on wild life or its habitat;
 - (d) reviewing from time to time, the progress in the field of wild life conservation in the country and suggesting measures for improvement thereto; and
 - (e) preparing and publishing a status report at least once in two years on wild life in the country.]

[6. Constitution of State Board for Wild Life. - (1) The State Government shall, within a period of six months from the date of commencement of the Wild Life (Protection) Amendment Act, 2002 constitute a State board for Wild Life consisting of the following members, namely: -

- (a) the Chief Minister of the State and in case of the Union Territory, either Chief Minister or Administrator, as the case may be - Chairperson;

- (b) the Minister in-charge of Forests and Wild Life- Vice-Chairperson;
- (c) three members of the State Legislature or in the case of an Union Territory with Legislature, two members of the Legislative Assembly of that Union Territory;
- (d) three persons to represent non-government organizations dealing with wild life to be nominated by the State Government;
- (e) ten persons to be nominated by the State Government from amongst eminent conservationists, ecologists and environmentalists including at least two representative of the Scheduled Tribes;
- (f) the Secretary to the State Government or the Government of the Union Territory, as the case may be, in-charge of Forests and Wild Life;
- (g) the Officer in-charge of the State Forest Department;
- (h) the Secretary to the State Government, Department of Tribal Welfare;
- (i) the Managing Director, State Tourism Development Corporation;
- (j) an officer of the State Police Department not below the rank of Inspector General;
- (k) a representative of the Armed Force not below the rank of a Brigadier to be nominated by the Central Government;
- (l) the Director, Department of Animal Husbandry of the State;
- (m) the Director, Department of Fisheries of the state;
- (n) an officer to be nominated by the Director, Wild Life Preservation;
- (o) a representative of the Wild Life Institute of India, Dehradun;
- (p) a representative of the Botanical Survey of India;
- (q) a representative of the Zoological Survey of India;
- (r) the Chief wild Life Warden, who shall be the Member-Secretary.]

- [(2) The term of the office of the members other than those who are members exofficio and the manner of filling vacancies referred to in clauses (d) and (e) of sub-section (1) and procedure to be followed shall be such, as may be prescribed.]
 - [(3) The member (except members ex officio) shall be entitled to receive such allowances in respect of expenses incurred in the performance of their duties as may be prescribed.]
7. **Procedure to be followed by the Board.**- (1) The Board shall meet at least twice a year at such place as the State Government may direct.
- (2) The Board shall regulate its own procedure (including the quorum).
 - (3) No act or proceeding of the Board shall be invalid merely by reason of the existence of any vacancy therein or any defect in the constitution thereof or any irregularity in the procedure of the Board affecting the merits of the case.
8. **Duties of the State Board for Wildlife** - [(1) It shall be the duty of the State Board for Wild Life to advise the State Government, -
- [(a) in the selection and management of areas to be declared as protected areas;]
 - [(b) in formulation of the policy of protection and conservation of Wildlife and specified plants;]
 - (c) in any matter relating to any schedule;
 - [(cc) in relation to the measures to be taken for harmonizing the needs of the tribals and other dwellers of the forest with the protection and conservation of wildlife; and]
 - (d) in any other matter connected with the protection of wildlife which may be referred to it by the State Government.

* * * * *

CHAPTER III

Hunting of Wild Animals

- [9. **Prohibition of Hunting.** - No person shall hunt any wild animal specified in Schedule, I, II, III and IV except as provided under Sec.11 and Sec.12.]

Comments

(i) Section 9 of the Act says that no person shall "hunt" any wild animal specified in Schedule I, Elephant is included in Schedule I, *State of Bihar vs Murad Ali Baig* AIR 1989 SC 1.

(ii) The business of breeding of birds in captivity by procuring them by trapping is prohibited; *Chief Forest Conservator (Wild Life) v. Nisar Khan*, (2003) 4 SCC 595.

10. [Omitted 1991.]

11. **Hunting of Wild animals to be permitted in certain cases. - (1)** *Notwithstanding anything contained in any other law for the time being in force and subject to the provisions of Chapter IV -*

(a) *the Chief Wildlife Warden may, if he is satisfied that any wild animal specified in Sch.1 has become dangerous to human life or is so disabled or diseased as to be beyond recovery, by order in writing and stating the reasons therefore, permit any person to hunt such animal or cause animal to be hunted; [Provided that no wild animal shall be ordered to be killed unless the Chief Wildlife Warden is satisfied that such animal cannot be captured, tranquillised or translocated:*

Provide further that no such captured animal shall be kept in captivity unless the Chief Wildlife Warden is satisfied that such animal cannot be rehabilitated in the wild and the reasons for the same are recorded in writing.

Explanation. - For the purposes of clause (a), the process of capture or translocation, as the case may be, of such animal shall be made in such manner as to cause minimum trauma to the said animal.]

(b) the Chief Wildlife Warden or the authorised officer may, if he is satisfied that any wild animal specified in Sch.II, Sch.III or **Sch.IV** *has become dangerous to human life or to property (including standing crops or any land) or is so disabled or diseased as*

to be beyond recovery, by order in writing and stating the reasons therefore, permit any person to hunt [such animal or group of animals in a specified area or cause such animal or group of animals in that specified area to be hunted.]

- (2) **The Killing or wounding in good faith of any wild animal in defence of oneself or any other person shall not be an offence; Provided that nothing in the sub -section shall exonerate any person who, when such defence becomes necessary, was committing any act in contravention of any provision of this Act or nay rule or order made there under.**
- (3) **Any wild animal killed or wounded in defence of any person shall be Government property.**
12. **Grant of permit for special purposes. - Notwithstanding anything contained elsewhere in this Act, it shall be lawful for the Chief Wildlife Warden, to grant [***] a permit, by an order in writing stating the reasons therefore, to any person, on payment of such fee as may be prescribed, which shall entitle the holder of such permit to hunt, subject to such conditions as may be specified therein, any wild animal specified in such permit, for the purpose of, -**
- (a) **education;**
- [(b) **scientific research;**
- (bb) **scientific management;**
- Explanation:- for the purpose of Cl. (bb), the expression, “scientific management” means -**
- (i) **translocation of any wild animal to an alternative suitable habitat; or**
- (ii) **population management of wildlife, without killing or poisoning or destroying any wild animals].**
- [(c) **Collection of specimens -**
- (i) **for recognised zoos subject to the permission under Sec. 38-I or**
- (ii) **for museums and similar institutions;**
- (d) **derivation, collection or preparation of snake- venom for the manufacture of life saving drugs.]**

[Provided that no such permit shall be granted:

- (a) in respect of any wild animal specified in Sch. I, except with the previous permission of the Central Government, and***
- (b) in respect of any other wild animal, except with the previous permission of the State Government.]***

- 13. [Omitted 1991.]
- 14. [Omitted 1991.]
- 15. [Omitted 1991.]
- 16. [Omitted 1991.]
- 17. [Omitted 1991.]

[CHAPTER III A] PROTECTION OF SPECIFIED PLANTS

- 17A. **Prohibition of picking, uprooting, etc., of specified plants.**
- 17B. **Grants of permit for special purposes.-**
- 17C. **Cultivation of specified plants without licence prohibited. -**
- 17D. **Dealing in specified plants without licence prohibited.-**
- 17E. **Declaration of stock. -**
- 17F. **Possession, etc., of plants by licensee. -**
- 17G. **Purchase, etc., of specified plants. -**
- 17H. **Plants to be Government property.-**

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CHAPTER - IV
[PROTECTED AREAS]
Sanctuaries

- 18. **Declaration of Sanctuary.** -
- [18A. **Protection to sanctuaries.**-
- [18B. **Appointment of Collectors.**-
- 19. **Collector to determine rights.**-
- 20. **Bar of accrual of rights.**-
- 21. **Proclamation by Collector.**
- 22. **Inquiry by Collector.**-
- 23. **Powers of Collector.**-
- 24. **Acquisition of rights.**-
- 25. **Acquisition proceedings.**-
- [25A. **Time limit for completion of acquisition proceedings.**-
- 26. **Delegation of Collector's powers.**-
- [(26A) **Declaration of area as Sanctuary.** -
- 27. **Restriction on entry in sanctuary.**-
- 28. **Grant of permit.** -
- [29. **Destruction, etc., in a sanctuary prohibited without a permit.**-
- 30. **Causing fire prohibited.**-
- 31. **Prohibition of entry into sanctuary with weapon.** -
- 32. **Ban on use of injurious substances.**-
- 33. **Control of sanctuaries.**-
- 33A. Immunisation of Live Stock**
- 33B. Advisory Committee**

34. Registration of certain persons in possession of arms. -

34A. Power to remove encroachment

National Parks

35. Declaration of National Parks.-

[(5) No alteration of the boundaries of a National Park by the State Government shall be made except on a recommendation of the National Board.]

[(6) No person shall destroy, exploit or remove any Wildlife including forest produce from a National Park or destroy or damage or divert the habitat of any wild animal by any act whatsoever or divert, stop or enhance the flow of water into or outside the National Park, except under and in accordance with a permit granted by the Chief Wildlife Warden, and no such permit shall be granted unless the State Government being satisfied in consultation with the National Board that such removal of wild life from the National Park or the change in the flow of water into or outside the National Park is necessary for the improvement and better management of wild life therein, authorises the issue of such permit:

Provided that where the forest produce is removed from a National Park, the same may be used for meeting the personal bona fide needs of the people living in and around the National Park and shall not be used for any commercial purpose.]

36. [Omitted 1991.]

[36A. **Declaration and management of a conservation reserve.- ...**

[36B. **Conservation reserve management committee.-**

[36C. **Declaration and management of community reserve.-**

[36D. **Community reserve management committee.-**

Closed Area

[37. [Omitted 2002.]

Sanctuaries or National Parks declared by Central Government

38. Power of Central Government to declare areas as Sanctuaries or National Parks,-

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[CHAPTER - IVA]
CENTRAL ZOO AUTHORITY AND
RECOGNITION OF ZOOS

- 38A. Constitution of Central Zoo Authority. -** *(1) The Central Government shall constitute a body to be known as the Central Zoo Authority (hereinafter in this Chapter referred to as the Authority), to exercise the powers conferred on, and to perform the functions assigned to it under this Act.*
- (2) The Authority shall consist of -*
- (a) Chairperson;*
 - (b) Such number of members not exceeding ten; and*
 - (c) Member-Secretary;*
- to be appointed by the Central Government.*
- 38B. Term of office and conditions of service of chairperson and members, etc. -**
- (1) The chairperson and every member [other than the Member-Secretary] shall hold office for such period, not exceeding three years, as may be specified by the Central Government in this behalf.*
 - (2) The chairperson or a member may, by writing under his hand, addressed to the Central Government, resign from the office of the chairperson or, as the case may be, of the Member.*
 - (3) The Central Government shall remove a person from the office of chairperson or member referred to in sub -section (2) if that person, -*
 - (a) becomes an undischarged insolvent;*
 - (b) gets convicted and sentenced to imprisonment for an offence which, in the opinion of the Central Government, involves moral turpitude;*
 - (c) becomes of unsound mind and stands so declared by a competent court;*
 - (d) refuses to act or becomes incapable of acting;*

- (e) is, without obtaining leave or absence from the authority, absent from three consecutive meetings of the Authority; or**
- (f) in the opinion of the Central Government has so abused the position of chairperson or member as to render that person's continuance in office detrimental to the public interest:**

Provided that no person shall be removed under this clause unless that person has been given a reasonable opportunity of being heard in the matter.

- (4) A vacancy caused under sub-section (2) or otherwise shall be filled by fresh appointment.**
- (5) The salaries and allowances and other conditions of appointment of chairperson, members and Member-Secretary of the Authority shall be such as may be prescribed.**
- (6) The Authority shall, with the previous sanction of Central Government, employ such officers and other employees as it deems necessary to carry out the purposes of the Authority.**
- (7) The terms and conditions of service of the officers and other employees of the Authority shall be such as may be prescribed.**
- (8) No act or proceeding of the Authority shall be questioned or shall be invalid on the ground merely of the existence of any vacancies or defect in the constitution of the Authority.**

38C. Functions of the Authority. - The Authority shall perform the following functions, namely:

- (a) specify the minimum standards for housing, upkeep and veterinary care of the animals kept in a zoo;**
- (b) evaluate and assess the functioning of zoos with respect to the standards or the norms as may be prescribed;**
- (c) recognise or derecognise zoos;**
- (d) identify endangered species of wild animals for purposes of captive breeding and assigning responsibility in this regard to a zoo;**
- (e) co-ordinate the acquisition, exchange and loaning of**

animals for breeding purposes;

- (f) ensure maintenance of stud-books of endangered species of wild animals bred in captivity;*
- (g) identify priorities and themes with regard to display of captive animals in a zoo;*
- (h) co-ordinate training of zoo personnel in India and outside India;*
- (i) co-ordinate research in captive breeding and educational programmes for the purposes of zoos;*
- (j) provide technical and other assistance to zoos for their proper management and development on scientific lines;*
- (k) perform such other functions as may be necessary to carry out the purposes of this Act with regard to zoos.*

38D. Procedure to be regulated by the Authority. - (1) The Authority shall meet as and when necessary and shall meet at such time and place as the chairperson may think fit.

(2) The Authority shall regulate its own procedure.

(3) All orders and decisions of the Authority shall be authenticated by the Member- Secretary or any other officer of the Authority duly authorised by the Member-Secretary in this behalf.

38E. Grants and loans to Authority and constitution of fund.- (1) The Central Government may, after due appropriation made by Parliament by law in this behalf, make to the Authority grants and loans of such sums of money as that Government may consider necessary.

(2) There shall be constituted a Fund to be called the Central Zoo Authority Fund and there shall be credited there to any grants and loans made to the Authority by the Central Government, all fees and charges received by the Authority under this act and all sums received by the Authority from such other sources as may be decided upon by the Central Government.

(3) The Fund referred to in sub-section (2) shall be applied for meeting salary, allowances and other remuneration of the

members, officers and other employees of the Authority and the expenses of the Authority in the discharge of its functions under this chapter and expenses on objects and for purposes authorised by this Act.

- (4) The Authority shall maintain proper accounts and other relevant records and prepare the annual statement of accounts in such form as may be prescribed by the Central Government in consultation with the Comptroller and Auditor General of India.**
 - (5) The accounts of the Authority shall be audited by the Comptroller and Auditor-General at such intervals as may be specified by him and any expenditure incurred in connection with such audit shall be payable by the Authority to the Comptroller and Auditor-General.**
 - (6) The Comptroller and Auditor-General and any person appointed by him in connection with the audit of the accounts of the Authority under this Act shall have the same rights and privileges and the authority in connection with such audit as the Comptroller and Auditor-General generally has in connection with the audit of the government accounts and , in particular, shall have the right to demand the production of books, accounts, connected vouchers and other documents and papers and to inspect any of the offices of the Authority.**
 - (7) The accounts of the Authority as certified by the Comptroller and Auditor-General or any other person appointed by him in this behalf, together with the audit report thereon, shall be forwarded annually to the Central Government by the Authority.**
- 38F. Annual report. - The Authority shall prepare in such form and at such time, for each financial year, as may be prescribed, its annual report, giving a full account of its activities during the previous financial year and forward a copy thereof to the Central Government.**
- 38G. Annual report and audit report to be laid before Parliament.- The Central Government shall cause the annual report together with a memorandum of action taken on the recommendations contained therein, in so far as they relate to the Central**

Government, and the reasons for the non-acceptance, if any, of any of such recommendations and the audit report to be laid as soon as may be after the reports are received before each House of parliament.

38H. Recognition of Zoos. - (1) No zoo shall be operated without being recognised by the Authority. Provided that a zoo being operated immediately before the date of commencement of the Wild Life (Protection) (Amendment) Act, 1991 may continue to operate without being recognised for a period of [eighteen months from the date of such commencement] and if the application seeking recognition is made within that period, the zoo may continue to be operated until the said application is finally decided or withdrawn and in case of refusal for a further period of six months from the date of such refusal.

[(1A) On and after the commencement of the Wild Life (Protection) Amendment Act, 2002 a zoo shall not be established without obtaining the prior approval of the Authority.]

- (2) Every application for recognition of a zoo shall be made to the Authority in such form and on payment of such fee as may be prescribed.**
- (3) Every recognition shall specify the conditions, if any, subject to which the applicant shall operate the zoo.**
- (4) No recognition to a zoo shall be granted unless the Authority, having due regard to the interests of protection and conservation of wild life, and such standards, norms and other matters as may be prescribed, is satisfied that recognition should be granted.**
- (5) No application for recognition of a zoo shall be rejected unless the applicant has been given a reasonable opportunity of being heard.**
- (6) The Authority may, for reason to be recorded by it, suspend or cancel any recognition granted under sub-section (4):**
Provided that no such suspension or cancellation shall be made except after giving the person operating the zoo a reasonable opportunity of being heard.
- (7) An appeal from an order refusing to recognise a zoo under sub-section (5) or an order suspending or cancelling a**

recognition under sub-section (6) shall lie to the Central Government.

- (8) An appeal under sub-section (7) shall be preferred within thirty days from the date of communication to the applicant, of the order appealed against:**

Provided that the Central Government may admit any appeal preferred after the expiry of the period aforesaid if it is satisfied that the appellant had sufficient cause for not preferring the appeal in time.

- [38I. Acquisition of animals by a zoo. - (1) Subject to the other provisions of this Act, no zoo shall acquire, sell or transfer any wild animal or captive animal specified in Schedules I and II except with the previous permission of the Authority.**
- (2) No zoo shall acquire, sell or transfer any wild or captive animal except from or to a recognised zoo.**
- 38J. Prohibition of teasing, etc., in a zoo. - No person shall tease, molest, injure or feed any animal or cause disturbance to the animals by noise or otherwise, or litter the grounds in a zoo.**

CHAPTER - IV B

National Tiger Conservation Authority

- 38K. Definitions**
- 38L. Constitution of National Tiger Conservation Authority**
- 38M. Term of office and Conditions of service of members**
- 38N. Officers & employees of Tiger Conservation Authority**
- 38O. Powers & Functions of Tiger Conservation Authority**
- 38P. Procedure to be regulated by Tiger Conservation Authority**
- 38Q. Grants & loans to Tiger Conservation Authority & Constitution of Fund**

- 38R. Accounts and audit of Tiger Conservation Authority**
- 38S. Annual Report of Tiger Conservation Authority**
- 38T. Annual Report and Audit Report to be laid before parliament.**
- 38U. Constitution of Steering committee**
- 38V. Tiger Conservation plan**
- 38W. Alteration and de-notification of Tiger Reserves**
- 38X. Establishment of Tiger Conservation Foundation**

CHAPTER - IV C
Tiger and other Endangered Species
Crime Control Bureau

- 38Y. Constitution of Tiger and other Endangered Species Crime Control Bureau**
- 38Z. Powers and functions of the Wildlife Crime Control Bureau**

CHAPTER - V
Trade or Commerce in Wild Animals
Animal Articles and Trophies

39. Wild animals, etc. to be Government property. - (1) Every -

- (a) wild animal, other than vermin, which is hunted under Sec.11 or sub-section (1) of Sec.29 or sub-section (6) of Sec.35 or kept or [bred in captivity or hunted] in contravention of any provisions of this Act or any rule or order made thereunder, or found dead, or killed [***] by mistake; and
- (b) animal article, trophy or uncured trophy or meat derived from any wild animal referred to in Cl. (a) in respect of which any offence against this Act or any rule or order made thereunder has been committed;
- [(c) ivory imported into India and an article made from such ivory in respect of which any offence against this Act or any rule or order made thereunder has been committed;
- (d) vehicle, vessel, weapon, trap or tool that has been used for committing an offence and has been seized under the provision of this Act.]

shall be the property of the State Government and, where such animal is hunted in a sanctuary or National Park declared by the Central Government, such animal or any animal article, trophy, uncured trophy or meat [derived from such animal or any vehicle, vessel, weapon, trap, or tool used in such hunting,] shall be the property of the Central Government.

- (2) Any person who obtains, by any means, the possession of Government property, shall, within forty-eight hours from obtaining such possession, report it to the nearest police station or authorised officer and shall, if so required, handover such property to the officer-in-charge of such police station or such authorised officer as the case may be.
- (3) No person shall, without the previous permission in writing of the Chief Wildlife Warden or the authorised officer, -

- (a) acquire or keep in his possession, custody, or control, or
- (b) transfer to any person, whether by way of gift, sale or otherwise, or
- (c) destroy or damage
such Government property.

40. **Declaration.** - *(1) Every person having at the commencement of this Act the control, custody or possession of any captive animal specified in Sch.I or Part II of Sch. II, [or animal article, trophy or uncured trophy] derived from such animal or salted or dried skins of such animal or the musk of a musk deer or the horn of a rhinoceros, shall, within thirty days from the commencement of this Act, declare to the Chief Wildlife Warden or the authorised officer the number and description of animal, or article of the foregoing description under his control, custody or possession and the place where such animal or article is kept.*

(2) no person shall, after the commencement of this Act, acquire, receive, keep in his control, custody or possession, sell, offer for sale, or otherwise transfer or transport any animal specified in Sch.I or Part II of Sch. II, or any uncured trophy or meat derivative from such animal, or the salted or dried skins of such animal or the musk of a musk deer or the horn of a rhinoceros, except with the previous permission in writing of the Chief Wildlife Warden or the authorised officer.

[(2A) No person other than a person having a certificate of ownership, shall, after the commencement of the Wild Life (Protection) Amendment Act, 2002 acquire, receive, keep in his control, custody or possession any captive animal, animal article, trophy or uncured trophy specified in Sch. I or Part II of Sch. II, except by way of inheritance.]

[(2B) Every person inheriting any captive animal, animal article, trophy or uncured trophy under sub-section (2A) shall, within ninety days of such inheritance make a declaration to the Chief wildlife Warden or the authorised officer and the provisions for Sec.41 and 42 shall apply as if the declaration had been made under sub-section (1) of Sec.40:

Provided that nothing in sub-sections (2A) and (2B) shall apply to the live elephant.]

- [(3) Nothing in sub-section (1) or sub-section (2) shall apply to a recognised zoo subject to the provisions of Sec.38I or to a public museum.]**
- (4) The State Government may, by notification, require any person to declare to the Chief Wildlife warden or the authorised officer [any animal or animal article] or trophy (other than the musk of a musk deer or the horn of rhinoceros), or salted or dried skins derived from an animal specified in Sch. I or Part II of Sch. II in his control, custody or possession in such form, in such manner, and within such time as may be prescribed.
- [40A. Immunity in certain cases.- (1) Notwithstanding anything contained in sub-sections (2) and (4) of Sec.40 of this Act, the Central Government may, by notification, require any person to declare to the Chief Wildlife Warden or the authorised officer, any captive animal, animal article, trophy or uncured trophy derived from animal specified in Sch. I or Part II of Sch. II in his control, custody or possession, in respect of which no declaration had been made under sub-section (1) or sub-section (4) of Sec.40, in such form, in such manner and within such time as may be prescribed.**
- (2) Any action taken or purported to be taken for violation of Sec.40 of this Act at any time before the commencement of the Wild Life (Protection) Amendment Act, 2002 shall not be proceeded with and all pending proceedings shall stand abated.
- (3) Any captive animal, animal article, trophy or uncured trophy declared under sub-section (1), shall be dealt with in such manner and subject to such conditions as may be prescribed.]
41. **Inquiry and preparation of inventories.-** (1) On receipt of a declaration made under Sec. 40, the Chief Wildlife Warden or the authorised officer may, after such notice, in such manner and at such time as may be prescribed, -
- (a) enter upon the premises of a person referred to in Sec. 40;
 - (b) make inquiries and prepare inventories of animal articles, trophies, uncured trophies, salted and dried skins, and captive animals specified in Sch. I and Part II of Sch. II and found thereon; and

- (c) affix upon the animals, animal articles, trophies or uncured trophies, identification marks in such manner as may be prescribed.
 - (2) No person shall obliterate or counterfeit any identification mark referred to in this Chapter.
- 42. **Certificate of ownership.** - The Chief Wildlife Warden may, for the purposes of Sec. 40, issue a certificate of ownership in such form, as may be prescribed, to any person who, in his opinion, is in lawful possession of any wild animal or animal article, trophy, uncured trophy, and may, where possible, mark, in the prescribed manner, such animal article, trophy or uncured trophy for the purposes of identification.

[Provided that before issuing the certificate of ownership in respect of any captive animal, the Chief wildlife Warden shall ensure that the applicant has adequate facilities for housing, maintenance and upkeep of the animal.]
- [43. **Regulation of transfer of animal, etc.** - (1) No person having in his possession captive animal, animal article, trophy or uncured trophy in respect of which he has a certificate of ownership shall transfer by way of sale or offer for sale or by any other mode of consideration of commercial nature, such animal or article or trophy or uncured trophy.
 - (2) Where a person transfers or transports from the State in which he resides to another State or acquires by transfer from outside the State, any such animal, animal article, trophy or uncured trophy in respect of which he has a certificate of ownership, he shall, within thirty days of transfer or transport, report the transfer or transport to the Chief Wildlife Warden or the authorised officer within whose jurisdiction the transfer or transport is effected.
 - (3) Nothing in this section shall apply -
 - (a) to tail feather of peacock and the animal article or trophies made therefrom;
 - (b) to transfer of captive animals between recognised zoos subject to the provisions of Sec. 38I, and transfer amongst zoos and public museums.]
- 44. **Dealings in trophy and animal articles without licence prohibited.**
 - (1) [Subject to the provisions of Chapter VA, no person shall, except under, and in accordance with, a licence granted under sub-section (4),]

- (a) commence or carry on the business as -
 - (i) a manufacturer of, or dealer in, any animal article; or
 - (ia) [Omitted];
 - (ii) a taxidermist; or
 - (iii) a dealer in trophy or uncured trophy; or
 - (iv) a dealer in captive animals; or
 - (v) a dealer in meat; or
- (b) cook or serve meat in any eating-house;
- [(c) derive, collect or prepare, or deal in, snake venom,];

Provided that nothing in this sub-section shall prevent a person, who immediately before the commencement of this Act was carrying on the business or occupation specified in this sub-section, from carrying on such business or occupation for a period of thirty days from such commencement, or where he has made an application within that period for the grant of a licence to him, until the licence is granted to him or he is informed in writing that a licence cannot be granted to him.

[Provided further that nothing in this sub-section shall apply to the dealers in tail feathers of peacock and articles made therefrom and the manufacturers of such articles.]

Explanation.- For the purpose of this section, "eating-house" includes a hotel, restaurant or any other place where any eatable is served on payment, whether or not such payment is separately made for such eatable or is included in the amount charged for boarding and lodging.

- (2) Every manufacturer of, or dealer in animal article, or every dealer in captive animals, trophies or uncured trophies, or every taxidermist shall, within fifteen days from the commencement of this Act, declare to the Chief Wildlife Warden his stocks of animal articles, captive animals, trophies or uncured trophies, as the case may be, as on the date of such declaration and the Chief Wildlife warden or the authorised officer may place an identification mark on every animal article, captive animal trophy or uncured trophy, as the case may be.
- (3)

- (4)
- (5)
- (6)
- (7)
- (8)
- (9)

45. **Suspension or cancellation of licences.** -

46. **Appeal.**-

47. **Maintenance of records.** -

48. **Purchase of animal, etc., by licensee.** -

[48A. **Restriction on transportation of wildlife.**- No person shall accept any wild animal (other than vermin) or any animal article, or any specified plant or part or derivative thereof, for transportation except after exercising due care to ascertain that permission from the Chief Wildlife Warden or any other officer authorised by the State Government in this behalf has been obtained for such transportation.]

49. **Purchase of captive animal, etc. by a person other than a licensee.**
- No person shall purchase, receive or acquire any captive animal, wild animal other than vermin, or any animal article, trophy, uncured trophy, or meat derived therefrom otherwise than from a dealer or from a person authorised to sell or otherwise transfer the same under this Act.

[Provided that nothing in this section shall apply to a recognised zoo subject to the provisions of Sec. 38 I or to a public museum.]

* * * * *

[CHAPTER - VA]

**Prohibition of Trade or Commerce in Trophies,
Animal Articles, etc. derived from certain Animals.**

49A. **Definitions.** -

49B. **Prohibition of dealings in trophies, animal articles, etc. derived from Scheduled animals.**-

49C. **Declaration by dealers.** -

* * * * *

CHAPTER - VI

Prevention and Detection of Offences.

50. **Power of entry, search, arrest and detention.**-

- (1) Notwithstanding anything contained in any other law for the time being in force, the Director or any other authorised by him in this behalf or the Chief Wildlife Warden or the authorised officer or any forest officer or any police officer not below the rank of a sub-inspector may, if he has reasonable grounds for believing that any person has committed an offence against this Act,
 - (a) require any such person to produce for inspection any captive animal, wild animal, animal article, meat, [1trophy, uncured trophy, or any specified plant or part or derivative thereof] in his control, custody or possession, or any licence, permit or any other document granted to him or required to be kept by him under the provisions of this Act;
 - (b) stop any vehicle or vessel in order to conduct search or inquiry or enter upon and search any premises, land, vehicle, or vessel in the occupation of such person, and open and search any baggage or other things in his possession;
 - (c) seize any captive animal, wild animal, animal article, meat, trophy or uncured trophy, or any specified plant or

part or derivative thereof in respect of which an offence against this Act appears to have been committed, in the possession of any person together with any trap, tool, vehicle, vessel, or weapon used for committing any such offence and unless he is satisfied that such person will appear and answer any charge which may be preferred against him arrest him without warrant and detain him.

Provided that where a fisherman, residing within ten kilometres of a sanctuary or National Park, inadvertently enters on a boat not used for commercial fishing, in the territorial waters in that sanctuary or National Park, a fishing tackle or net no such boat shall not be seized.]

- (2) [omitted]
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)
- (9)

51. **Penalties.** - (1) *Any person who [contravenes any provision of this Act [except Chapter VA and Sec. 38J] or any rule or order made thereunder or who commits a breach of any of the conditions of any licence or permit granted under this Act, shall be guilty of an offence against this Act, and shall, on conviction, be punishable with imprisonment for a term which may extend to [three years] or with fine which may extend to [twenty five thousand rupees] or with both.*

[Provided that where the offence committed is in relation to any animal specified in Sch. I or Part II of Sch. II or meat of any such animal or animal article, trophy or uncured trophy derived from such animal or where the offence relates to hunting in a sanctuary or a National Park or altering the boundaries of a sanctuary or a National Park, such offences shall be punishable with imprisonment for a term which shall not be less than three years but may extend to seven years

and also with fine which shall not be less than ten thousand rupees:

Provided further that in case of a second or subsequent offence of the nature mentioned in this sub-section, the term of imprisonment shall not be less than three years but may extend to seven years and also with fine which shall not be less than twenty-five thousand rupees.]

[(1A) Any person who contravenes any provisions of Chapter VA, shall be punishable with imprisonment for a term which shall not be less than [three years] but which may extend to seven years and also with fine which shall not be less than [ten thousand rupees].

[(1B) Any person who contravenes the provisions of Sec. 38J shall be punishable with imprisonment for a term which may extend to six months or with fine which may extend to two thousand rupees, or with both.

Provided that in the case of a second or subsequent offence the term of imprisonment may extend to one year or with fine which may extend to five thousand rupees.]

(1C)

(1D)

(2) When any person is convicted of an offence against this Act, the Court trying the offence may order that any captive animal, wild animal, animal article, trophy, [uncured trophy, meat, ivory imported into India or an article made from such ivory, any specified plant or part or derivative thereof] in respect of which the offence has been committed, any trap, tool, vehicle, vessel, or weapon used in the commission of the said offence be forfeited to the State Government and that any licence or permit, held by such person under the provisions of this Act, be cancelled.

(3) Such cancellation of licence or permit or such forfeiture shall be in addition to any other punishment that may be awarded for such offence.

(4) Where any person is convicted of an offence against this Act, the Court may direct that the licence, if any, granted to such person under the Arms Act, 1959 (54 of 1959) for possession

of any arm with which an offence against this Act has been committed, shall be cancelled, and that such person shall not be eligible for a licence under the Arms Act, 1959, for a period of five years from the date of conviction.

[(5) Nothing contained in Sec. 360 of the Code of Criminal Procedure, 1973 (2 of 1974) or in the Probation of Offenders Act, 1958 (20 of 1958) shall apply to a person convicted of an offence with respect to hunting in a sanctuary or a National Park or of an offence against any provision of Chapter VA unless such person is under eighteen years of age.]

[51A. Certain conditions to apply while granting bail.-

(a)

(b)

52. Attempts and abatement. - Whoever attempts to contravene, or abets the contravention of, any of the provisions of this Act or for any rule of order made thereunder shall be deemed to have contravened that provision or rule or order, as the case may be.

53. Punishment for wrongful seizure.- If any person, exercising powers under this Act, vexatiously and unnecessarily seizes the property of any other person on the pretence of seizing it for the reasons mentioned in Sec. 50, he shall, on conviction, be punishable with imprisonment for a term which may extend to six months, or with fine which may extend to five hundred rupees, or with both.

[54. Power to compound offences. - **(1) The Central Government may, by notification, empower the Director of Wild Life Preservation or any other officer not below the rank of Assistant Director of Wild Life Preservation and in the case of a State Government in the similar manner, empower the Chief Wildlife Warden or any officer of a rank not below the rank of a Deputy Conservator of Forests, to accept from any person against whom a reasonable suspicion exists that he has committed an offence against this Act, payment of a sum of money by way of composition of the offence which such person is suspected to have committed.**

(2) On payment of such sum of money to such officer, the suspected person, if in custody, shall be discharged and no further proceedings in respect of the offence shall be taken against such person.

- (3) *The officer compounding any offence may order the cancellation of any licence or permit granted under this Act to the offender, or if not empowered to do so, may approach an officer so empowered, for the cancellation of such licence or permit.*
- (4) *The sum of money accepted or agreed to be accepted as composition under sub-section (1) shall, in no case, exceed the sum of twenty-five thousand rupees:*

Provided that no offence, for which a minimum period of imprisonment has been prescribed in Sec. 51, shall be compounded.]

[55. **Cognizance of offences.** - No Court shall take cognizance of any offence against this Act except on the complaint of any person other than -

- (a) *the Director of Wild Life Preservation or any other officer authorised in this behalf by the Central Government; or*
- [(aa) *the Member-Secretary, Central Zoo Authority in matters relating to violation of the provisions of Chapter IVA; or]*
- (ab) *Member Secretary, Tiger Conservation Authority; or*
- (ac) *Director of the concerned Tiger Reserve; or*
- (b) *the Chief Wildlife Warden, or any other officer authorised in this behalf by the State Government, [subject to such conditions as may be specified by that Government;] or*
- [(bb) *the officer-in-charge of the zoo in respect of violation of provisions of Sec. 38J; or]*
- (c) *any person who has given notice of not less than sixty days, in the manner prescribed, of the alleged offence and of his intention to make a complaint, to the Central Government or State Government or the officer authorised as aforesaid.]*

56. Operation of other laws not barred. -----

57. Presumption to be made in certain cases. ----

58. Offences by companies. ----

**[CHAPTER - VIA]
[FORFEITURE OF PROPERTY DERIVED FROM ILLEGAL
HUNTING AND TRADE.]**

58A. Application.-

58B. Definitions.-

58C. Prohibition of holding illegally acquired property.-

58D. Competent authority. -

58E. Identifying illegally acquired property.-

58F. Seizure or freezing of illegally acquired property. -

58G. Management of properties seized or forfeited under this Chapter.-

58H. Notice of forfeiture of property

58I. Forfeiture of property in certain cases

58J. Burden of proof

58K. File in lieu of forfeiture

58L. Procedure in relation to certain trust properties

58M. Certain transfers to be null and void

58N. Constitution of appellate tribunal

58O. Appeals

58P. Notice or order not to be invalid for error in description

58Q. Bar of jurisdiction

- 58R. Competent authority and appellate tribunal to have powers of civil court**
- 58S. Information to competent authority**
- 58T. Certain officers to assist administrator, competent authority and appellate tribunal**
- 58U. Power to take possession**
- 58V. Rectification of mistakes**
- 58W. Findings under other laws not conclusive for proceedings under this chapter**
- 58X. Service of notices and orders**
- 58Y. Punishment for acquiring property in relation to which proceedings have been taken under this chapter**

* * * * *

CHAPTER - VII

Miscellaneous

59. **Officers to be public servants.** - *Every officer referred to [in Chapter II and the Chairperson, Members, Member-Secretary, and other officers and employees referred to in Chapter IV A [Chapter IV B]] and every other officer exercising any of the powers conferred by this Act shall be deemed to be a public servant within the meaning of Sec. 21 of the Indian Penal Code 1860, (45 of 1860).*
60. **Protection of action taken in good faith.** - (1) No suit, prosecution, or other legal proceeding shall lie against any officer or other employee of the Central Government or the State Government for anything which is in good faith done or intended to be done under this Act.
- (2) No suit or other legal proceeding shall lie against the Central Government or the State Government or any of its officers or other employees, for any damage caused or likely to be caused by anything which is in good faith done or intended to be done under this Act.
- [(3) No suit or other legal proceeding shall lie against the authority referred to in Chapter IVA [Chapter IVB] and its chairperson, members, member-secretary, officers and other employees for anything which is in good faith done or intended to be done under this Act.]
- [60A. Reward to persons.** - (1) *When a court imposes a sentence of fine or a sentence of which fine forms a part, the court may when passing judgement order that the reward be paid to a person who renders assistance in the detection of the offence or the apprehension of the offenders out of the proceeds of fine not exceeding [fifty percent of such fine].*
- (2) *When a case is compounded under Sec. 54, the officer compounding may order reward to be paid to a person who renders assistance in the detection of the offence or the apprehension of the offenders out of the sum of money accepted by way of composition not exceeding [fifty percent of such money].]*
- [60B. Reward by State Government.-** *The State Government may empower the chief Wild Life Warden to order payment of reward not*

exceeding ten thousand rupees to be paid to a person who renders assistance in the detection of the offence or the apprehension of the offender, from such fund and in such manner as may be prescribed.]

61. **Power to alter entries in schedules.** - (1) The Central Government may, if it is of opinion that it is expedient so to do, by notification, [add or delete any entry to or from any schedule] or transfer any entry from one part of a schedule to another part of the same schedule or from one schedule to another.
- (2) [Omitted 1991.]
- (3) On the issue of a notification under sub-section (1) [***] the relevant schedule shall be deemed to be altered accordingly, provided that every such alteration shall be without prejudice to anything done or omitted to be done before such alteration.
- (4) [Omitted 1991.]
62. **Declaration of certain wild animals to be vermin ...**
63. **Power of Central Government to make rules.-** *[(1) The Central government may, by notification, make rules for all or any of the following matters, namely:*
- (a) *conditions and other matters subject to which a licensee may keep any specified plant in his custody or possession under Sec. 17F; [(ai) the term of office members other than those who are members ex officio, the manner of filling vacancies, the procedure to be followed by the National Board under sub-section (2) and allowances of those members under sub-section (3) of Sec. 5A;]*
- (b) *the salaries and allowances and other conditions of appointment of chairperson, members and member-secretary under sub-section (5) of Sec. 38B;*
- (c) *the terms and conditions of service of the officers and other employees of the central Zoo Authority under sub-section (7) of Sec. 38B;*
- (d) *the form in which the annual accounts statement of the Central Zoo Authority shall be prepared under sub-section (4) of Sec. 38E;*

- (e) ***the form in which and the time at which the annual report of the Central Zoo Authority shall be prepared under Sec. 38F;***
 - (f) ***the form in which and the fee required to be paid with application for recognition of a zoo under sub-section (2) of Sec. 38H;***
 - (g) ***the standards, norms and other matters to be considered for granting recognition under sub-section (4) of Sec. 38H;***
 - (g)(i)
 - (g)(ii)
 - (g)(iii)
 - (g)(iv)
 - (g)(v)
 - (g)(vi)
 - (h) the form in which the declaration shall be made under sub-section (2) of Sec. 44;
 - (i) the matters to be prescribed under clause (b) of sub-section (4) of Sec. 44;
 - (j) the terms and conditions which shall govern transactions referred to in clause (b) of Sec, 48;
 - (k) the manner in which notice may be given by a person under clause (c) of Sec. 55;
 - (l) the matters specified in sub-section (2) of Sec. 64 in so far as they relate to sanctuaries and National Parks declared by the Central Government.]
- (2) ***Every rule made under this section shall be laid, as soon as may be, after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions and if before the expiry of the session immediately following the session or the successive sessions aforesaid, both houses agree in making any modification in the rule or both Houses agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be***

of no effect, as the case may be, so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

64. **Power of State Government to make rules.-** (1) The State Government may, by notification, make rules for carrying out the provisions of this Act in respect of matters which do not fall within the purview of Sec. 63.
- (2) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all or any of the following matters, namely:
- [(a) the term of office of members other than those who are members, ex officio, the manner of filling vacancies and the procedure to be followed by the board under sub-section (2) of Sec. 6;]
 - [(b) allowances referred to in sub-section (3) of Sec. 6;]
 - (c) the forms to be used for any application, certificate, claim, declaration, licence, permit, registration, return, or other document, made granted, or submitted under the provisions of this Act and the fees, if, any therefore;
 - (d) the conditions subject to which any licence or permit may be granted under this Act;
 - [(dd) the conditions subject to which the officers will be authorised to file cases in the court;]
 - (e) the particulars of the record of wild animals (captured or killed) to be kept and submitted by the licensee;
 - [(ee) the manner in which measures for immunization of live-stock shall be taken;]
 - (f) regulation of the possession, transfer, and the sale of captive animals, meat, animal articles, trophies, and uncured trophies;
 - (a) regulation of taxidermy;
 - [(ga) the manner and conditions subject to which the Administrator shall receive and manage the property under sub-section (2) of Sec. 58G;]
 - [(gb) the terms of conditions of service of the Chairman and other members under sub-section (3) of Sec. 58N;]

- [(gc) the fund from which and the manner in which payment of reward under section 60B shall be made;".
- (h) any other matter which has to be, or may be, prescribed under this Act.

65. Rights of Scheduled Tribes to be protected ...

66. Repeal and savings.

(1)

(2)

(3)

(4)

* * * * *

3

**Relevant Portions of the
National Wildlife Action Plan
(2002-2016)**

3. Relevant Portions of the National Wildlife Action Plan (2002-2016)

PREAMBLE

Background

The first National Wildlife Action Plan (NWAP) was adopted in 1983, based upon the decision taken in the XV meeting of the Indian Board for Wildlife held in 1982. The plan had outlined the strategies and action points for wildlife conservation which are still relevant. In the meanwhile, however, some problems have become more acute and new concerns have become apparent, requiring a change in priorities. Increased commercial use of natural resources, continued growth of human and livestock populations and changes in consumption patterns are causing greater demographic impacts. Biodiversity conservation has thus become a focus of interest. The National Forest Policy was also formulated in 1988, giving primacy to conservation. Hence this new National Wildlife Action Plan.

Overview

1. The term Wildlife encompasses all uncultivated flora and undomesticated fauna. Every species has the right to live and every threatened species must be protected to prevent its extinction.
2. Water, wilderness and wildlife are irrevocably interlinked. With mounting agricultural, industrial and demographic pressures, wilderness areas, which are the richest repositories of wildlife and biodiversity have either shrunk or disappeared. Their continued existence is crucial for the long-term survival of the biodiversity and the ecosystems supporting them.
3. Effective ecosystem conservation is the foundation of long-term ecological and economic stability. Natural processes, forests and other wild habitats recharge aquifers, maintain water regimes and moderate the impact of floods, droughts and cyclones. Thereby they ensure food security and regulate climate change. They are also a source of food, fodder, fuel and other products supplementing the sustenance of local communities.
4. India ranks sixth among the 12 mega biodiversity countries of the world. Conservation of biodiversity is directly linked with conservation of ecosystems and thus with water and food security. These together

constitute a major plank of Indian economy.

5. National planning has not taken into account the adverse ecological consequences of shrinkage and degradation of wilderness from the pressures of population and commercialisation. As a result, we have witnessed the alarming erosion of our natural heritage which comprises rivers, aquifers, forests, grasslands, mountains, wetlands, coastal and marine habitats, arid lands and deserts. This has also affected natural phenomena such as breeding, ranging and migration of wildlife and geomorphological features.
6. The increased frequency and intensity of natural disasters, the plummeting fertility of our soils and the accelerated degradation of our fresh water resources have imposed a crippling financial burden on the nation. This underscores the need to realign development priorities to take into account ecological imperatives including the protection of wild species, which sustain and enhance natural habitats, even as they depend on such areas for their survival.
7. Rural development for communities inhabiting forest lands and other wilderness regions suffers both from inadequate resources and inappropriate measures. It has failed to address their strong dependence upon natural biomass resources vis-à-vis the shrinking and degrading resource base. Farm productivity has also declined due to lack of proper support, causing impoverishment and enhanced pressures upon natural areas. Resource impoverished communities have therefore begun to place even greater pressure on the biomass of our forests and has led to widespread alienation of people from the goals of nature conservation efforts.
8. Habitat loss caused by developmental projects such as dams, mines etc. compound the problems of wildlife conservation
9. The constraining impact of habitat loss has been compounded by illegal trade fuelled by a rising demand of wildlife products and their lucrative prices in the international market.

POLICY IMPERATIVES

Ecological Security

To protect the long-term ecological security of India, the national development agenda must recognise the imperative of identifying and protecting natural ecosystems from over-exploitation, contamination and degradation. Short

term economic gains must not be permitted to undermine ecological security.

Priority to Conservation

Assigning conservation a high priority both at the level of central and state governments is an imperative. Its integration in all development programmes, evolving appropriate funding mechanism, enhancement of financial allocations and provision of adequate personnel with requisite expertise has to be ensured, to arrest the ongoing trend of degradation and to restore wildlife and its habitat.

National Land Use Policy:

The NWAP cannot be executed in isolation. Wildlife conservation cannot be restricted to national parks and sanctuaries. Areas outside the protected area network are often vital ecological corridor links and must be protected to prevent isolation of fragments of biodiversity, which will not survive in the long run. Land and water use policies will need to accept the imperative of strictly protecting ecologically fragile habitats and regulating use elsewhere.

Primacy for Water and Sustenance:

Water must be recognised as a prime produce of natural forests. Forests must be managed to optimise and protect hydrological systems. The National Forest Policy of 1988 which emphasises conserving our natural heritage in the form of natural forests, flora and fauna, is in consonance with this imperative. A critical imperative is also to recognise forest, wetlands and other natural habitats as a source of survival for millions of people, in particular as a source of NTFP and aquatic resources.

***In situ* Conservation**

Primacy must be accorded to *in situ* conservation, the sheet anchor of wildlife conservation. *Ex situ* measures in zoological parks and gene banks may supplement this objective, without depleting scarce wild resources.

Peoples' Support for Wildlife

Local communities traditionally depend on natural biomass and they must, therefore, have the first lien on such resources. Such benefits must be subject to assumption of a basic responsibility to protect and conserve these resources by suitably modifying unsustainable activities. Conservation programmes must attempt to reconcile livelihood security with wildlife

protection through creative zonation and by adding new Protected Area (PA) categories in consultation with local communities, such as an inviolate core, conservation buffer, community buffer and multiple use areas.

Man-Animal Conflict

While increasing man-animal conflict is an outcome of shrinkage, fragmentation and deterioration of habitats, it has caused destruction of wildlife and generated animosity against wild animals and protected areas. This is a crucial management issue, which needs to be addressed through innovative approaches.

STRATEGY FOR ACTION

Adopting and implementing strategies and needs outlined above will call for action covering the following parameters:

III Conservation of Wild and Endangered Species and their Habitats.

IX Conservation Awareness and Education

III Conservation of Wild and Endangered Species and their habitats:

Overview and Objectives

The aim of the NWP is to conserve *in situ* all taxa of flora and fauna along with the full range of ecosystems they inhabit. The ecological requirements for the survival of threatened, rare and endangered species, together with their community associations of flora and fauna, must be ensured.

The isolation of animal species due to fragmentation of habitats reduces relict populations to unviable levels, leading to local extinction. For highly endangered species like the Great Indian Bustard, Bengal Florican, Asiatic Lion, Wild Buffalo, Dugong, the Manipur Brow Antlered Deer and the like, alternative homes are imperative. Where *in situ* conservation efforts are unlikely to succeed, *ex situ* captive breeding and rehabilitation measures may be necessary, in tandem with the preparation of their wild habitats to receive back captive populations, specially in respect of lesser-known species where status and distribution of wild animals are not fully known

Alteration of genetic purity of certain wild species through inbreeding with domesticated, feral counterparts is yet another grave impending threat, seriously jeopardising genetic purity of species like the Wild Buffalo, Wild

Pig and Jungle Fowl. It must be ensured that natural phenomena involving *inter alia* pollination, breeding, feeding, movements and migrations are not hampered but assisted.

Action required

1. To undertake a programme of *ex situ* captive breeding and rehabilitation in the wild for critically endangered species in accordance with IUCN guidelines, after developing requisite techniques and capabilities in this regard.

Priority Projects

Develop capabilities for planned breeding and reintroduction of captive bred populations of identified endangered species in accordance with IUCN guidelines.

Timing : To start in 2003 and ongoing

Responsibility : CZA, State Governments, and Scientific Institutions.

IX. CONSERVATION EDUCATION AND PROTECTED AREA INTERPRETATION

Overview and Objectives

To win support for wildlife conservation by explaining the rationale behind the protection of natural ecosystems to politicians, legislators, judges, planners, technocrats and bureaucrats who manage the nation. To elicit broad-based public support from different sections of society, particularly communities neighbouring PAs and forests. To convey a sense of urgency to young people and win their support for the protection of India's natural heritage. To inform and involve the media on issues surrounding wildlife conservation and to highlight the connections between destabilised ecosystems and the falling quality of human life. To explain the connection between healthy ecosystems and India's water and food security.

Action required

1. Training personnel, especially from local communities, for wildlife education so that they can be employed as interpreters/guides at PAs, Zoological Gardens, Natural History Museums, etc.
2. Enhance the role of zoos as centres of conservation awareness.

Priority projects:

1. Encourage creation of nature immersing enclosures for display of wild animals in zoos and explain ecological linkages of species displayed through appropriate signage.

Timing: To start in 2003 and ongoing.

Responsibility: CZA, State/UT Governments and NGOs.

* * * * *

**Recognition of Zoo Rules, 2009
with (Amendment) Rules, 2013**

4. Recognition of Zoo Rules, 2009 with (Amendment) Rules, 2013

MINISTRY OF ENVIRONMENT AND FORESTS
GOVERNMENT OF INDIA

New Delhi, the 11th November, 2009

NOTIFICATION

G. S. R.807(E). dated 10th November, 2009, published in the Gazette of India, Extra., Pt.II, Sec. 3(i), No. 643, dated 11th November, 2009. In exercise of the powers conferred by clauses (f) and (g) of Sub-section (1) of section 63 of the Wild Life (Protection) Act, 1972 (53 of 1972), and in supersession of the Recognition of Zoo Rules, 1992, except as in respect of things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely; :-

1. Short title and commencement

- (1) These rules may be called the Recognition of Zoo Rules, 2009.
- (2) They shall come into force on the date of their publication in the Official Gazette

2. Definitions

In these rules unless the context otherwise requires:

- (a) "Act" means the Wild Life (Protection) Act, 1972 (53 of 1972);
- (b) "Central Zoo Authority" means the Central Zoo Authority constituted under section 38A of the Act;
- (c) "Conservation Breeding Centre" means the facility specially dedicated to planned conservation breeding of an endangered species of wildlife.
- (d) "Enclosure" means any accommodation provided for zoo animals.
- (e) "Enclosure barrier" means a physical barrier to contain an animal within an enclosure.
- (f) "Endangered Species" means species included in Schedule I and Schedule II of the Act.

- (g) "Critically endangered species" means an endangered species whose total number in all the zoos in the country put together does not exceed 200.
- (h) "Form" means a form appended to these rules.
- (i) "Performance" means any effort to force the animal to carry out unnatural act including performance of circus tricks.
- (j) "Rescue Centre" means an establishment for the long-term care of animals specified in the Schedules to the Act.
- (k) "Stand-off-barrier" means a physical barrier set back from the outer edge of an enclosure barrier.
- (l) "Zoo Director" means an in-charge of the zoo with whatever designation, responsible for day to day management of the zoo.
- (m) "Zoo Operator" means the person who has ultimate control over the affairs of the zoos provided that _____
 - I. in the case of a firm or other association of individuals, any one of the individual partners or members thereof; or
 - II. in the case of a company, any director, manager, secretary or other officer, who is in-charge of and responsible to the company for the affairs of the zoo; or
 - III. In case of zoo owned or controlled by the Central Government or any State Government or Union Territory Administration or any Trust or Society funded by the Central Government or a State Government or a Union Territory Administration, the Secretary of the concerned Department of that Government, or as the case may be the Union Territory Administration, shall be deemed to be the Zoo Operator.

3. Application for Recognition

- (1) An application for recognition of a Zoo under section 38H of the Act, shall be made to the Central Zoo Authority in Form I.
- (2) An application for obtaining prior approval of the Central Zoo Authority under sub-section (1A) of section 38H of the Act for establishment of a new zoo shall be made to the Central Zoo Authority in Form I along with a detailed project report.

4. Fees for Application

There shall be paid in respect of every application made under rule 3, a fee of ten thousand rupees to be paid through Demand Draft or Postal Order in favour of the “Central Zoo Authority, New Delhi”.

5. Documents to be filled along with the application and particulars it should contain. -----

Every application under rule 3 shall be accompanied by the fee specified under rule 4 and shall also contain documents and particulars as to the matters specified in Form I.

6. Power to make inquiries and call for information

The Central Zoo Authority may, before granting recognition to a zoo under Section 38H of the Act, make such inquiries and ask for from the applicant such further information, as it may considers necessary.

7. Form of recognition ----- (1) The Central Zoo Authority may, on being satisfied with regard to sufficiency of facilities and standards in the zoo, grant recognition to such zoo.

(2) The recognition granted to a zoo under sub-rule (1) shall be subject to the following conditions, namely;

- (a) that the recognition unless granted on a permanent basis, shall be for such period not less than one year as may be specified in the recognition.
- (b) that the zoo shall comply with such standards and norms as are, or may be specified or imposed, by or under the provisions of the Act or the rules made thereunder; and
- (c) the zoo shall comply with the directions and guidelines issued by the Central Zoo Authority from time to time, for the purpose of maintenance and upkeep of the zoo.

8. Renewal of recognition ----- (1) A zoo, recognized under these rules, shall make an application to the Central Zoo Authority in Form I three months before the expiry of the period of recognition..

(2) The provisions of rule 3, rule 4, rule 5, rule 6 and rule 7 shall apply in relation to renewal of recognition as they apply in relation to grant of recognition except that the fee payable in respect of an application for renewal of recognition shall be five thousand rupees.

9. **Classification of zoos.** ----- (1) For the purposes of deciding standards and norms for recognition of zoo and monitoring and evaluating its performance, the zoo, on the basis of area, number of visitors, number of species and animals, endangered species and number of animals of endangered species in its collection shall be taken into consideration and the zoo shall accordingly be classified into following four categories as specified in the Table, namely:-

S. No.	Category of zoo	Criteria for Qualifying to the category					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Area of the zoo (hectares)	No. of visitors in a year (in lakhs)	No. of species	No. of animals	No. of endangered species	No. of animals of endangered species
1.	Large	75	7.5	75	750	20	100
2.	Medium	35	3.5	35	350	10	50
3.	Small	10	1.0	10	100	3	15
4.	Mini	Less than 10	Less than 1.00	Less than 10	Less than 100	--	----

"(2) The zoo which meets at least any four of the aforesaid criteria (but including number of species and number of animals) shall be classified as such by the Central Zoo Authority.

Provided that the Central Zoo Authority may, by order in writing, allow a mini zoo to keep animals of endangered species subject to the conditions, if any, laid down in that order with regard to the area of the zoo, housing, upkeep and healthcare facilities including deployment of veterinarian and supervisory level staff.

*** Amended vide the Gazette Notification GSR 657 (E) dated 02.08.2013, (Pg. No.76).**

In the Recognition of Zoo Rules, 2009, in rule 9, for sub-rule (2) the following sub-rule be substituted, namely :-

"(2). The Zoo which meets any two of the criteria specified in columns (3) to (6) and meet the criteria specified in column (7) and (8)

specified in the Table above shall be classified as such by the Central Zoo Authority:

Provided that the Central Zoo Authority may, by order in writing allow a mini Zoo to Keep animals of endangered species subject to the conditions, if any, laid down in that order with regard to the area of the Zoo, housing, upkeep and healthcare facilities including deployment of veterinarian and supervisory level staff."

10. Standards and norms for recognition.-----

The Central Zoo Authority shall grant recognition to a zoo, with due regard to the interest of protection and conservation of wildlife, and on being satisfied that the standards and norms and other matters specified in the Schedule are met by such zoo:

Provided that the Central Zoo Authority may, if it considers appropriate, and for reason to be recorded in writing, grant recognition, with conditions, if any, to such zoo which have shown considerable improvement in the past and have the potential and resources to come up to the prescribed standards and norms within a reasonable time frame and are willing to do so. Such an action would lead to qualitative improvement in the zoos, and avoid logistic problems arising due to the closure of the zoos on the basis of their present status.

11. Maintenance of Records and submission of Inventory

- (1) Every zoo shall maintain record of the births, acquisitions, deaths and disposals of animals of each species in its collection in the manner and in the format determined by the Central Zoo Authority and the inventory of the animals in the collection of each zoo, along with the details mentioned above for each financial year shall be submitted to the Central Zoo Authority by 30th day of April of the ensuing year in Form II.

Provided that the details in respect of the animals pertaining to the species included in Schedule I and Schedule II to the Act, along with the detailed reasons of death identified on the basis of the post-mortem examination reports shall be submitted to the Central Zoo Authority every quarter, within a period of fifteen days of the end of that quarter.

- (2) Every zoo shall submit an annual report of its activities and compliance of the conditions stipulated by CZA for each financial year to the Central Zoo Authority by the 30th day of June of the year.

THE SCHEDULE

[See rule 10]

1. **General requirements.**-----

- (1) Every zoo shall endeavour to establish and sustain population of physically, genetically and behaviorally healthy animals for furthering the cause of wildlife conservation and communicating credible conservation message to the visitors through display of healthy animals in naturalistic settings.
- (2) Every zoo shall, through proper landscaping and planting of appropriate species, provide a naturalistic environment within the zoo to enable the visitors to have communion with nature and get motivated for living in harmony with nature.
- (3) Every zoo shall endeavour to regulate the movement of visitors in the zoo in such a manner that zoo animals are not unduly disturbed, stressed or provoked and the zoo shall be closed to visitors at least one day in a week.
- (4) Every zoo, as a safeguard against the un-regulated access of visitors to the zoo and zoo animals being subjected to injury, pilferage and predation, shall design appropriately the barriers along the boundary of the zoo in accordance with the standards issued by the Central Zoo Authority in this regard.
- (5) Every zoo, which is surrounded by human landscape shall be encompassed by a perimeter wall of at least two meter in height from the ground level on both sides.
- (6) No residential colony shall be constructed within the zoo premises.

Provided that where such colonies already exist, it shall be separated from the zoo premises by a boundary wall with a minimum height of two meters from the ground level. The entry to the residential colony shall not be through the zoo premises.
- (7) Every zoo shall carry out its operations in a manner that causes minimum stress on natural resources and produces the minimum of solid wastes and effluents and the zoo shall also endeavour to put in place the practices of effective waste management through reducing, reusing and recycling and disposing the effluents and the solid wastes in a manner that causes least adverse environmental impact.

- (8) Every zoo shall refrain from display of sick, injured, infirm and tethered animals to the visitors and such animals shall be housed in off-display facilities specially earmarked for and providing appropriate upkeep and healthcare for such animals
- (9) Every zoo shall refrain from housing of domestic animals and pets within the zoo premises and adequate safeguards shall also be put in place to prevent the entry of domestic livestock, stray animals and pets into the premises of the zoo.

2. Administrative and Staffing Pattern

- (1) The zoo operators shall post an officer of appropriate rank as “whole time in-charge” of the zoo with powers to take decision and ensure that adequate financial resources and infrastructural support is made available to such officer for proper housing, upkeep and healthcare of the zoo animals and managing the zoo in a planned manner.
- (2) Every zoo operator shall provide adequate scientific and technical staff to support the officer-in-charge of the zoo in carrying out the responsibilities of housing, upkeep and healthcare of zoo animals, research and visitor education as specified in the Table below, namely:

S. No.	Category of Staff	Large Zoo	Medium Zoo	Small Zoo	Mini Zoo
(1)	(2)	(3)	(4)	(5)	(6)
1.	Curator	1	1	1	Mini Zoos shall avail the assistance of appropriately qualified individuals available locally
2.	Veterinarian	2	1	1	
3.	Education Officer	1	1		
4.	Biologist	1	1	1	

- (3) In case the scientific and technical posts are filled by direct recruitment, the recruitment rule for such posts shall provide for their career progression including the benefit of flexible complementing scheme for their promotions.

3. Development and Planning

- (1) Every zoo shall prepare and get the master plan approved by the Central Zoo Authority
- (2) Zoos which are in operation at the time of the commencement of these rules, shall prepare and get the master plans approved from the Central Zoo Authority within one year from the date of commencement of these rules.
- (3) The master plan referred to in sub-paragraphs (1) & (2), shall inter alia, include all round development of the zoo for a period of twenty years which shall be revised every ten years along with a detailed layout plan prepared on the basis of the theme adopted by the zoo, indicating the locations of green belts, lawns, gardens, animal display area, visitor facilities, support infrastructure for animal upkeep and healthcare, buildings for administrative and maintenance unit.
- (4) Atleast 30% of the area earmarked for the zoo shall be kept under green belt and natural vegetation and the area for animal housing shall not exceed 30% area of the zoo.
- (5) Every zoo shall take adequate care to locate and design all 'pucca' buildings including the visitor facilities in such a manner that the natural landscape of the zoo and animal enclosures are not masked and the cleanliness and hygiene of the zoo is not affected.
- (6) Every zoo shall, in consultation with the Central Zoo Authority, prepare a collection plan indicating the names of the species and maximum number of animals of each species to be housed in the zoo, having due regard to the congeniality of the climatic conditions of the locality for the general health and well being of the species, availability of the space and infrastructural support for proper upkeep and healthcare of the species, proximity of the zoo to the habitat range of the species and the past record of the zoo in management and breeding of the species and no zoo shall compromise on housing and upkeep standards of animals for accommodating new species or additional animals of the species in its collection.
- (7) No zoo shall accept any rescued animal unless it has appropriately designed enclosure and upkeep facilities for the animal as well as

the facilities for keeping it in isolation during quarantine period.

- (8) Whenever any zoo decides to accept any rescued animal for housing, a detailed report regarding the source from which the animal has been received, legality of its acquisition and the facilities available at the zoo for housing, upkeep and healthcare shall be sent to the Chief Wildlife Warden of the State.

Provided that in case, the rescued animal pertains to an endangered species a copy of the report shall also be sent to the Central Zoo Authority.

- (9) Any decision of the Central Zoo Authority about any animal being sent to a particular zoo for augmenting the number of founder animals for the conservation breeding programme of the species shall be binding on the concerned zoo.

4. Animal housing, display of animals and animal enclosures

- (1) Every zoo shall endeavour to display the animals in nature immersing enclosures.
- (2) The designs and dimensions of every enclosure shall be determined having due regard to the biological behaviour of the species and the number of animals to be housed therein as per the standards specified by the Central Zoo Authority in this regard from time to time.
- (3) The zoo shall ensure that the enclosure is safe and secure for the animals, animal keepers and the visitors and has requisite space for free movement, exercise and expression of natural behaviour by the animals.
- (4) Adequate space shall also be made available to the animals in order to maintain safe distance from the dominant animals in the group or herd.
- (5) No zoo shall display any animal in the enclosure that is not in accordance with the standards specified by the Central Zoo Authority in this regard.
- (6) Every zoo shall make special efforts to enrich the environment of the enclosure to meet the species specific behavioural requirements of the animals in accordance with the standards specified by the Central Zoo Authority.

- (7) Adequate screening shall be provided between adjacent enclosures to safeguard against the animals getting unduly excited or stressed due to visibility of animals housed in these enclosures
- (8) No new enclosures for endangered species shall be constructed without prior approval of the Central Zoo Authority.
- (9) Every zoo shall provide appropriately designed and effective stand off barriers at every animal display enclosure to regulate the movement of visitors in the zoo in a manner that facilitates the visitors in getting unobstructed view of wild animals, without reaching in the vicinity or proximity of the animals and getting the opportunity to physically touch or provoke the animals and shall also display adequate sign boards so as to give warning to the visitors to keep a safe distance from the animals.
- (10) Every zoo shall provide appropriate signage with relevant information on the biology, behaviour and the population status of the species in the wild at every display enclosure.

Provided that large and medium zoos shall endeavour to provide interactive interpretation facilities for the purpose of explaining behaviour and biology of the species displayed in the enclosure.

5. Upkeep and healthcare of animals

- (1) Every zoo shall house and maintain the animals in its collection in socially and behaviourally viable groups. No animal shall be separated from the group unless doing so is necessary for the security and welfare of the animal or other animals in the group.

Provided that the animals, so separated, shall be housed in accordance with standards specified by the Central Zoo Authority in this regard.

- (2) Every zoo shall endeavour to provide all the animals in its collection timely supply of quality food of such a composition and in such quantities that nutritional and behavioural requirement of each animal are fully met and adequate safeguards shall be taken to ensure that no animal remains under-nourished on account of dominant animals not permitting other animals getting their share of the feed and the zoo operator shall ensure round the clock supply of potable water to all the animals in the zoo.

- (3) The timing of distribution of food, placement of food and way of distribution of food to the animals shall be regulated in such a manner that the animals get maximum opportunity to express natural instincts and skills and behaviour related to feeding.
- (4) As a safeguard against feral animals, free ranging wild animals and scavengers sharing the feed of the zoo animals, each animal shall be provided feed in the feeding cells/ kraals specially earmarked for the purpose and such feeding cells and kraals shall be so designed that these can also serve as indoor enclosures for the animals during extreme weather conditions as well as for secure stay during the nights:

Provided that the dimensions and designs of the feeding cells and kraals shall be as per the standards specified by the Central Zoo Authority.

- (5) Every zoo operators shall ensure that the left over feed, excreta of animals and all other wastes are removed promptly from the feeding cells and kraals and the feeding cells and kraals are washed and disinfected as per the advice of the authorized veterinary officers and the solid and the liquid waste generated during the process shall be disposed off in such manner that has no adverse impact on the hygiene and cleanliness of the zoo and the landscape surrounding the zoo.
- (6) The curatorial and the veterinary staff shall keep a close watch on the general behaviour and health parameters of the zoo animals. The animals shall be handled only by the staff having experience and training in handling the individual animals.
- (7) Any animal that shows any sign of dullness, loss of appetite, injury or abnormal behaviour shall be thoroughly assessed and provided medical attention promptly as per the standards specified by the Central Zoo Authority in this regard from time to time and the direction of the Zoo administration.
- (8) Every zoo animals shall be screened for parasitic loads as per written schedule prepared by the zoo in consultation with the veterinary officer and prophylactic medicines administered as per clinical requirements and vaccination of animals against infectious diseases shall also be done, as per the schedule prescribed by the Veterinary Officer from time to time.

- (9) All staff involved with upkeep and healthcare of zoo animals shall be screened against zoonotic diseases once every year and those found positive to any communicable disease shall be provided appropriate treatment till they get cured and freed of the infection and during the period of such treatment, the infected employees shall be kept away from the responsibility of upkeep and healthcare of the animals.
- (10) Every zoo shall maintain detailed records of observations of biological and social behaviour and health status of the animals including feed intake, medication and treatment provided in the keeper's diary, daily reports, animal history cards and treatment cards, as per standards specified by the Central Zoo Authority.

6. Veterinary and infrastructure facilities

- (1) Every zoo shall, -----
 - (a) have veterinary facilities appropriate to the size and type of the animal collection of the zoo;
 - (b) have a full fledged veterinary unit with all basic diagnostic facilities, comprehensive range of drugs, operation theatre and in-patient wards.

Provided that a mini zoo shall have at least facilities of a treatment room.

- (2) No zoo shall acquire sophisticated and costly diagnostic equipments unless there is adequate technically qualified manpower to operate and use the same.
- (3) Every zoo, except mini zoo, shall have a postmortem room, isolation ward, quarantine ward, animal restraining and tranquilizing equipments and a veterinary care reference library.
- (4) Tranquilization of any animal shall be done exercising utmost care and following the standards specified in this regard by the Central Zoo Authority from time to time.
- (5) Every zoo operator shall provide each zoo the veterinary support staff as specified in the Table below; namely:-

S. No.	Support Staff	Large zoo	Medium zoo	Small zoo
(1)	(2)	(3)	(4)	(5)
1.	Lab. Assistant	1	1	-
2.	Stockman or compounder	2	1	1

Provided that a Mini zoo shall have atleast one whole time employee to take care of upkeep and feeding of the zoo animals.

- (6) Every zoo shall have linkages with the eminent institutions and organizations working in the field of wild animal healthcare with the objectives to provide for:
- the assistance in scientific diagnosis of diseases of serious nature and advise on the effective remedial treatment.
 - the training and upgrading technical skills of zoo staff; and
 - the development of protocols for preventive medicines and vaccination

7. Post-mortem and disposal of carcasses of animals

- Every animal died in the zoo shall be subjected to a detailed postmortem examination by registered veterinarian to determine conclusively the cause of the death.
- The findings of the post-mortem examination referred to in sub-paragraph (1) shall be recorded in such format as may be prescribed by Central Zoo Authority and in this regard shall be maintained for a period of not less than six years.
- In the event of the post mortem being inconclusive and no specific reason for death is identified, the zoo authorities shall send the samples of the tissues and organs, blood, viscera etc. for further examination to the qualified diagnostic laboratory having adequate specialization for further investigation and identifying the cause of death.
- Every zoo shall ensure that the carcasses of the animals, after the post-mortem has been conducted, is disposed off by burying or burning in a manner that does not have any adverse impact on

the hygiene and cleanliness of the zoo:

Provided that the carcasses of large cats shall be disposed off by burning in the presence of the Director of the zoo or any officer in the next rank to him and authorized by him in this behalf.

Provided further that the carcasses of animals died due to Anthrax or such other communicable diseases shall not be opened and subjected to post-mortem, as a safeguard against spread of the disease. These shall be buried intact.

8. Euthanasia of the animals

- (1) No animal in the zoo shall be euthanized unless doing so is essential for the health of other animals or relieving the animal from unnecessary suffering or agony and whenever such exigencies arrives, action may be taken in accordance with the norms specified by the Central Zoo Authority in this regard.

9. Acquisition and breeding of animals

- (1) Every zoo shall endeavour to keep and maintain animals of various species in their collection in such a sex ratio that optimizes breeding and helps in developing a self-sustaining population of each species.
- (2) To safeguard against ill effects of inbreeding on the zoo population, the zoo shall endeavour to introduce unrelated animals to zoo stock through exchange, loaning and getting gifts of animals from other zoos.
- (3) No zoo shall acquire single animal or genetically non-viable number of animals unless such acquisition is necessary for pairing of single animals or making the group genetically/ biologically viable.
- (4) Every zoo shall endeavour to acquire mates for single and unpaired animals on priority basis and in the event of any zoo failing to find a mate for single and unpaired animal within a period of six months, the unpaired or single animal shall be transferred or exchanged or given on breeding loan to any other zoo in accordance with the norms specified by the Central Zoo Authority in this regard.
- (5) For the purpose of transportation of animals from one place to

another, the standards specified in this regard by the Central Zoo Authority shall be complied with.

- (6) The Central Zoo Authority shall assign the responsibility of conservation breeding of the identified critically endangered species to identified zoos having technical capabilities and housing facilities, preferably close to the distribution range of the species and every zoo shall help the identified zoos in implementing the breeding programme.
 - (7) The surplus animals from the breeding population shall be made available to the contributing zoo for display purposes on the basis of quality of housing and infrastructural facilities available with the zoos.
 - (8) Every zoo shall, with a view to prevent inbreeding and the loss of heterozygosity, the zoos shall maintain the animal history cards & stud and herd book for the animals of endangered species housed in the zoo and put appropriate identification marks and transfer or exchange animals with other zoos.
 - (9) Every zoo shall endeavour to limit the number of animals of each species within the limits set by the animal collection plan of the zoo by implementing appropriate population control measures like segregation of sexes, vasectomy, tubectomy and implantation of pellets etc., with due consideration of the health and welfare of the animals and interest of their long term survival.
 - (10) Every zoo shall take effective measures to safeguard against escape of the zoo animals from the premises of the zoo and in the event of any accidental escape, immediate action shall be taken to retrieve the escaped animals.
 - (11) No zoo shall release any captive animal into the wild except in accordance with the norms specified by the Central Zoo Authority in this regard.
 - (12) Every zoo shall ensure that no hybridization of species or races of same species takes place in the zoo.
- 10 **Research activities** --- Every zoo shall endeavor to carry out collaborative research for evolving innovative strategies for providing the animals housed in the zoo a better quality of life, enhanced longevity, higher genetic and behavioural viability and improved reproduction potential and to achieve the said goal the every zoo, other than mini

zoos, shall make arrangements for meticulous recording of data on the social behaviour, group dynamics and reproductive biology of the species housed in the zoo and developing a data base to be shared with other zoos and the identified institutions, in accordance with norms specified by the Central Zoo Authority in this regard.

11. **Education and outreach activities ----** (1) Every zoo shall endeavour to educate the visitors to the zoo and the people at large about the significance of wildlife conservation for the general well being of the people and keeping the life support system of nature intact and the efforts shall be made to make people aware about the role played by the zoos in this regard and the ways and means through which general public can participate and contribute for the same.
- (2) No physical handling or performances by animals shall be permitted as part of educational activity.

12. **Visitors facilities**

- (1) Every zoo operator shall provide adequate civic facilities for visitors at appropriate and convenient places in the zoo including for physically disadvantaged persons and such facilities shall be so located that they do not mask or impact the view of enclosures.
- (2) Every zoo shall have first aid facilities including snake anti-venom and life saving drugs, readily available in the zoo premises.
- (3) Every zoo shall make arrangements for providing access to the handicapped persons for viewing wild animals at various animal enclosures.

* * * * *

FORM- I
[See rules 3 & 8]

**APPLICATION FOR GETTING RECOGNITION FROM
THE CENTRAL ZOO AUTHORITY
UNDER SECTION 38H [Sub-section (2)]**

To
The Member Secretary
Central Zoo Authority
Annexe No. VI, Bikaner House,
Shahjahan Road,
New Delhi – 110 011.

We want to get recognition under section 38H of the Wild Life (Protection) Act, 1972 in respect of _____. Bank Draft for Rs. _____ drawn in favour of Central Zoo Authority, New Delhi is also enclosed. The required information in respect of _____ is as under :

1. Name of the Zoo:
2. Location and area of the Zoo:
3. Date of Establishment:
4. Name and address of the Zoo Operator:
- *5. Total number of visitors to the Zoo during the last three years: (Year wise):
- *6. Total number of days on which zoo is open to visitors during a calendar year:
7. Number of animals/ species exhibited by the zoo:

Stock position during the current financial year			
Number of species	Stock Position on the close of preceding year	Births/ Acquisitions/ Deaths/ Disposal	Stock as on the date of application
Mammals			
Birds			
Reptiles			
Amphibians			
Fishes and			
Invertebrates			

8. Total number of enclosures:
 - *(i) Open air enclosures:
 - (ii) Closed cages/ aviaries:
9. List of endangered species bred during last 3 years:
10. Veterinary facilities:
 - (a) Whole time veterinarian available or not:
 - (b) Facilities available in the Veterinary Hospital:
 1. Operation theatre/ Surgical room
 2. X-ray facility
 3. Squeeze cages
 4. In-door patient ward
 5. Quarantine ward & Isolation ward
 6. Dispensary
 7. Veterinary care reference library
 8. Nursery for hand-rearing of animal babies
 9. Pathological laboratory

10. Tranquilizing equipments/ drugs
11. Post-mortem room
12. Whether the following facilities exist in the zoo:
 - (a) Kitchen
 - (b) Food store
 - (c) Deep freeze
 - (d) Portable water facility
 - (e) Food distribution van/ rickshaw etc.
11. Sanitary care and disease control:
Whether:-
 - (i) Pollution free water to animals for drinking is available?
 - (ii) Proper drainage system exists in enclosures?
 - (iii) Regular disposal of refuse material is done?
 - (iv) Programme for control of pests and predators exists?
 - (v) Preventive measures like deworm and vaccination are being provided?
- *12. Amenities to visitors:
Whether:
 - (a) Public facilities like toilets/ bathrooms exist?
 - (b) Sufficient number of drinking water taps available?
 - (c) Visitor information centre and nature interpretation centre exist?
 - (d) Zoo education facilities have been provided?
 - (e) Public telephone booths are available?
 - (f) Kiosks and restaurants are available at the zoo?
- *13. Safety measures for visitors:
Whether:-
 - (a) Effective stand-off barriers have been provided around enclosures?

- (b) Adequate number of warning signboards exist?
 - (c) First-Aid measures are available?
14. Budget of the Zoo for the last 3 years Revenue Grants Total expenditure:
 15. Annual Report, Guide books, Brochure or any other publication (copies enclosed)
 16. Master plan/ detailed project report of the zoo (enclose a copy)

Signature of the Applicant

Name of the Applicant

Date:

*Rescue Centres and Conservation Breeding Centres are not required to provide information.

FORM – II

[See rule 11 (1)]
PART - A

Proforma for Quarterly/ Annual Inventory Report

Inventory Report for the Quarter/ Year :

Endangered Species*

S. No	Animal Name	Scientific Name	Opening Stock as on			Births			Acquisitions			Disposals			Deaths			Closing Stock as on		
			M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
	Birds																			
1.																				
2.																				
	Total Birds																			
	Mammals																			
1.																				
2.																				
	Total Mammals																			
	Reptile/ Amphibians																			
1.																				
2.																				
	Total Reptiles/ Amphibians																			
	Invertebrates																			
1.																				
2.																				
	Total Invertebrates																			
	Total Animals																			

*Animals under Sch- I and Sch- II of Wild Life (Protection) Act, 1972

Curator (Animals)

Director

रजिस्ट्री सं० डी० एल०-33004/99

REGD. NO. D. L.-33004/99


भारत का राजपत्र
The Gazette of India

असाधारण

EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (i)

PART II—Section 3—Sub-section (i)

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं. 492]

नई दिल्ली, बुध्द्व्यतिवार, सितम्बर 26, 2013/आश्विन 4, 1935

No. 492]

NEW DELHI, THURSDAY, SEPTEMBER 26, 2013/ASVINA 4, 1935

पर्यावरण और वन मंत्रालय

अधिसूचना

नई दिल्ली, 2 अगस्त, 2013

सा.का.नि. 657(अ).— केन्द्रीय सरकार, वन्य-जीव (संरक्षण) अधिनियम, 1972 (1972 का 53) की धारा 63 की उपधारा (1) के खंड (घ) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, चिड़ियाघर मान्यता नियम, 2009 का संशोधन करने के लिए निम्नलिखित नियम बनाती है, अर्थात्:—

1. संक्षिप्त नाम और प्रारंभ. — (1) इन नियमों का संक्षिप्त नाम चिड़ियाघर मान्यता (संशोधन) नियम, 2013 है।

(2) ये राजपत्र में उनके प्रकाशन की तारीख को प्रवृत्त होंगे।

2. चिड़ियाघर मान्यता नियम, 2009 के नियम 9 के उपनियम (2) के स्थान पर निम्नलिखित उपनियम रखा जाएगा, अर्थात्:—

“(2) चिड़ियाघर जो उपर्युक्त सारणी में विनिर्दिष्ट स्तंभ (3) से स्तंभ (6) में विनिर्दिष्ट मानदंडों में से किन्हीं दो का और स्तंभ (7) और स्तंभ (8) में विनिर्दिष्ट मानदंडों को पूरा करता हो, को केन्द्रीय चिड़ियाघर प्राधिकरण द्वारा ऐसे रूप में दर्जाकृत किया जाएगा:—

परंतु केन्द्रीय चिड़ियाघर प्राधिकरण लिखित आदेश द्वारा, उक्त आदेश में पशु चिकित्सक एवं पर्यायी स्तर के कर्मचारियों के नियोजन सहित चिड़ियाघर के क्षेत्रफल, आवास, देखरेख और स्वास्थ्य के देखभाल की सुविधाओं संबंधी शर्तों, यदि कोई हों, के अधीन रहते हुए किसी सशु चिड़ियाघर को संकटग्रस्त प्रजातियों को रखने के लिए अनुज्ञात कर सकेगा।”

[फा.सं. 26-4/2007-सीजेडए (खण्ड-II)]

डा.एस.के. खंडूरी, महानिरीक्षक, वन (वन्यजीव)

टिप्पण: मूल नियम भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (i) में संख्यांक सा.का.नि. 807 (अ), तारीख 10 नवंबर, 2009 द्वारा प्रकाशित किए गए थे जिसका अग्री तक संशोधन नहीं किया गया है।

4143GL/2013

(1)

MINISTRY OF ENVIRONMENT AND FORESTS

NOTIFICATION

New Delhi, the 2nd August, 2013

G.S.R. 657 (E).— In exercise of the powers conferred by clause (g) of sub-section (1) of Section 63 of the Wild life (Protection) Act, 1972, the Central Government hereby make the following amendment in the Recognition of Zoo Rules, 2009 namely :—

1. **Short title and commencement.**—(1) These rules may be called the Recognition of Zoo (Amendment) Rules, 2013.
- (2) They shall come into force on the date of their publication in the Official Gazette.
2. In the Recognition of Zoo Rules, 2009, in rule 9, for sub-rule (2), the following sub-rule shall be substituted, namely :—

“(2) The zoo which meets any two of the criteria specified in columns (3) to (6) and meet the criteria specified in column (7) and (8) specified in the Table above shall be classified as such by the Central Zoo Authority :

Provided that the Central Zoo Authority may, by order in writing, allow a mini zoo to keep animals of endangered species subject to the conditions, if any, laid down in that order with regard to the area of the zoo, housing, upkeep and healthcare facilities including deployment of veterinarian and supervisory level staff”.

[F.No26-4/2007-CZA(Vol-II)]

Dr. S.K. KHANDURI, Inspector General of Forests (Wildlife)

Note : The principal notification was published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), vide number G.S.R. 807(E), dated the 10th November, 2009, which has not been amended so far.

**Guidelines for facilitating effective
and scientific management of
zoos in India in consonance
with Rule 10 of Recognition of
Zoo Rules, 2009
(Amendment) Rules, 2013**

5. Guidelines for facilitating effective and scientific management of zoos in India in consonance with Rule 10 of Recognition of Zoo Rules, 2009 (Amendment) Rules, 2013

With a view to give proper direction and thrust to the operations of the zoos, the Central Government in exercise of powers vested to it under Section 63 of Wild Life (Protection) Act, 1972 had notified Recognition of Zoo Rules, 1992. These Rules have been further rationalized as Recognition of Zoo (Amendment) Rules, 2013 and made more comprehensive and self explanatory. However, some further technical guidance and procedural details need to be provided to the zoos for facilitating effective and scientific management of zoos in India. To achieve the above stated goals the Central Zoo Authority is issuing following guidelines:-

Rule 10, Schedule 1 (1-9) General requirements

Schedule 1 (2)

Providing naturalistic environment in the zoo

Zoo should endeavour to maintain the basic naturalistic features of the zoo site such as water bodies, natural ridges and vegetation there on intact. Planting of bushes, hedges and trees should also be done wherever vacant space is available and maintain the same to serve as habitat for free ranging species of wild animals and birds.

Schedule 1 (3)

Regulation of the movement of the visitors in a manner that the animals are not unduly disturbed

Zoo should not permit in its premises the activities like meetings, conferences, exhibitions, melas and social functions which are inconsistent with the objectives of the zoo and are likely to raise levels of pollution and obstruct the smooth movement of visitors.

Schedule 1 (4)

Provision of appropriately designed barrier

The perimeter barrier and the entry gate of each zoo should be so designed, constructed and maintained that stray dogs, domestic livestock and

feral animals can not get access into the zoo. Provision for posting adequate number of security guards should also be made to keep a close watch so that unauthorized persons do not cause any breaches in the perimeter barrier to get access to the zoo and cause damage to the zoo property or harm to zoo animals. All breaches in the perimeter barrier, whether accidental or man made should be repaired promptly.

Rule 10, Schedule 2 (1-3) Administrative and Staffing Pattern

Every zoo should have a detailed chart indicating duties and responsibilities of all levels of staff also indicating the chain of command for reporting and promptly dealing with the matters pertaining to maintenance and operation of the zoo and the emergencies that may arise during such operations. In the absence of a particular functionary, alternate arrangement should be available for looking after his/her functions. Specific responsibility should be assigned to the zoo personnel with appropriate seniority to attend and redress the problems faced by the visitors. All concerned should be suitably notified about the same. Subject to availability of staff, a senior staff member should be designated as ex-officio "Public Relations Officer".

Director/ In-charge of the zoo shall be responsible for smooth functioning of the zoo, proper housing upkeep and health care of the animals, proper visitor management and ensuring their safety. For discharge of these functions, he should assign responsibilities and duties to all the zoo personnel. The directions issued by the zoo Director should be binding on all zoo personnel.

The indicative list of the duties for the posts which are mandatory under the rules, is given below:-

- (i) **Curator:** Upkeep and maintenance of animal collection and animal housing, including timely cleaning and disinfection of animals' enclosure, timely feeding of animals in the prescribed manner, keeping a close watch on the general health conditions of the animals and taking steps for getting sick animals treated on priority basis including crating, shifting and transportation of animals within the zoos.
- (ii) **Veterinarian:** Frequent visits to animal enclosures and assessing general health condition of animals, assessment of the adequacy of the feed being supplied to the animals, having a regular check on the quality of feed and water being supplied to the animals

and timely screening of animals for parasitic loads. Preparation of disinfection schedules, prophylactic treatment schedules and ensuring the implementation of the same. Taking steps for timely restraining and treatment of sick animals, maintenance of record of the treatment provided to animals in prescribed formats, conducting postmortem of animals that die in the zoo for arriving at logical conclusions regarding the reasons of death and device strategies for keeping the mortality of zoo animals at minimum level. He should also be responsible for supervising the crating, shifting and transportation of zoo animals.

(iii) Biologist

- (a) Making observations on the behaviour and biology of animals, assessing the compatibility of animals in groups/herds and maintaining meticulous record of the same, ensuring their upkeep and welfare including provision of special diet for pregnant females, nursing mothers, new borns/ new arrivals, infirm and sick animals.
- (b) Genetic management of animal groups/herds particularly the endangered species including putting identification marks on the newly acquired and new born animals and facilitating timely exchange of animals with other zoos.
- (c) Enrichment of animal enclosures.
- (d) Recommending regulation of movement of visitors in such a manner that its impact on animals is minimum.
- (e) Maintenance of animal history cards and studbooks as stipulated in Recognition of Zoo Rules.
- (f) Gathering up to date information on behavioural biology and reproductive aspects of zoo animals and use the same for refinement of protocols for animals' housing, upkeep and conservation breeding programme.

(iv) Education Officer

- (a) Preparation of brochures, booklets, CDs and other interpretative material on behaviour biology and ecology of various species housed in the zoo for their further dissemination.
- (b) Designing and upgrading the signages at various

- enclosures and developing appropriately designed direction boards and appropriate warning signs for regulating movement of visitors.
- (c) Providing orientation and guidance to the visitors for having educative and rewarding experience at the zoo.
 - (d) Making arrangements for conducted visits of organized groups.
 - (e) Assisting in redressal of the difficulties and grievances of visitors.
 - (f) Training the zoo personnel to deal with the visitors in courteous and polite manner without compromising with zoo ethics.

Rule 10, Schedule 3 (1-9) Development & Planning:

Schedule 3 (3)

Preparing the Master Plan for development of zoos

Master plan of a zoo should be a comprehensive document giving a detailed road map for 20 years with a provision of review every 10 years regarding development, improvement and upgradation of the facilities and infrastructure available at the zoo and building up of the capacity for carrying out all the operations forming part of the zoo management with greater efficiency. The development of the master plan of a zoo involves following steps:-

- (i) Define the mission, vision and the conservation message of the zoo through a detailed process of consultation.
- (ii) Thoroughly inventorise and evaluate the existing infrastructure, facilities, resources and services available at the zoo and analyse the same to identify the areas of strength and weaknesses in order of priority.
- (iii) Draft a development brief and identify the priority needs and development project imperatives to address these needs.
- (iv) Use of the project imperatives for developing an implementable action plan along with estimated costs. Try to match the so developed action plan and the projected costs with the available resources and if necessary keep on repeating the process till optimal relationship among all the components of the master plan i.e. a happy marriage between the needs, opportunities, constraints, risks and rewards is achieved. The concept finally

selected along with summary of other studies listed above should be submitted to the zoo operator and the Central Zoo Authority for their concurrence and approval.

- (v) Once the concept plan is approved by the concerned authorities a comprehensive master plan for the zoo should be developed in the prescribed format annexed at Annexure – I to these guidelines.

Priority areas to be given special attention during preparation of the master plan

1. Achieve the highest standards of housing and upkeep for zoo animals with a view to establish self sustaining populations of genetically and behaviourally viable animals adopting latest skills of behavioural enrichment and genetic management.
2. Planned breeding of endangered species through provision of off the exhibit breeding enclosures of requisite specification in adequate number to accommodate the viable breeding population of endangered species.
3. Availability of requisite expertise for upkeep and healthcare of the animals of concerned species for its long-term survival.
4. Thematic display of animals in nature emersing exhibits equipped with feeding and housing facilities congenial to the species specific behaviour of the animals housed therein.
5. To assess the carrying capacity of the zoo in respect of visitors having due regard to space availability and the welfare of the animals particularly the impact through noise pollution and physical disturbance by visitors and thereby appropriate measures to limit the number of visitors within the carrying capacity.
6. Planning the visitor circulation in the zoo in such a manner that the visitors get unobstructed view of wild animals in a pollution free and natural environment.
7. Development of appropriate signages and interpretation facilities that can help the visitors in understanding the ecological linkages of nature and developing an empathy for wildlife.
8. Efficient waste disposal system and sanitation practices for maintaining hygienic and clean environment in the zoo.
9. Design and maintain appropriate public facilities and civic amenities upto the desired standards.

10. Develop elaborate and effective management plans to deal with unforeseen contingencies and natural disasters and high influx of visitors on particular days.

Tools for preparation and effective implementation of master plan

(a) Identification of the mission for the zoo

Under the Indian conditions the appropriate mission for the zoo could be:-

- I. Compliment the national efforts in conservation of wildlife through planned coordinated conservation breeding of endangered wild animal species of the region.
- II. Develop amongst visitors an empathy for wild animals and motivate them to support the cause of conservation of wildlife.
- III. Develop amongst the visitors an understanding about the ecological linkages with the life supporting processes of nature and the need for keeping them intact by adopting sustainable life styles and living in harmony with nature.
- IV. Enhancing the role of zoos in conservation of wildlife through collaborative research aiming at attaining management skills for in-situ population and carrying out advocacy for protecting the wild animals and their natural habitats.
- V. To act as Rescue Centre by receiving and keeping orphaned, seized, rescued, injured wild animals subject to availability of appropriate housing for the same.

(b) Identification of the vision for the zoo

Public should view the zoos as:-

- I. Scientific institutions engaged in animal welfare and conservation of wildlife
- II. Centres of knowledge on effective techniques for maintaining healthy ambience and pollution free environment.

(c) Conservation Message to be imparted to the zoo visitors

- I. Work for conservation of wildlife and its habitat.
- II. Adopt sustainable life styles and live in harmony with nature.

- III. Contain the consumptive use of natural resources with in sustainable limits through reuse, recycling and refusal.

Thematic display of animals

Grouping or sequencing the animal displays for achieving any or more than one of the following objectives leads to thematic display of animals:-

- I. Facilitate the visitors to understand the biology and behaviour of the species displayed.
- II. Facilitate the visitors to understand the geographical habitat range of various species and the linkages between the long-term survival of the species with conservation of their natural habitat.
- III. Highlight the mythological and cultural significance of various species of wild animals.
- IV. Apprise the visitors of the composite and complex nature of different ecosystems.
- V. Provide the visitors an absorbing and rewarding experience at the zoo.

The themes generally adopted are:

1. Traditional Themes:-

- | | |
|--------------------------|---|
| (a) zoo-geographic | - Continent wise or region wise display |
| (b) Taxanomic | - Class, family and genera wise display |
| (c) Behavioural | - Nocturnal, aquatic, burrowing, arboreal |
| (d) Mixture of the above | - Based on popularity |

2. Recent Concepts ---

Simulation/replication of in-situ sites e. g. Chilka lake, Annamalai hills, Western Ghats, Aravalli Hills, Kanha meadow, Sunderban wetlands, Indian deserts, Gir forests, Shiwalik Foothills, etc.

- | | |
|-------------------------|--|
| Bio-geographic grouping | - High mountain fauna, riverine fauna, Mangrove fauna etc. |
| Eco-system display | - Nilgiri fauna, Desert fauna, Wetland fauna, etc. |

Replication of in-situ site and eco-system display require greater technological expertise and involves high costs but are more aesthetic and absorbing. Zoo-geographic and taxonomic displays are easier to implement but often fail due to non availability of animals to replenish the dead animals stock.

Adoption of a particular theme should be done taking into consideration the available space, species held in collection of the individual zoo/ possibility of procurement from other zoos and the financial resources and technical expertise available with the zoo. Having adopted a particular theme, zoo should strictly follow it. Any deviations from the theme would result in paranoic displays sending wrong conservation message and convert the zoo into a unplanned wild animal display facility.

Adopting themes based on local/ regional animals suited to the local climate have greater chances of success. Highly endangered species should normally not be made part of thematic displays.

Under the present state of management of zoos taxonomic displays with few specialized display on bio-geographic/ ecosystem themes shall be a practical approach.

Visitor circulation plan

Traditionally the zoos have extensive network of roads. As all the roads are inter connected, there is every likelihood of the visitors getting disoriented and moving haphazardly in all directions. It is desirable that the zoo should have only one main approach road to take the visitors to the zoo animal display areas. The main road should be connected to various animal exhibits with loop roads and subloop roads of lesser width and specifications on the basis of hierarchy (importance) assigned to each road. The loop roads and subloop roads should intersect the main road at prominent junction points, where appropriate signage indicating the directions of prominent animal exhibits and visitor facilities should be available.

Due safeguards should be taken so that visitor road does not pass through the area adjoining the animal feeding cells, feeding kraals, animal service areas, service road and off the exhibit areas.

If required, zoo could fix different timings for visitors viewing specific animal facilities.

All civic amenities and visitor facilities should preferably be located by the side of main road only.

Animal collection plan

Every zoo shall take a strategic review of the species of animals and their number to be housed in the zoo for preparation of appropriate animal collection plan, with reference to:-

- (a) Space available to each species/ animal and the space actually required for housing all the animals of all the species held in its stock, as per prescribed norms.
- (b) Past and present performance of the zoo in upkeep, healthcare including the congeniality of the local climate for upkeep of the species.
- (c) Records of births and deaths of the animals of each species and the survival of the young ones.
- (d) Cost of upkeep and healthcare of each species.
- (e) Adopted theme of the zoo and the relevance of the species in the thematic display.
- (f) Species identified for planned conservation breeding by the zoo.
- (g) Species with surplus number of animals which are available with other zoos.

Following should be the guiding principles for finalizing the collection plans for different categories of zoos in Indian conditions

I. Large Zoo (National Collection)

Wild animal species of the area/ locality/ ecosystem the zoo is part of (around 30% of the total species displayed); representative wild animal species of region (North, South, West, Central, East or North-east) the zoo is part of depending upon suitability to the climatic condition (around 30%), representative wild animal species of the nation which are comfortable in the climate of the zoo (around 30%) and not more than 10% exotic wild animal species.

II. Medium Zoo (Regional Collection)

Wild animal species of the area/ locality/ ecosystem the zoo is part of (around 40% of total species displayed); representative wild animal species of the region the zoo is part of (around 40%) and not more than 10% selected species of nation and exotics each.

III. Small Zoo (Local Collection)

Wild animal species of the area/locality/ ecosystem the zoo is part of (around 60%), re representative wild animal species which are comfortable in the climate from the region (20%), nation (10%) and exotics (10%).

IV. Mini Zoo (Local common wild animal collection)

Few identified common wild animal species of the area/locality/ ecosystem the zoo is part of, may be 1-2 common exotics wild animal species.

V. Rescue Centre

Identified problem wild animal species and orphaned, infirm captive animals not fit for display of the area/ locality/ ecosystem the Rescue Centre is part of:-

- (i) All rescued sick or injured wild animals should be rehabilitated back in wild or in regular lifetime care facility/zoo/rescue centre within 30 days of treatment/ healing depending upon the condition/ suitability of the individuals.
- (ii) All seized wild animals should also be rehabilitated back in wild or in regular lifetime care facility/ zoo/ rescue centre depending upon the condition/ suitability of the individuals with 30 days of the seizure after getting permission of the court dealing with the case.
- (iii) All rescued/ abandoned young wild animal should only be reared in nurseries attached to the Veterinary facilities/ hospitals of the recognized zoos/ rescue centres.

V. Specialized Zoo

Exclusive (Reptile/ Snake/ rodent/ bird/nocturnal/ aquatic park and aquarium etc.) specialized zoo may decide housing animals of one step above level i. e. small of region, medium of nation, large of international level in its collection plan.

2. On the basis of the result of the review as mentioned above, list out the species and the number of animals of each species that are necessary for planned thematic display and conservation breeding in the zoo.
3. With a view to enhance the conservation role of the zoo, some of the glamorous mega specie may have to be excluded from the list to accommodate the animal of endangered species and designing of outstanding exhibits.

Taking into consideration the outcome of detailed analysis as mentioned above, draw out the final list of the species and the number of animals of each species to be housed in the zoo. Fewer species with viable population are always preferable to a collection of larger number of species with non viable numbers.

Master Layout plan for the zoo

Master layout plan is a detailed landscape map of the existing zoo site in a scale of 1:1000 to 1:5000 depending on the area of the zoo. All the existing facilities and infrastructure and the locations of the proposed developmental activities in animal display area, conservation breeding area, rescue centre area, visitor circulation routes, animal upkeep and healthcare facilities including animals' quarantine facilities and isolation wards, visitor education facilities and civic amenities, service roads, administrative blocks, entry plaza, car parking should be clearly indicated on the map. Allocation of land for each activity should be made available having due regard to the provisions made under "Recognition of Zoo Rules" in particular to the Sub rule 11.

Disaster and crisis management plan

Every zoo should prepare a detailed plan to deal with crisis in management, arising out of natural disasters like cyclone, flood, drought and earth quake or accidental happenings like fire, animal escapes, out break of diseases, etc. The crisis sometimes may also arise out of vandalism by unruly visitors, strike by the staff, stoppage of supply of water, power and animal feed due to circumstances beyond the control of the zoo management.

The plan would comprise of:-

- I. Assessment of the degree of subjectivity of the zoo to each type of crisis and list out the crisis which are encountered at the zoo more frequently.
- II. (a) List out necessary equipments to deal with crisis like diesel generators, portable saws, axes, showels, bill hooks, water tankers, diesel pumping sets, ropes, spot lights, emergency lamps, siren, hooter, loud speaker, tarpaulin, chains, nuts and bolts and acquire and stock the same.
(b) List and keep a stock of consumables like diesel, petrol, LPG, kerosene, lubricants, fuelwood, batteries, saw blades etc.
- III. Prepare a line of command for dealing with the crisis and a

support contingency plan in case the line of command does not prove effective for some reason.

- IV. Train all concerned to deal with the situation through periodic mock drills. It should be ensured that all equipments are fully functional and effective at all times.
- V. Network and coordinate with specialized agencies like fire fighting units of the State Government/ Union Territories and upgrade the equipments and rationalize the operations on the basis of their inputs.
- VI. Be on lookout for new potential crisis and develop the strategy to meet the same like bird flu, anthrax, retaliatory killing of wild animals etc.

Management Plan

Every zoo should prepare a management plan listing out the activities to be taken up by the zoo for implementing the master plan over next 5 years indicating realistic costs of executing the identified activities and financial year wise targets both physical and financial including anticipated source of funding.

Detailed strategy for achieving the target should also be explained in explicit and elaborate manners.

Rule 10, Schedule 4 (1-10) Animal housing, display of animals & animal enclosures:

Schedule 4 (2)

Dimensions and size of animal enclosures

The land area to be given to any animal exhibit enclosure should be decided having due regard to the maximum number of animals that can be displayed in the animal enclosures. Sambar, Spotted deer, Swamp deer, Sangai and some other ungulates can live in large social groups. Enclosures for such species can easily be designed for displaying 15-20 animals. However, the maximum number of animals that can be displayed in a single enclosure of Chinkara, Chowsingha and Barking deer and similar species should not exceed 5-7.

The area of the enclosure should have adequate land space for facilitating the animals to have free movement and exercise, adequate area to rest in

shade and bask in the sun and have safe refuge from dominant animals and express their natural, social and reproductive behaviour.

The animal exhibit enclosures should not be given geometrical shapes, as the presence of corners is not congenial to smooth and unrestricted movement of animals. Enclosures with greater depth facilitate the animals to keep a safe distance from the visitors and are always preferable.

The dimensions and the area of any enclosure should be decided having due regard to various factors mentioned above and the topography and naturalistic features of site identified for construction of the enclosure. However, indicative sizes for the enclosures, both feeding cells and outdoors of important wild animal species are given in Annexure IIA and IIB respectively to these guidelines. The indicative sizes for outdoors are minimum, zoo operator should always try to provide for larger and bigger outdoor to the extent possible.

The area of the outdoor enclosures for herbivore safari and carnivore safari should not be less than 30 hectares and 20 hectares respectively. Mini zoos being operated as Deer Parks and displaying mega species should not be of less than five hectares.

These dimensions will not apply to Circuses. However, when not in transit, the circuses shall provide the animals space for movement and exercise.

Display of animals in nature immersing enclosures

- (1) Landscape around every animal exhibit/ enclosure should comprise of plantations of appropriate tree and shrub species of adequate extent and such shape that the enclosure should not be visible to the visitors from any place other than the animal viewing areas.
- (2) All the hard exteriors of the enclosure i.e. the enclosure barrier and the frontage of the feeding cells, feeding kraals should be effectively camouflaged through planting of bamboo, dwarf tree species and shrubs.
- (3) Planting of appropriate trees and shrubs should be done around the animal viewing areas to break up the visitors into small viewing groups.
- (4) Visitors should be made to move through the green landscape around the enclosure for reasonable distances.
- (5) Planting, appropriate trees species should be done in the enclosure to ensure that entire animal enclosure is not visible to

the visitors from any of the viewing points. The animal should be seen to the visitors in near natural settings.

Making the animal enclosures safe for animals, animal keepers and the visitors

(a) Enclosure Barrier

Barrier of every enclosure should be of a design, dimension and material that can effectively contain the animals housed within the enclosure and safeguard against any animal escaping from the enclosure. Due care should also be taken to ensure that the shutters and doors fitted in the enclosure, kraal and feeding cell are of such material and design that these can not be broken/ opened by the animals housed in the enclosure. The barriers of all the enclosures, except the animal viewing area could comprise of natural cliffs (if any), wall, glass, power fence or chain-link fence, etc. of prescribed dimensions. However, in animal exhibit enclosures, provision of a moat could be made in the animal viewing area, to facilitate the visitors in having an unobstructed view of the animals without getting close to them. Wet moats shall normally not be used as enclosure barrier for the viewing area except in case of water loving animals. The total land area under moat should not exceed 20% of the land area of the enclosure. The indicative design type and dimensions of enclosure barrier are given in Appendix III to these guidelines.

(b) Other safeguards :

- (i) Due care should be taken to ensure that no power line/ power cable passes over any animal enclosure.
- (ii) Enclosure barrier should be erected/ constructed at a safe distance from such trees that can aid the animals to escape from the enclosure or damage the enclosure barrier.
- (iii) Where walls are used as enclosure barriers, due care should be taken to plaster the same with such proportion of cement mix that the plaster does not wither away leaving gaps that could be used by the animal as holds for escaping out of the enclosure.
- (iv) Live wire overhangs or chainlink should be used to prevent the animals from escaping out of the enclosure.
- (v) Water pipelines and sanitary fittings should be fixed within the

enclosure in such a manner that the same can not be used by the animal as aid to escape from the enclosures.

- (vi) Adequately deep foundation to be provided for enclosure barrier housing the burrowing species.
- (vii) Attention should be given to different barrier materials, fixtures, shutters etc. to see that they are safe and cannot be broken or cause injuries to animals.

Specialised Animal Displays

1. Walk Through Animal Enclosures

- (i) The area open to access by visitors should be clearly delineated and demarcated in such a manner that animals are not impacted by the presence of visitors and that animals are not in a position to injure the visitors.
- (ii) Visitors should be allowed to enter the walk through animal enclosure in controlled groups under proper supervision. Visitors must be adequately informed about the dos' and don'ts, while in the enclosure.
- (iii) All walk through exhibits should have double entry gates and double exit gates to safeguard against any animal from escaping out of the enclosure.
- (iv) Every visitor should be made to walk through a disinfectant footbath before entering the walk through enclosure.
- (v) The carrying capacity of the visitors in the walk through enclosure should be clearly defined and at no point of time the visitor number should exceed the same.

2. Drive Through Enclosures (Safaries)

- (i) Entry and exit to every drive through enclosure should be through a system of double gates. There should be sufficient space in between the two gates, to allow the gates to be securely locked at the front and the rear of every vehicle that enters the drive through enclosure.
- (ii) The gates for drive through enclosure should be so designed and located that the person operating the gates can see and ensure that no animal is standing near the gate at that time when the gate is being opened for the vehicle getting into the enclosure.

- (iii) Arrangement should be in place to ensure that the two gates provided under the double gate entry and exit system do not open simultaneously. The 2nd gate should open when the first gate has been securely locked.
- (iv) Design of the double gates should be such that the same can be operated conveniently by one person only.
- (v) Visitors should be allowed to enter in the enclosure of large cats and Bears only in closed top vehicle and the windows and glasses of the vehicle should be kept securely locked during the period the vehicle remains in the drive through enclosure.
- (vi) Supervisory staff accompanying the vehicle should be armed with appropriate weapons and communication equipment and should be authorized to use the same effectively, if required to do so, to save the visitor from attack by the animals.
- (vii) Trained personnel shall be suitably positioned over the entire drive through enclosure, on appropriately designed watch towers to keep a watch on the movement of vehicles, the animals and intruders, if any and to provide necessary guidance to gate staff, the vehicle drivers and the animal keepers in carrying out the jobs assigned to them safely and effectively.
- (viii) A rescue vehicle capable of affecting recovery of the vehicles from the drive through enclosure should always be available at the command of supervisory staff as long as there are any vehicles within the drive through enclosures.
- (ix) The layout of roads in the drive through enclosure should be such that the visitors can be shown all the highlights of the enclosure without disturbing the animals in their withdrawal areas.

3. Composite Animal Enclosure

Composite animal enclosures by and large are quite attractive and are quite in vogue these days. The zoo operators, while designing any composite enclosure shall take due care to ensure that:

- (a) Species housed in composite enclosure are compatible in nature.
- (b) There is no competition between the species for utilization of space, food and natural resources.
- (c) The species do not inter-breed.

4. Elephant Enclosures

The elephants being voracious eaters and producers of extraordinary amount of solid wastes can not be maintained aesthetically in the display enclosures. Presence of 'mahaouts and chara cutters' makes the issue of aesthetic display further complicated. It would therefore be desirable to leave elephants in display enclosure without chain for limited period of 6 to 8 hours. For rest of the time, the elephants should be kept in elephant houses of appropriate designs in off the display areas at isolated places. Elephants can be loosely chained with spikeless chains for their own safety. However, suitable padding should also be provided on their legs to safeguard against injuries being caused on account of chaining in twilight.

Schedule 4 (5-6)

Environmental Enrichment

Any wild animal living free in nature carries out wide range of activities viz foraging, exploration, territorial patrolling, marking territorial boundaries, avoiding predators, wallowing, climbing, burrowing and seeking mates etc. Its social behaviour includes parenting, courtship and other interactive activities viz. chasing each other and indulging in mock fights. All these activities involve constant alertness of visual, olfactory and adulatory stimuli. Even during the inactivity period in wild, the animals are involved in setting up and construction of secure refuges such as nests, burrows, dens, searching tree holes etc.

Under the zoo environment, the environmental complexity is missing and the animal has to make little effort for getting its food and security. The availability of space for movement and other physical activities like digging, burrowing or nesting, is also limited and the animals can no longer express their natural behaviour. Lack of stimuli to take up any physical activity (absence of hunger and insecurity) and continued stress due to non-fulfilment of natural behaviour leads to development of aberrant/ stereotypic behaviour in the animals, which make them look pathetic.

There is no denying the fact that it is neither feasible nor practical to simulate the conditions of wild in the zoo, still the zoo operators can provide the zoo animals ample opportunities to express their natural behaviour through imaginative enclosure designing and planned enrichment. The technical help of behavioural biologists may be obtained in developing the appropriate enrichment plan for the wild animals.

Important components of Environmental Enrichment of animal enclosures are briefly summarized below :

Behavioural Enrichment :

- (i) Keep animals in compatible social groups. Provide adequate three dimensional space for exercising the normal movement behaviour patterns i.e. walking, flying and climbing.
- (ii) Provide suitable substrate to facilitate the animals to satisfy their digging, burrowing and exploratory instincts.
- (iii) Provide suitable trees, shrubs and bushes in the enclosures to provide the animals opportunities for climbing, swinging, feeding, clawing, playing, rubbing the antlers, etc. Trees take substantial time in growing to required sizes, during the interim period, appropriately sized logs/ branches of trees could be used to meet the behavioural needs of the animals. There should be provision of alternative enclosures for the ungulates living in larger social groups, bears and primates so that the animals could be shifted from one enclosure to the other to facilitate recovery of vegetation.
- (iv) Burrows/ dens could also be constructed to facilitate the animals to hibernate or to take shelter during extreme weather conditions.
- (v) Plant grass and reeds to provide cover area for the animals.
- (vi) Fix mud pots, tree hollows, bamboo baskets to meet nesting and egg laying by birds.

Remarks :

Use of nylon ropes, tyres, and swings should normally be avoided because these do not add to the over all aesthetics and natural environment of the enclosure. These should be used as last resort, when functional requirement of animal can not be met with natural enrichment materials.

Schedule 4 (9)

Providing effective Stand off Barriers

Minimum height and distance of stand off barriers from the enclosure barriers should be as follows :

S. No.	Barrier type	Height	Distance from the barrier
1.	A long moated viewing barrier	75 cm	75 cm
2.	A long chain-link barrier	75 cm	150 cm

Space between the stand off barriers and enclosure barriers shall be planted with thorny evergreen hedges to safeguard against the visitors crossing the stand off barriers.

Schedule 4 (10)

Appropriate educational signage

- (i) Signage boards should be made of weather proof, durable, tough and strong material which can last for reasonably long durations and can be reused and repainted.
- (ii) The signboards should be attractive but due care should be taken to ensure that this should not obstruct animal viewing, legible from reasonable distance and should highlight details about the biology, behaviour, distribution and conservation status of the species. Interesting informations like animal diet and longevity should also be highlighted.
- (iii) Signboards should not be loaded with too many informations. Signboards should be understandable to a child/ average literate person.
- (iv) Appropriate graphic illustrations should be provided on sign boards to explain ecological linkages, taxonomical relationships and evolution of species.
- (v) Signage should also provide information on the conservation efforts being made in the country and the role being played by zoos in this regard.
- (vi) Signage should be designed in such a way that they catch the attention of the visitors and the visitors are tempted to read them.
- (vii) Negative signages like the animal being cattle lifter/ man eater should not be displayed as these dilute the message of conservation.
- (viii) Signages should be monitored and evaluated regularly and updated constantly.

- (ix) Signages should be fixed at prominent places at such heights that these can be read conveniently. Avoid fixing signages on trees inside the animal enclosure or along the side of hedge planted between the stand off barrier and the moat wall. Sign boards fixed near the animal viewing line of visitors look quite attractive.
- (x) Avoid use of gaudy colours for preparation of signage. Use such colours that merge with animal exhibit environment.

Interpretation facilities

Animal - habitat relationship, population dynamics, animal adaptations, animal evolution, ecological role of animals are some of the important areas for interpretation. Interactive devices to get some feel of main strengths of various species, history of animal management in zoos through obsolete animal exhibits- may also interest the visitors.

Nature trails to educate the visitors on local species of fauna and flora in well managed hedge and tree groves and water bodies can help in providing the visitors insight to nature and generate empathy for wildlife. Recorded commentary on different facts about animals in the vehicle used for different safari's can be excellent educational material. Deployment of trained zoo guides for use of visitor groups shall be quite effective

Rule 10, Schedule 5 (1-10) Upkeep and healthcare of animals

Schedule 5 (1)

Viable groups of animal collection

- (1) zoo operators should keep a close watch on the animals housed in every enclosure and any animal that is unduly aggressive and causing grievous injuries to other animals and its continuance at the enclosure is risky to the life of other animals of the enclosure shall be removed from the group/ herd at the earliest and taken to isolation enclosures in off the display area and kept under close observation.
- (2) Efforts to reintroduce the animal in the original herd/ group, alternative herd/ group should be made as soon as the animal has mellowed down, taking adequate safety measures/ precautions.

Explanation Reproductive behaviour of various species should be studied and understood thoroughly so that it is not confused with

aggressive behaviour and the animals separated, marring the chances of future procreation of the species.

- (3) zoo operators should ensure that the number of animals housed in every enclosure is within the carrying capacity of the enclosure. Wherever, it is found that the number of the animals in the enclosure has exceeded the carrying capacity, measures to shift the excessive animals to alternative enclosure should be taken with due safeguards to ensure that the animals already breeding shall not be removed from the original enclosures. For this purpose, it is always preferable to move sub adult males and females from the group/ herd.

Schedule 5 (2)

Quality of food for animals

- (1) Feed supplied to animals should not only meet the nutritional requirements but should also meet the functional need of animals.
- (2) The feed should be hygienic and of high quality.
- (3) Appropriate food supplements should be added in the animal feeds to avoid nutritional deficiencies or specific needs.
- (4) Larger cat should be provided meat with bones. Occasionally, they should be allowed to feed on full carcasses, if feasible. Pieces of liver should always be added to the meat supplied to the carnivores.
- (5) Ungulates should be provided with tree fodder, wherever feasible in addition to other fodders. Salt licks should also be provided at appropriate places in their enclosures.

Schedule 5 (3)

Placement and timing of feeding

- (1) Mammalian species should be provided feed in the feeding cells/ feeding kraals on a sterile surface. However, the animals should not be required to stay on a hard surface beyond the feeding time.
- (2) Feed for the animals living in social groups should be sub divided and placed at as many locations as necessary to safeguard against weak and young animals remaining under nourished.

- (3) For satisfying the behavioural instincts, the feed for bears and primates could be hidden in log hollows, burrows, etc.
- (4) Hidden scattered feed dispensation devices could be used wherever necessary.

Timing of Feeding

- (1) Larger animals which are fed only once a day should be provided their full diet towards the closing hours of the zoo for the visitors.
- (2) Intermittent feeding in small quantities could be done to manage and keep the animals active.

Schedule 5 (4)

Feeding Cells and Kraals

- (i) Every animal enclosure would be provided with feeding cells and feeding kraals at the farthest point from the animal viewing area. No animal would be provided feed in the main enclosure.
- (ii) The design and size of the feeding cells and feeding kraals should be such that these do not stand out and affect the natural environment of the enclosure. To achieve this goal the feeding cell should be constructed in depressed ground, whenever feasible, in other cases feeding cells and kraals should be screened through plantations of appropriate species.
- (iii) All the feeding kraals should have pucca floors and should be covered from the top. Approach to the service door of the feeding kraal should not be through the main enclosure. These should be serviced through a service gallery which is so designed that adequate natural light and aeration is maintained in the gallery.
- (iv) Animals should be in the feeding cells/ kraals/ indoor enclosures only for such duration as it is absolutely necessary for ensuring better health, physical comfort and security of the animal. The number and the area of feeding kraals should be decided on the basis of the number of animals housed in the enclosure.

Schedule 5 (6-9)

General behaviour and healthcare

Veterinary care/ treatment to any animal should be provided causing minimum possible stress to it. With this objective, every enclosure should have inbuilt

facilities for restraining/ examining and treating the animal at the enclosure itself. No animal should be shifted from its enclosure to the treatment ward in the hospital/ isolation ward unless its continuance at the enclosure involves risk of other animals being infected by the disease or the sick animal requires intensive care/ supervision round the clock. The animal so removed from the enclosure should be brought back to the enclosure and introduced in to its social group/ herd as soon as it has recovered from the disease and is fit to fend for itself in the group. Keeping the animals for long durations away from the social group/ herd may lead to problems at the time of reintroduction of the animal in the group/ herd.

Schedule 5 (10)

Record Keeping

Every zoo should have mechanism for recording of observations regarding social, biological and reproductive behaviour and health status of zoo animals including preventive and curative treatment provided, birth and care of young ones, sicknesses and mortalities as per details given below:-

Keeper's Diary

The Keepers/ In-charges of all sections or beats under the Animal Section of a zoo should maintain keeper's diary in the format as Annexed IV-A, giving animal/ specie-wise details of all the important events and activities pertaining to his section/ beat. The format should be in vernacular language and should be available with the Keeper in the shape of printed ledger register with serial numbered pages. There should be 2 pages with each serial number so that one copy of the report also remains in ledger register after submission of the second copy to the Incharge, Animal Section daily through his supervising officer before submission the supervisor should also record own comment on the Keeper's Diary.

Daily Report

Curator (Animal)/ Incharge, Animal Section of zoo should compile the important aspects of the reports submitted by the Keepers of the different sections/ beats (Keepers diary) in the format as given in Annexure IV-B and submit the same daily within two hours of opening of the zoo to the Director through the Veterinary Officer. The Incharge, Animal Section; Veterinary Officer and Director of the zoo shall record their observations/ comments in the daily report and take the required action accordingly. Copy of the daily report will go back to the Incharge, Animal Section the same day after the

biologist has made necessary entries into the Animal History Cards of the animals/ species reported upon.

Animal History Cards

Animal history cards of each animal which is identifiable shall be maintained by the Biologist (or the Education Officer as the case may be) in the format at Annexure-IVC. The animal history cards shall be maintained as permanent record. For the species where the individuals are not identifiable, the animal history cards should also be maintained herd/ group/ species-wise giving important events as a compendium of information for future use.

Studbook

Studbook of all the animals of endangered species including those born under the planned conservation breeding programme shall be maintained in the format at Annexure-IVD by the biologists of the zoos and National Studbook Keepers of each identified species.

Treatment Card

Individual treatment card for each identifiable animal should be initiated and maintained by the zoo veterinarian in the format at Annexure-IV E, giving date-wise observations made and treatment given to the animal through out its life. The treatment card shall always remain at the place where the animal is housed/ kept. For the individuals which are not identifiable, the treatment cards should also be initiated and maintained species wise. The copies of the same should also be kept at the place where the individual is housed/ kept along with other members of the species.

Remarks- The zoos should endeavor to acquire and become members of the National/International Record Keeping System/software like International Species Information System (ISIS)/Zoological Information Management System (ZIMS) for scientific management of zoo populations.

Rule 10, Schedule 6 (1-6) Veterinary & infrastructure facilities:

Schedule 6 (4)

Tranquilization of animals in zoos

Tranquilization of zoo animals is a highly specialized procedure that requires thorough knowledge about the chemistry and physiological effects of the

tranquilizing drugs on various species of animals, the reversibility of the drug effect and the specific antidotes of the drug. The person taking up the responsibility of tranquilizing any animal should also be fully conversant with the health details, behaviour and the temperament of the animal. In view of the facts stated above, tranquilization of zoo animals would not be resorted to where the traditional methods of restraining the animal viz. squeeze cage, luring the animal into a feeding cell/ appropriate sized cage are likely to yield the desired results, without undue stress to the animals.

The circumstances under which urgent tranquilization become absolute necessity are:

- (i) Dangerous animals escaping from the enclosure
- (ii) Capturing the animal which is posing threat to the life of some other animals/ people
- (iii) Carrying out surgical operations on seriously injured wounded animals.
- (iv) Close examination and treatment of sick animals.

The decision for tranquilization of such animals can be taken by the veterinary officer/ animal curator of the zoo. The Director of the zoo shall be kept informed on such decisions. The tranquilization team will be lead by a person having adequate experience in tranquilization of animals and the tranquilization shall be carried out under the direct supervision of a veterinary doctor.

Planned tranquilization involving capture of animals for translocation, collection of blood and semen for diagnostic purposes etc. shall be carried out only after getting written permission of the Director of the zoo and subject to such safeguards and conditions as may be prescribed by him.

The normal safeguards during the tranquilization shall be :

- (1) Not more than one animal will be tranquilized at a time. Second animal should be tranquilized only after the animal tranquilized earlier has fully recovered.
- (2) Tranquilization will be carried out by a team comprising of 3-4 persons. Visitors and the other zoo staff, who are not involved in the operation, should not be permitted to be present at the time of tranquilization.

- (3) Tranquilization of any animal shall be done in a manner that the animal is not unduly stressed by way of chasing and making noise.
- (4) All precautions and safeguards given in the literature supplied with the drugs should be followed.
- (5) The physical parameters like body temperature, heart beat, muscle reflexes, eyelid movement, and respiratory rates should be constantly monitored till the animal has fully recovered. Necessary mitigative measures would be taken as soon as some abnormalities in these parameters are observed.
- (6) It shall be ensured that the animal during the recovery phase is kept in a position that the chances of arrest of heart beat and the saliva/ food particles getting into lungs are totally ruled out.
- (7) The animal shall be kept under close observation for at least 24 hours after its revival.
- (8) It is advisable to tranquilize the animal during the cooler parts of the day.
- (9) In case the body temperature is high, the body should be covered with wet cloth.
- (10) The eyes should be covered to prevent exposure to bright light.
- (11) Tranquilization should not be carried out in an area close to a water body to prevent drowning of animal during tranquilization.
- (12) Before tranquilization operation, the prescribed human antidote should be loaded and kept with another person for immediate administration when such need arises, due to the narcotic drugs contact with human body.

Schedule 6 (6)

Linkages with eminent institutions/ organizations working in the field of wild animal healthcare

All the recognized zoos in India have been provided with basic animal healthcare facilities as per the category of the zoo and its animal collection. This should suffice for day-to-day management of zoo and healthcare of the animals kept there. The zoos have been asked not to acquire sophisticated and costly diagnostic equipments unless there is adequate technical manpower to operate and use the same.

Exact diagnosis of the cause of sickness in a zoo animal and providing it an

effective treatment is a very challenging task and no zoo can be self-sufficient both in term of technical expertise and diagnostic investigation facilities required for taking comprehensive healthcare of the large variety of animals housed in the zoos. It is, therefore, incumbent upon every zoo to augment its healthcare facilities by entering into agreement with local/ regional veterinary university/ college/ large veterinary hospital capable of providing appropriate scientific inputs for diagnosis of the diseases of sick animals and advice on the proposed line of treatment of the disease as well as on preventive measures to safe-guard against the recurrence of the disease. The above veterinary institutions will be providing specialized services and diagnostic facilities to the zoos for better healthcare of zoo animals. The Central Zoo Authority has also agreed to provide some financial assistance for establishment of the mechanism at the zoo/ local/ regional level.

The Central Zoo Authority has signed MoU with Indian Veterinary Research Institute, Bareilly to act as National Referral Centre to provide super specialized services and diagnostic facilities for better animal healthcare in Indian zoos. In case the zoos feel that the agreement arrived by them with the organization/ institutions within the region are not able to provide required specialized healthcare, they can approach the National Referral Centre for (a) getting baseline data on the health parameters of various species of animals (b) micro biological, bio-chemical and pathological analysis of the samples taken from live animals and histopathological and forensic examination of tissues and organs of dead animals. The National Referral Centre shall not normally be able to entertain requests for diagnosing and treating the cause of sick animals of zoos/ regional referral centres except on a request by the Central Zoo Authority to tackle the extra-ordinarily situation that cannot be effectively handled by the regional referral centres.

Constitution of Health Advisory Committee: Despite their best efforts, the Regional Referral Centres identified by the zoos can not help the zoos on dealing with sick animals on day to day basis. For dealing with this problem, every zoo should have a Health Advisory Committee comprising of experienced veterinarians with a professor of veterinary college/ eminent wildlife/ zoo veterinarian as its Chairman and the Senior Veterinary Officer of the zoo as its coordinator. The Committee would advise the zoo on all matters related with sanitation, hygiene, prophylactics, nutrition and management of sick animals. The Committee may opt any other veterinarian or specialist as and when required.

The Committee should be kept involved with the visits of the team of the

Regional Referral Centre to the zoo. It should also be taken into confidence about the implementation of the advice rendered by the Regional Referral Centre/ National Referral Centre on treatment and management of sick animals. Zoo Director and the Curator (animal) should be actively involved in the meetings of the Health Advisory Committee.

Organization of hands on training for zoo veterinarians

The Central Zoo Authority should facilitate the National Referral Centre to have hands on training of the veterinarians posted/working with the zoos at the place identified by the centre.

These trainings could be held on national or regional level with support from the Central Zoo Authority.

Rule 10, Schedule 7 (1-4) Post-mortem and disposal off carcasses of animals
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Findings of the Post-mortem conducted as prescribed under Schedule 7 shall be recorded in the format at **Annexure-V**. The report should be preserved atleast for 6 years.

Rule 10, Schedule 8 (1) Euthanasia of a zoo animal

Decision to euthanize any animal shall be taken only on the basis of the recommendations of the committee constituted for the purpose by the Chief Wildlife Warden of the State on the recommendations from the Director of the zoo to the effect that:-

- (1) The animal is terminally ill and is in such state of agony and pain that it is cruel to keep it alive.
- (2) The animal is suffering from incurable diseases of infectious nature and keeping the animal alive poses a serious threat to the health of other animals at the zoo.

The Committee shall comprise of 2 veterinarians (inclusive of zoo veterinarians) and a representative from the local Society of Prevention of Cruelty to Animals.

Remarks :

Euthanising any zoo animal in contravention of these guidelines would tantamount to illegal hunting under Section 9 of Wild Life (Protection) Act, 1972 read with Sub Section (16) a of Section 2 of the Act.

Rule 10, Schedule 9 (1-12) Acquisition and breeding of animals

Schedule 9 (1-5)

Exchange of animals

Central Zoo Authority shall grant approval for exchange of animals of Schedule I and II subject to following norms and safeguards :

- (i) All the exchange proposals for zoo animals shall be decided on the basis of information available in the studbooks about the pedigree of the animal and its likely contribution in maintaining the heterozygosity level of the species in the breeding programme. The order of priority for allocating the animals under the planned coordinated conservation breeding programme shall be as follows:
 - i. Coordinating zoo
 - ii. Participating Indian zoo
 - iii. Participating foreign zoo
 - iv. Other Indian zoos having appropriate upkeep and healthcare facilities and required technical expertise.
- (ii) Exchange proposals for the species which are not candidate for planned breeding programme shall also be approved having due regard to strengthening of the breeding gene pool for the planned breeding programmes.
- (iii) Gift of animals to zoos outside the country shall also be made having due regard to the interests of conservation breeding and long term conservation of wildlife.
- (iv) The zoos having single male/ unpaired male should spare the same to provide mates to unpaired females housed at other zoos as directed by the Central Zoo Authority. The recipient zoo shall bear the cost of crating and transportation of the animals.
- (v) The Central Zoo Authority while approving other exchange proposals shall give preference to such zoos who are complying with the conditions stipulated at the time of grant of recognition and the provision of Recognition of Zoo Rules, and having housing and upkeep facilities and the climate congenial for the long term survival of the animals proposed to be acquired by the zoo.

The detailed guidelines in this regard are as in Annexure – VI A. The format in which the proposals for exchange of animals are to be submitted by the zoos to the Central Zoo Authority is at Annexure VI B.

The detailed guidelines for transport of captive animals from one place to another are at Annexure – VI C.

Schedule 9 (6-8)

Conservation Breeding

Conservation breeding of identified endangered species shall be taken up in India and the Central Zoo Authority shall coordinate conservation breeding programmes of identified critically endangered species in Indian Zoos at national level with following objectives:

- (i) Developing physically, genetically and behaviourally viable populations of healthy animals of identified species for the purpose of display in zoos.
 - (ii) Developing physically, genetically and behaviourally viable populations of healthy animals to act as insurance and raise stock for rehabilitating them in wild as and when it is appropriate and desirable.
2. The breeding should be planned in such a manner that the animals bred as part of the conservation breeding programme should not have less than desirable heterozygosity (genetic variation) level in the 10th generation.
 3. The conservation breeding programme should preferably start with minimum 6 and preferably 20 founders, which are unrelated and have high heterozygosity. The founders should preferably be of wild origin or of known lineage. Where on account of restricted availability it is not possible to have 25 founders, the programme could be started with fewer animals. Additional founders could be added to the programme in subsequent years, as and when available.
 4. For retaining maximum possible heterozygosity, it should be ensured that all founder animals should be represented in each generation equally and no interbreeding is permitted among the progeny of same founder. This would require that each animal born as part of the programme is appropriately marked and sent to the identified zoo for breeding with the progeny of the other founders.

It should be ensured throughout the breeding programme that all the founders are equally represented in the progeny. Surplus or spillover stock can be used for display purposes or released into wild on pilot project basis to develop necessary expertise on reintroduction of animals into the wild.

5. Since loss of heterozygosity with each generation is inevitable, it is important that the target effective population is reached in minimum possible generation. This would necessitate that reproductive potential of every animal in the programme is fully utilized and no founder animal remain unproductive.

Remarks: The effective population size is dependent on the number of males and females, available for breeding purposes. The thumb rule for determining the effective population size is:–

Effective population size = $4 (M \times F) / (M + F)$

M= Male and F= Female

Consultation with National Referral Centre and Laboratory for Conservation of Endangered Species (LaCONES)

For initiating the conservation breeding programme, each founder animal should be thoroughly screened for its physical health, preferably under the supervision of the National Referral Centre. Appropriate disease prevention safe-guards shall be drawn and strictly complied with.

For genetic health analysis and for reproduction potential evaluation, help of LaCONES shall be taken before induction of any founder animal into the breeding programme. The National Referral Centre as well as LaCONES should continuously be kept involved into the breeding programme. In case of breeding failure detailed reproductive examination could be conducted and if necessary assisted reproduction methods could be used.

Marking of the animals

Every animal which is part of the Conservation Breeding Programme shall be given an identification number and the same would be marked on it in a manner that it remains permanently on the body of the animal. The details guidelines are annexed at Annexure VII.

Record keeping

Individual animal history card for each animal would be maintained giving details of pedigree, date of birth, identification mark, studbook number in the format prescribed by the Central Zoo Authority. Zoos having the individuals which are part of the breeding programme will report every birth and death of the animal to the National Studbook Keeper and the Central Zoo Authority within 24 hours of the same. The National Studbook Keeper shall give national studbook number to each individual under the programme. The National Studbook Keeper (coordinating zoo) of the species would act as the species coordinator and would issue guidance to the respective zoos regarding the destination each animal is to be sent i.e. for purposes of breeding or display. The species coordinator would also decide as to when particular animal is to be taken out of the breeding programme. The Central Zoo Authority would also be consulted regularly while making decisions mentioned above.

The National Studbook Keepers (Species Co-coordinators) of the species identified to be part of Global Species Management Plan (GSMP) of the World Association of Zoos & Aquariums (WAZA branding) shall be touch with the International Studbook Keeper of the species and arrange for International Studbook Numbers of the identified individual animals and exchange of other scientific details. National Studbook Keeper will be the link between the concerned zoo and International Studbook Keeper of the species.

Price Tags

No zoo will ask for any costs/ animals in exchange for sending any animal for the programme to the other zoos in compliance of the direction of the Central Zoo Authority on the basis of National Studbook Keeper's/ Species Coordinator's recommendation.

Schedule 9 (9)

Population Control Measures

The zoo operator should ensure that the number of each species housed in the zoo remains within the limit stipulated in the collection plans of the zoo and the carrying capacity of the housing facilities available with the zoo.

In the interest of operational efficiency, better management and optimal utilization of resources, number of animals of various species housed in the zoo should not exceed the number indicated below :

Category of zoo	Optimum number of animals to be housed in a zoo			
	Tiger	Leopard	Bear	Ungulates/Herbivores of each species
Large	10	10	10	20
Medium	6	6	6	12
Small	4	4	4	10

Schedule 9 (10)

Safeguards against animals escaping from the animal enclosures/ zoo

- (1) The perimeter wall/ fence of the zoo/ enclosure barriers should be inspected regularly for identifying the weak points/ likely breaches/ unnoticed designing defects which could be used by the animals to escape from the enclosure/ zoo and getting the same rectified and repaired on top priority.
- (2) The trees standing close to the barrier/ perimeter wall should be regularly pruned and lopped as may be necessary to prevent escape of animals from the enclosure/ zoo.
- (3) Pieces of logs, poles that can be used by animals as aid to escape should not be allowed to remain lying in the enclosure.
- (4) Round the clock security should be maintained to prevent the intruders entering the zoo and damaging the enclosure barriers, harm the animals in zoo and damage/ steal other valuable property.

Schedule 9 (11-12)

Release of zoo animals into the wild

Release of genetically, biologically and behaviourally viable zoo bred animals in an objective and planned manner in accordance with a well conceived guidelines is an important tool for conservation of wildlife. However, unplanned release of zoo bred animals of unknown pedigree and genetic make up and poor health status often lead to disastrous consequences. In this background strict adherence to the guidelines while releasing any zoo bred/ captive bred animals into the wild is crucial.

Objectives of release of zoo bred/ captive bred animals into the wild

1. Augmenting the depleting number of endangered species in any ecosystem.
2. Reintroducing the species in an area which was part of its historical range, from which the species has disappeared or become extinct due to various factors.
3. Introduction of the species in areas outside its recorded range of distribution, in the habitat that have the potential to hold and support the species on a sustained basis without becoming a vermin/ pest.
4. Experimental releases for developing expertise in rehabilitating the zoo bred/ captive bred animals in the wild and preparing detailed protocol for planned release of the species for any of above objectives.

Pre-requisites for a successful release programme

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. Capacity of the animals that are being released to adopt itself in the wild and fend itself successfully.
3. Mitigation/ redressal of the factors that have been responsible for the decline 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 programme to the 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 programme and provide finances and other resources on a sustained basis for various phases of the release programme.

Strategy for successful release of zoo bred/ captive bred animals in the wild

A. Preparatory phase

I. Biological

- (i) Assessment of taxonomic status of the animals earmarked for the release and ensuring that they pertain to the same species/race that is naturally occurring/ occurred in the area.
- (ii) Assessment of the critical needs of the species to be released including habitat preferences, intra specific variations and adaptations to the local ecological conditions, social behaviour and group dynamics, home range shelter and food requirements, foraging and feeding behaviour, predators and diseases etc. Over all to have and analyse a firm knowledge of the natural history of the species to be released.
- (iii) Species if any, that has filled in the void created by the extinction of the species from the area and effect of the release on the status of the population of that species.
- (iv) Determining the optimal number of animals that can be released each year and most appropriate period for the release.
- (v) 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.

II. Choice of the release site

- (i) The site of release should have an 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 rule no releases of zoo bred/captive animals should be done in adequately stocked habitat.
- (ii) The area of release should have assured long term protection against all the factors that can inhibit the future propagation and healthy growth of the population of species released.

III. Suitability of the stock for release

- (i) 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.

- (ii) Animals selected for the release should be thoroughly screened for their biological, behavioural 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.

Release of the zoo bred/ captive bred animals in the wild

The animals earmarked for the release should be initially shifted to facility specially created 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, through experts if so required. They should be released in the wild when their behaviour becomes comparable with their wild counterpart.

Socio-economic-Legal Requirements

- (i) Socio-Economic studies should be made to assess the impacts, costs and benefits of the proposed release to the local population.
- (ii) Thorough assessment of the attitude of the local people to the proposed release project should be made and their apprehension if any, should be properly redressed. No release of animals in wild should be made in the wild against the wishes of the local people.
- (iii) Public awareness programme about the benefits of proposed release should be made both through print media and electronic media.

General

- (i) The execution of all the phases of the release programme should be carried out under the supervision of multi disciplinary team of experts.
- (ii) Long term and short term indicators for quantifying the success of the release programme should be identified.
- (iii) 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.
- (iv) Necessary vaccinations against local endemic and epidemic diseases should be given to all the livestock that is likely to share the habitat with the released species.
- (v) Transport plan for the animals should be so prepared and executed that no mortalities take place during the transport.

- (vi) Appropriate orientation and training programmes should be organized for all the persons involved in the release programme.

Post release activities

- (i) Continued demographic, ecological and behavioural studies on released animals should be done both through direct (telemetry/ monitoring of movements) and indirect methods (information provided by local people).
- (ii) 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 facilities in case the intervention do not succeed despite all efforts.
- (iii) Habitat protection/restoration and enrichment should be done wherever necessary.
- (iv) Continued evaluation of the success of the programme with reference to identified parameters and results should be published in scientific journals/ popular literature.

Rule 10, Schedule 10

Research Activities

1. Every zoo shall make arrangement for recording in writing, the detailed observations about the biological behaviour, population dynamics and veterinary care of the animals exhibited, so that a detailed database could be developed. The database shall be exchanged with other zoos as well as with Central Zoo Authority.
2. Every zoo shall make arrangements for meticulous recording of the physical activity of the animals viz. infighting, inter group responses, feeding, mating and reproductive behaviour. Detailed record of the health of the young ones including congenital abnormalities and mortalities shall also be kept. The data so collected shall be shared with identified institutions for detailed analysis and evolving the strategies for increasing the longevity, maintaining the genetic and behavioural viability and enhancing the reproductive potential of endangered species housed in zoos.
3. The data regarding the healthcare and nutrition provided to the animals shall also be regularly monitored and collated for assessing the quality of life being provided to the zoo animals. Data regarding the quantity of

feed consumed by the animals shall also be compiled. The aforesaid data shall be shared with National Referral Centre as per the direction of the Central Zoo Authority for improving the veterinary protocols and developing new feeding schedules.

4. The zoos shall also endeavour to compile the data regarding the efficacy of the drugs and vaccines administered to the animals and share it with the National Referral Centre and other eminent institutions working in the field to get their inputs regarding more effective drugs and vaccines.
5. The zoo shall continue to endeavour for identifying the efficacious and easily implementable methods for controlling the population of prolifically breeding species such as putting implants and hormone therapy and use of other suitable methods.
6. Each zoo shall endeavour to keep a detailed record of the effectiveness of the animal enclosures in providing the animal's desired quality of life and the satisfaction provided to the visitors in getting unobstructed view of the animals. The observations made by visitors in this regard should also be compiled. The data so collected shall be analysed and made available to the Central zoo Authority for upgrading the designs of the enclosures.
7. Every zoo shall also keep the record of the quantity of water, electricity and other sources of energy being utilized in upkeep and maintenance of the animals of various species. The data shall also be shared with the Central Zoo Authority to enable them to evolve a strategy for optimum utilization of resources.
8. All zoo personnel shall endeavor to publish their scientific observations on different aspects of zoo/animal management in the relevant local/ national/ international journals and periodicals for dissemination and upgradation of existing knowledge on ex-situ conservation techniques.

Small Grant Fellowships - for initiating Research Activities at zoo Level

Due to lack of technical personnel in zoos and there has not been much progress towards basic and applied research in the field of ex-situ conservation and scientific management of animals. Though lot of scientific information is available with the zoos, yet this is not being utilized properly due to lack of proper analysis and inference. There are many issues which can be addressed locally at the zoo level, provided proper scientific/technical help are provided to the zoos, so that they can meet the desired objectives of

complementing the in-situ conservation efforts as enshrined in the National Zoo Policy.

The Central Zoo Authority provides grant for local need based zoo research projects in the field of ex-situ conservation and scientific management of animals in Indian zoos. The zoos may appoint fresh post graduates of the field of wildlife science, veterinary science, zoology and botany to work in project mode on the identified areas of research.

The Ministry of Environment & Forests also gives fellowships for carrying out research on wildlife namely Salim Ali fellowship for carrying out studies on birds and Kailash Sankhala Award for carrying out studies on wild animals. The zoos should encourage their staff to take advantage of these schemes, and carryout research on ex-situ conservation of wildlife.

Detailed proforma for applying for Small Grant Fellowship is placed at Annexure - VIII

Rule 11 Maintenance of Records & Submission of Inventory

Every zoo shall maintain an inventory register for all the animals in stock. Separate set of pages should be assigned to different animal species. Any change in number by acquisition, birth, death or disposal should immediately be made in the inventory register. Annual and quarterly inventory reports of the animals in the zoo as prescribed shall be submitted to the Central Zoo Authority in the formats given at Annexure IX.

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**Guidelines for establishment
of new zoo under Section
38H (1A) of the Wild Life
(Protection) Act, 1972**

6. Guidelines for establishment of new zoo under Section 38H (1A) of the Wild Life (Protection) Act, 1972

The Justification for continuance of existing zoos and establishment of new zoos lies in their capacity to develop self-sustaining and genetically and behaviourally viable populations of animals pertaining to endangered species in the wild, for use as gene pool to be used for long-term conservation of these species and to muster support of the zoo visitors in the national efforts for conservation of wildlife. It is well established that the potential of the zoos to discharge the expected role as mentioned above is directly linked to the presence of dedicated scientific staff that has the requisite skills in various aspects of planning and management and the availability of resources necessary for maintaining the highest standards of animal housing, display, upkeep and healthcare of the animals housed their in. With a view to provide the desired direction and thrust to zoos of the country, the Central Government has through amendment of the Wild Life (Protection) Act, 1972 and notification of Recognition of Zoo Rules prescribed minimum standards and norms for housing , upkeep and healthcare of animals housed in the zoos and set up a Central Zoo Authority to oversee the operation of the zoos in the country and to provide technical and other assistance to the zoos for achieving the prescribed standards and norms for animal housing, upkeep and healthcare. However, the endeavour of the Central Government to bring a qualitative improvement in the management has not yielded the desired results because of the fact that most of the zoo operators still continue to perceive zoos as adhoc animal collections maintained for public recreation. There is little awareness among the general public about the role of zoos as centres for conservation of wildlife. As a result, requisite technical manpower and necessary equipments for carrying out the management of the zoos in a planned and scientific manner are not made available. Many times getting adequate feed for the animals and providing proper upkeep and healthcare also becomes a challenging task on account of serious resource constraints being faced by the zoos. Such unplanned and sub-standard zoos are not only counter productive to the cause of conservation but also paints a very poor image of the zoos of the country.

Surprisingly proposals for establishment of new zoos continue to be developed taking little care to ensure adequate inputs for proper planning, zoo designing, construction and operation of the zoo, often leading to further impoverishment of the existing zoos.

Being concerned with the state of management of zoos in the country Hon'ble Supreme Court of India, vide their order dated 27.11.2000, have directed that the State Governments and Union Territories shall not set up any new zoo without getting approval of Central Zoo Authority and order of the Hon'ble Supreme Court. A provision has also been made by the Central Government in the Wild Life (Protection) Act, 1972 to the effect that no new zoo shall be established without prior approval of the Central Zoo Authority.

The Central Government hereby makes following guidelines for grant of approval by the Central Zoo Authority for establishment of new zoos:-

1. Central Zoo Authority shall not entertain any proposal for establishment of a new zoo unless it is accompanied by a "Detailed Project Report" giving detailed appraisal of the proposed zoo site, 'mission-vision-theme' of the zoo and detailed strategy for housing, upkeep and healthcare of the animals and their display for developing amongst visitors an empathy for wild animals and motivation for supporting the national conservation efforts.
2. Central Zoo Authority shall not grant approval for a new zoo unless it is satisfied that the establishment of the zoo shall be instrumental in:-
 - (i) Providing highest standards of housing, upkeep and healthcare to significant number of animals, presently housed in sub-standard and inappropriately managed zoos.
 - (ii) Carrying out of path breaking research for developing innovative strategy for enhancing the reproductive potential, neonatal care and genetic and behavioural management of endangered species of wildlife.
 - (iii) Setting up of state of art facility on use of innovative methods of display of zoo animals that is congenial to the welfare of the animals and motivates the visitors for conservation.
3. Central Zoo Authority before granting approval for establishment of a new zoo shall satisfy itself:-
 - (i) that zoo site has adequate land of appropriate quality (free of all incumbrances, water logging, sewage and storm water drains) is available for construction of the zoo and for raising tree belts of adequate width to act as buffer against noise pollution and air pollution.

- (ii) project proponents have requisite availability of water, energy and finances on-sustained basis for construction and operation of the zoo, including payment of salary/ emoluments of technical personnel, to be required as per the provision of Recognition of Zoo Rules.
 - (iii) There is likelihood of part of operation cost of the zoo being met through revenue earned by the zoo.
 - (iv) Requisite numbers of qualified and experienced persons are available for preparing the detailed plan of the zoo and its effective execution.
 - (v) No animals from wild are proposed to be acquired for display purposes.
4. Central Zoo Authority while examining any proposal of the State Government/ Union territories for establishment of a new zoo and recommending such cases to the Hon'ble Supreme Court shall satisfy itself on following additional points:-
- (i) State Government/ Union Territory has made adequate provisions in its budget to meet the operational costs of all the existing zoos being operated by it, including the salary of zoo personnel as per standards and norms prescribed under "Recognition of Zoo Rules" and all the posts sanctioned in the budget have been duly filled.
 - (ii) All the conditions stipulated by the Central Zoo Authority at the time of grant of recognition to the zoos being operated by the State Government/ Union Territories have been fully complied with.
 - (iii) All the zoos operated by the State Government/ Union Territories, that have been refused recognition have stopped their operations and the animals housed therein have been rehabilitated appropriately.
 - (iv) No resources and professional experts from existing zoos are being re-appropriated for establishment of the new zoo.

No permission to establish a new zoo shall be granted by the Central Zoo Authority unless all the conditions stipulated in para 2, 3 & 4 have been fully satisfied.

Guidelines for grant of approval by the Central Zoo Authority for establishment of new zoo under section 38H (1A) of the Wild Life (Protection) Act, 1972

The Justification for continuance of existing zoos and establishment of new zoos lies in their capacity to develop self-sustaining and genetically and behaviourally viable populations of animals pertaining to endangered species in the wild, for use as gene pool to be used for long-term conservation of these species and to muster support of the zoo visitors in the national efforts for conservation of wildlife. It is well established that the potential of the zoos to discharge the expected role as mentioned above is directly linked to the presence of dedicated scientific staff that has the requisite skills in various aspects of planning and management and the availability of resources necessary for maintaining the highest standards of animal housing, display, upkeep and healthcare of the animals housed their in. With a view to provide the desired direction and thrust to zoos of the country, the Central Government has through amendment of the Wild Life (Protection) Act, 1972 and notification of Recognition of Zoo Rules prescribed minimum standards and norms for housing , upkeep and healthcare of animals housed in the zoos and set up a Central Zoo Authority to oversee the operation of the zoos in the country and to provide technical and other assistance to the zoos for achieving the prescribed standards and norms for animal housing, upkeep and healthcare. However, the endeavour of the Central Government to bring a qualitative improvement in the management has not yielded the desired results because of the fact that most of the zoo operators still continue to perceive zoos as adhoc animal collections maintained for public recreation. There is little awareness among the general public about the role of zoos as centres for conservation of wildlife. As a result, requisite technical manpower and necessary equipments for carrying out the management of the zoos in a planned and scientific manner are not made available. Many times getting adequate feed for the animals and providing proper upkeep and healthcare also becomes a challenging task on account of serious resource constraints being faced by the zoos. Such unplanned and sub-standard zoos are not only counter productive to the cause of conservation but also paints a very poor image of the zoos of the country.

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2. Central Zoo Authority shall not grant approval for a new zoo unless it is satisfied that the establishment of the zoo shall be instrumental in:-
 - (i) Providing highest standards of housing, upkeep and healthcare to significant number of animals, presently housed in sub-standard and inappropriately managed zoos.
 - (ii) Carrying out of path breaking research for developing innovative strategy for enhancing the reproductive potential, neonatal care and genetic and behavioural management of endangered species of wildlife.
 - (iii) Setting up of state of art facility on use of innovative methods of display of zoo animals that is congenial to the welfare of the animals and motivates the visitors for conservation.
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 - (i) that zoo site has adequate land of appropriate quality (free of all incumbrances, water logging, sewage and storm water drains) is available for construction of the zoo and for raising tree belts of adequate width to act as buffer against noise pollution and air pollution.

- (ii) project proponents have requisite availability of water, energy and finances on-sustained basis for construction and operation of the zoo, including payment of salary/emoluments of technical personnel, to be required as per the provision of Recognition of Zoo Rules.
 - (iii) There is likelihood of part of operation cost of the zoo being met through revenue earned by the zoo.
 - (iv) Requisite numbers of qualified and experienced persons are available for preparing the detailed plan of the zoo and its effective execution.
 - (v) No animals from wild are proposed to be acquired for display purposes.
4. Central Zoo Authority while examining any proposal of the State Government/ Union territories for establishment of a new zoo and recommending such cases to the Hon'ble Supreme Court shall satisfy itself on following additional points:-
- (i) State Government/ Union Territory has made adequate provisions in its budget to meet the operational costs of all the existing zoos being operated by it, including the salary of zoo personnel as per standards and norms prescribed under "Recognition of Zoo Rules" and all the posts sanctioned in the budget have been duly filled.
 - (ii) All the conditions stipulated by the Central Zoo Authority at the time of grant of recognition to the zoos being operated by the State Government/ Union Territories have been fully complied with.
 - (iii) All the zoos operated by the State Government/Union Territories, that have been refused recognition have stopped their operations and the animals housed therein have been rehabilitated appropriately.
 - (iv) No resources and professional experts from existing zoos are being re-appropriated for establishment of the new zoo.

No permission to establish a new zoo shall be granted by the Central Zoo Authority unless all the conditions stipulated in para 2, 3 & 4 have been fully satisfied.

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7

Guidelines

7 (a) (i) Guidelines for Preparation of Master Plan for long term development of zoos

Master plan of a zoo should be a comprehensive document giving a detailed road map for 20 years with a provision of review every 10 years regarding development, improvement and upgradation of the facilities and infrastructure available at the zoo and building up of the capacity for carrying out all the operations forming part of the zoo management with greater efficiency. The development of the master plan of a zoo involves following steps:-

- (i) Define the mission, vision and the conservation message of the zoo through a detailed process of consultation.
- (ii) Thoroughly inventorise and evaluate the existing infrastructure, facilities, resources and services available at the zoo and analyse the same to identify the areas of strength and weaknesses in order of priority.
- (iii) Draft a development brief and identify the priority needs and development project imperatives to address these needs.
- (iv) Use of the project imperatives for developing an implementable action plan along with estimated costs. Try to match the so developed action plan and the projected costs with the available resources and if necessary keep on repeating the process till optimal relationship among all the components of the master plan i.e. a happy marriage between the needs, opportunities, constraints, risks and rewards is achieved. The concept finally selected along with summary of other studies listed above should be submitted to the zoo operator and the Central Zoo Authority for their concurrence and approval.
- (v) Once the concept plan is approved by the concerned authorities a comprehensive master plan for the zoo should be developed in the prescribed format annexed at Annexure – I to these guidelines.

Priority areas to be given special attention during preparation of the master plan

1. Achieve the highest standards of housing and upkeep for zoo animals with a view to establish self sustaining populations of genetically and behaviourally viable animals adopting latest skills of behavioural enrichment and genetic management.
2. Planned breeding of endangered species through provision of off

the exhibit breeding enclosures of requisite specification in adequate number to accommodate the viable breeding population of endangered species.

3. Availability of requisite expertise for upkeep and healthcare of the animals of concerned species for its long-term survival.
4. Thematic display of animals in nature emersing exhibits equipped with feeding and housing facilities congenial to the species specific behaviour of the animals housed therein.
5. To assess the carrying capacity of the zoo in respect of visitors having due regard to space availability and the welfare of the animals particularly the impact through noise pollution and physical disturbance by visitors and thereby appropriate measures to limit the number of visitors within the carrying capacity.
6. Planning the visitor circulation in the zoo in such a manner that the visitors get unobstructed view of wild animals in a pollution free and natural environment.
7. Development of appropriate signages and interpretation facilities that can help the visitors in understanding the ecological linkages of nature and developing an empathy for wildlife.
8. Efficient waste disposal system and sanitation practices for maintaining hygienic and clean environment in the zoo.
9. Design and maintain appropriate public facilities and civic amenities upto the desired standards.
10. Develop elaborate and effective management plans to deal with unforeseen contingencies and natural disasters and high influx of visitors on particular days.

Tools for preparation and effective implementation of master plan

- (a) Identification of the mission for the zoo

Under the Indian conditions the appropriate mission for the zoo could be:-

- i. Compliment the national efforts in conservation of wildlife through planned coordinated conservation breeding of endangered wild animal species of the region.

- II. Develop amongst visitors an empathy for wild animals and motivate them to support the cause of conservation of wildlife.
 - III. Develop amongst the visitors an understanding about the ecological linkages with the life supporting processes of nature and the need for keeping them intact by adopting sustainable life styles and living in harmony with nature.
 - IV. Enhancing the role of zoos in conservation of wildlife through collaborative research aiming at attaining management skills for in-situ population and carrying out advocacy for protecting the wild animals and their natural habitats.
 - V. To act as Rescue Centre by receiving and keeping orphaned, seized, rescued, injured wild animals subject to availability of appropriate housing for the same.
- (b) Identification of the vision for the zoo
- Public should view the zoos as:-
- I. Scientific institutions engaged in animal welfare and conservation of wildlife
 - II. Centres of knowledge on effective techniques for maintaining healthy ambience and pollution free environment.
- (c) Conservation Message to be imparted to the zoo visitors
- I. Work for conservation of wildlife and its habitat.
 - II. Adopt sustainable life styles and live in harmony with nature.
 - III. Contain the consumptive use of natural resources within sustainable limits through reuse, recycling and refusal.

Thematic display of animals

Grouping or sequencing the animal displays for achieving any or more than one of the following objectives leads to thematic display of animals:-

- I. Facilitate the visitors to understand the biology and behaviour of the species displayed.
- II. Facilitate the visitors to understand the geographical habitat range of various species and the linkages between the long-term survival of the species with conservation of their natural habitat.

- III. Highlight the mythological and cultural significance of various species of wild animals.
- IV. Apprise the visitors of the composite and complex nature of different ecosystems.
- V. Provide the visitors an absorbing and rewarding experience at the zoo.

The themes generally adopted are:

1. Traditional Themes:-

- (a) zoo-geographic – Continent wise or region wise display
- (b) Taxanomic – Class, family and genera wise display
- (c) Behavioural – Nocturnal, aquatic, burrowing, arboreal
- (d) Mixture of the above – Based on popularity

2. Recent Concepts ---

Simulation/ replication of in-situ sites e.g. Chilka lake, Annamalai hills, Western Ghats, Aravalli Hills, Kanha meadow, Sunderban wetlands, Indian deserts, Gir forests, Shivalik Foothills, etc.

Bio-geographic grouping - High mountain fauna, riverine fauna, Mangrove fauna etc.

Eco-system display - Nilgiri fauna, Desert fauna, Wetland fauna, etc.

Replication of in-situ site and eco-system display require greater technological expertise and involves high costs but are more aesthetic and absorbing. Zoo-geographic and taxonomic displays are easier to implement but often fail due to non availability of animals to replenish the dead animals stock.

Adoption of a particular theme should be done taking into consideration the available space, species held in collection of the individual zoo/ possibility of procurement from other zoos and the financial resources and technical

expertise available with the zoo. Having adopted a particular theme, zoo should strictly follow it. Any deviations from the theme would result in paranoic displays sending wrong conservation message and convert the zoo into a unplanned wild animal display facility.

Adopting themes based on local/ regional animals suited to the local climate have greater chances of success. Highly endangered species should normally not be made part of thematic displays.

Under the present state of management of zoos taxonomic displays with few specialized display on bio-geographic/ ecosystem themes shall be a practical approach.

Visitor circulation plan

Traditionally the zoos have extensive network of roads. As all the roads are inter connected, there is every likelihood of the visitors getting disoriented and moving haphazardly in all directions. It is desirable that the zoo should have only one main approach road to take the visitors to the zoo animal display areas. The main road should be connected to various animal exhibits with loop roads and subloop roads of lesser width and specifications on the basis of hierarchy (importance) assigned to each road. The loop roads and subloop roads should intersect the main road at prominent junction points, where appropriate signage indicating the directions of prominent animal exhibits and visitor facilities should be available.

Due safeguards should be taken so that visitor road does not pass through the area adjoining the animal feeding cells, feeding kraals, animal service areas, service road and off the exhibit areas.

If required, zoo could fix different timings for visitors viewing specific animal facilities.

All civic amenities and visitor facilities should preferably be located by the side of main road only.

Animal collection plan

Every zoo shall take a strategic review of the species of animals and their number to be housed in the zoo for preparation of appropriate animal collection plan, with reference to:-

- (a) Space available to each species/ animal and the space actually required for housing all the animals of all the species held in its stock, as per prescribed norms.
- (b) Past and present performance of the zoo in upkeep, healthcare including the congeniality of the local climate for upkeep of the species.
- (c) Records of births and deaths of the animals of each species and the survival of the young ones.
- (d) Cost of upkeep and healthcare of each species.
- (e) Adopted theme of the zoo and the relevance of the species in the thematic display.
- (f) Species identified for planned conservation breeding by the zoo.
- (g) Species with surplus number of animals which are available with other zoos.

Following should be the guiding principles for finalizing the collection plans for different categories of zoos in Indian conditions

I. Large Zoo (National Collection)

Wild animal species of the area/ locality/ ecosystem the zoo is part of (around 30% of the total species displayed); representative wild animal species of region (North, South, West, Central, East or North-east) the zoo is part of depending upon suitability to the climatic condition (around 30%), representative wild animal species of the nation which are comfortable in the climate of the zoo (around 30%) and not more than 10% exotic wild animal species.

II. Medium Zoo (Regional Collection)

Wild animal species of the area/ locality/ ecosystem the zoo is part of (around 40% of total species displayed); representative wild animal species of the region the zoo is part of (around 40%) and not more than 10% selected species of nation and exotics each.

III. Small Zoo (Local Collection)

Wild animal species of the area/locality/ ecosystem the zoo is part of (around 60%), re representative wild animal species which are comfortable in the climate from the region (20%), nation (10%) and exotics (10%).

IV. Mini Zoo (Local common wild animal collection)

Few identified common wild animal species of the area/locality/ecosystem the zoo is part of, may be 1-2 common exotics wild animal species.

V. Rescue Centre

Identified problem wild animal species and orphaned, infirm captive animals not fit for display of the area/ locality/ ecosystem the Rescue Centre is part of:-

- (i) All rescued sick or injured wild animals should be rehabilitated back in wild or in regular lifetime care facility/zoo/rescue centre within 30 days of treatment/ healing depending upon the condition/ suitability of the individuals.
- (ii) All seized wild animals should also be rehabilitated back in wild or in regular lifetime care facility/ zoo/ rescue centre depending upon the condition/ suitability of the individuals with 30 days of the seizure after getting permission of the court dealing with the case.
- (iii) All rescued/ abandoned young wild animal should only be reared in nurseries attached to the Veterinary facilities/ hospitals of the recognized zoos/ rescue centres.

V. Specialized Zoo

Exclusive (Reptile/ Snake/ rodent/ bird/nocturnal/ aquatic park and aquarium etc.) specialized zoo may decide housing animals of one step above level i. e. small of region, medium of nation, large of international level in its collection plan.

2. On the basis of the result of the review as mentioned above, list out the species and the number of animals of each species that are necessary for planned thematic display and conservation breeding in the zoo.
3. With a view to enhance the conservation role of the zoo, some of the glamorous mega specie may have to be excluded from the list to accommodate the animal of endangered species and designing of outstanding exhibits.

Taking into consideration the outcome of detailed analysis as mentioned above, draw out the final list of the species and the number of animals of each species to be housed in the zoo. Fewer species with viable population are always preferable to a collection of larger number of species with non viable numbers.

Master Layout plan for the zoo

Master layout plan is a detailed landscape map of the existing zoo site in a scale of 1:1000 to 1:5000 depending on the area of the zoo. All the existing facilities and infrastructure and the locations of the proposed developmental activities in animal display area, conservation breeding area, rescue centre area, visitor circulation routes, animal upkeep and healthcare facilities including animals' quarantine facilities and isolation wards, visitor education facilities and civic amenities, service roads, administrative blocks, entry plaza, car parking should be clearly indicated on the map. Allocation of land for each activity should be made available having due regard to the provisions made under "Recognition of Zoo Rules" in particular to the Sub rule 11.

Disaster and crisis management plan

Every zoo should prepare a detailed plan to deal with crisis in management, arising out of natural disasters like cyclone, flood, drought and earth quake or accidental happenings like fire, animal escapes, out break of diseases, etc. The crisis sometimes may also arise out of vandalism by unruly visitors, strike by the staff, stoppage of supply of water, power and animal feed due to circumstances beyond the control of the zoo management.

The plan would comprise of:-

- I. Assessment of the degree of subjectivity of the zoo to each type of crisis and list out the crisis which are encountered at the zoo more frequently.
- II. (a) List out necessary equipments to deal with crisis like diesel generators, portable saws, axes, showels, bill hooks, water tankers, diesel pumping sets, ropes, spot lights, emergency lamps, siren, hooter, loud speaker, tarpaulin, chains, nuts and bolts and acquire and stock the same.
(b) List and keep a stock of consumables like diesel, petrol, LPG, kerosene, lubricants, fuelwood, batteries, saw blades etc.
- III. Prepare a line of command for dealing with the crisis and a support contingency plan in case the line of command does not prove effective for some reason.
- IV. Train all concerned to deal with the situation through periodic mock drills. It should be ensured that all equipments are fully functional and effective at all times.
- V. Network and coordinate with specialized agencies like fire fighting units

of the State Government/ Union Territories and upgrade the equipments and rationalize the operations on the basis of their inputs.

- VI. Be on lookout for new potential crisis and develop the strategy to meet the same like bird flu, anthrax, retaliatory killing of wild animals etc.

Management Plan

Every zoo should prepare a management plan listing out the activities to be taken up by the zoo for implementing the master plan over next 5 years indicating realistic costs of executing the identified activities and financial year wise targets both physical and financial including anticipated source of funding.

Detailed strategy for achieving the target should also be explained in explicit and elaborate manners.

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Guidelines for Preparation of Master Plan of Zoos

The Format

Part-I

Chapters

1. **Introduction**-(includes history, objectives, physical features like the topography of the area, geology, rock & soil, flora and fauna, climate, rainfall, season, approach, demography of the surrounding area, legal status of the land, sources of pollution, if any etc.)
(for an existing zoo, the introduction section may also include, the present ground situation, layout, description of different facilities, difficulties faced in the management in the past and achievements)
2. Appraisal of the present arrangement and constraints
 - a) Animal section, veterinary section, store and feed supply section, sanitation section, maintenance section, security section, water supply section, disposal of solid waste & liquid waste-sewerage, visitors amenities, lawns and gardens-landscape section and any other section peculiar to the zoo
 - b) Collection plan
 - c) General Zoo administration section
 - d) Research
 - e) Conservation breeding
 - f) Education and awareness
 - g) Any other activity peculiar/ unique to the zoo

Part-II

Chapters

1. Future objective including mission statement/ theme
2. Future action plan
 - a) Proposed animal collection plan including population size and

justification of keeping the endangered species.

- b) Description of the layout plan of the zoo - (Annexe- layout map on scale:

Layout map should be drawn on a scale 1:1000 to 1:5000 depending on area of the zoo with contour interval to be between 1mt to 5mt, depending on the topography. Existing features like water bodies, precipices, forest patches, historical ruins, natural drainage, water channel, rock outcrops etc. should be depicted. North/south direction, visitor circulation and amenities, site for disposal of carcass, water and electricity supply lines, solid and liquid waste disposal , approach road to the zoo and paths, parking arrangement, gates and barriers, administrative buildings- [zoo office, ticket counter, veterinary hospital], housing colony, industries in the surrounding areas, rail, roads - sources of pollution (if any)]

For an existing zoo, other than the above features the layout map should also show existing animal enclosures (black colour), enclosures to be modified (green colour) and the enclosures that need to be redone after demolishing the old structure (red colour). Proposed new enclosures may be in blue colour.

- c) Proposal to address the inadequacies and shortcoming identified in the appraisal report (as appraised in Part-I, 2 a). New activities if any, intended to be taken up.
- d) Depending on the local condition of the zoo, other items may also be added – peculiar problems of the zoo-like off display conservation breeding centre and rescue centre. Items not relevant can be deleted.

3. Personnel planning:-

This will provide the proposed cadre strength to manage different works considering the activities indicated in the plan including phasing of their deployment, outsourcing etc.

4. Disaster management

Plan to address problems faced during the natural calamities (Fire control, flood, cyclone situations, law and order break down, feed supply etc.)

5. Contingency plan
 - (1) Animal rescued from wild.
 - (2) Escape of animals from enclosures.
 - (3) Monkey and dog menace.
 - (4) Arrangement of food in case of strike (non supply by contractor)
 - (5) Snake bite.
 - (6) Visitors getting injured/visitors falling inside enclosure.
 - (7) Fighting among animals
 - (8) Epidemics
 - (9) Breakdown of power supply
6. Capacity building
Plan to upgrade skills of zoo staff, interaction with other zoos - regional cooperation.
7. E-governance
8. Broad budget analysis for implementing the plan
 - a) Construction and development
 - b) Day to day maintenance
9. Annexures to the Master Plan
1. Existing zoos requiring modernisation:-
Layout plan depicting the present setup (animal enclosures, administrative building, visitor amenities, roads etc). Older maps, if available to indicate stages of development.
Existing animal collection plan/ inventory
Free living species occurring in the zoo campus
Flora and fauna
Present staffing pattern and position
List of buildings other than animal enclosures

Notifications- creation of zoo society, acquisition of land etc., constitution of committees

- II. For new zoos- Site map, legal status of the land, proposed collection plan for animals (list of species)

Notification etc.

Proposed staffing pattern.

MANAGEMENT PLAN

The management plan shall be a document which will detail out the activities to be taken up in the line indicated in the Master Plan of the zoo for a particular time frame (1 year to 5years), prioritising of the works to be taken up in phases and financial year wise and provide realistic estimates of the proposed works indicating the sources of funding. This should also contain revenue to be collected and funding expected to be received from the government and other sources.

Strategy to be adopted for achieving the goals defined in the Master Plan (Part-II).

The management plan should also contain the procedure to be adopted and person responsible for carrying out different items of works with their financial and administrative powers.

In other words this will be a working document that will guide the managers of the zoo for the management plan period and facilitate the budgeting and focussed development. This will help any new incumbent to carryout development without dislocation.

* * * * *

7 a (ii). Additional Guidelines Incorporating Prohibitory provisions for the preparation of Master Plan for the long-term development of the Zoos

(circulated vide letter No. F. No. 7-16/2009-CZA(M), dated 05.07.2010)

1. Facilities related to the zoo and its staff within the zoo campus

1 a. Creation of staff quarters within the zoo campus

As mandatory under Recognition of Zoo Rules, 2009, Rule 10, Schedule 1 (6) that no residential colonies for staff shall be constructed within the zoo premises following category of staff should be separated by a boundary wall from the animal exhibit areas:-

- (i) Director/ Officer– in – charge of the zoo
- (ii) Officials and staff under Animal Section
- (iii) Officials and staff under Veterinary Section
- (iv) Security personnel's (if possible)

Where such colonies already exist, the same shall be separated from the zoo premises by a boundary wall with a minimum height of 2 meters from the ground level. The entry to the residential colony shall not be through the zoo premises.

1 b. Arrangement to provide lighting within the animal enclosures and other areas

The zoo should have a provision for emergency lighting inside the animal enclosures. The lighting in other areas may be provided, if required, at a lesser intensity to avoid disturbance to animals on account of glare. The alternate lighting like solar lights may be given preference.

1 c. Creation of Night Safari/ Safari

The Central Zoo Authority will not accord approval for creation of night safaris and safaris diverting the forest land. The existing zoos may establish night safaris/ safaris without causing any adverse impact on the animal facilities in the zoo. The Central Zoo Authority should not provide any financial assistance for establishing night safaris/ safari in any zoo.

1 d. Heritage structures within the zoo premises

The heritage structures in and around enclosures should be preserved. However, zoo animals should not be housed therein, unless such enclosures fulfill the biological and behavioral needs of such animals.

1 f. Vermicompost

The organic matter segregated from the garbage generated in the zoo should be used for vermiculture, if the zoo has adequate land and financial resources for the purpose. The zoo should construct vermiculture pits either outside the zoo premises or in a secluded area far away from the main zoo.

Every zoo shall carry out its operations in a manner that causes minimum stress on natural resources and produces the minimum of solid wastes and effluents. The zoo shall also endeavour to put in place the practices of effective waste management through reducing, reusing and recycling and disposing the effluents and solid wastes in a manner that causes least adverse environmental impact, as mandatory under Rule 10, Schedule 1(7) of the Recognition of Zoo Rules, 2009.

2. Facilities for visitors within the zoo campus

2 a. Children Park

The zoos may have a separate area earmarked as Children Park with focus on wildlife conservation. Appropriate interpretative facilities/ activities for children may be created in the Children Park area to promote wildlife conservation.

2 b. Boating

No zoo should allow boating activities inside the water bodies used as wintering ground by migratory birds. The existing boating facilities could however be continued in a very regulated manner, ensuring that it does not disturb the zoo animals in the nearby enclosures.

No new water body should be created in any zoo for creating boating facilities.

2 C. Train/ tram/ toy train/ battery operated vehicle

Zoos larger than 50 hectares may have train/ trolley facilities if such facilities enable visitors to get a better view of the animals housed in various enclosures, without causing the disturbance and pollution. No Train/ trolley facilities should be permitted for recreation.

2 d. Entry of private vehicle

Zoo should not allow entry of private vehicles, if public facilities like battery operated trolley/golf carts/train exist there. If the area of the zoo is more than 75 hectares and facilities as mentioned above are not available, private vehicles may be permitted on specified routes on payment of such fees, and subject to such regulations as deemed appropriate by the management of the zoo.

2 e. Interpretation centre/ orientation centre

Zoos should be encouraged to create or establish interpretation centres preferably adjacent to the entrance, as such facilities are useful in conveying the conservation message to visitors. The Central Zoo Authority may provide financial assistance for creation of the interpretation centre within the zoos on case to case basis.

2 f. Food courts/ kiosk/ restaurant

The food courts/kiosk/restaurant should be restricted at the entrance of the zoo. However, the some kiosks (1-3 numbers) may be located suitably inside the zoo. It was also pointed out that such food courts/kiosk/restaurant should not cater/ sell any take away food, package or disposable water bottles. Sale of alcoholic beverage should be banned.

2 g. Parties/ functions/ marriages/ melas

The zoos should not allow their premises for holding party/ function/ marriage/ mela. However, the zoo premises may be used for holding meetings/ conferences/ workshops related to the wildlife conservation. The zoos must ensure that such activities are carried out keeping in view of the welfare of the animals.

2 h. Rest houses/hotels

The creation of rest houses/ hotels within the zoo premises should not be permitted.

2 i. Limiting the numbers of the visitors at any point of time in the zoos

The zoo should make an effort to control the number of visitors at any point in time, if they are beyond the carrying capacity of the zoo (calculated adopting an appropriate method). The following methods were suggested to control the number of visitors:-

- (i) By increasing the entrance fee for the visitors on particular days.
- (ii) Increasing the working hours of the zoo.

It is also recommended that the zoo should assess its carrying capacity and try to limit the number of visitors accordingly.

2 j. Morning/ evening walking, cycling

The zoo should not be allowed to be used for morning/ evening walking and cycling by public.

2 k. Weekly closures

It is recommended that for better management, all the recognized zoos should be closed for a day in a week.

2 l. Opening and closing time of the zoo/ shifts

The zoos should be kept open to visitors for a period as decided by in management of the zoo between the sun rise and sun set. No visitor should be allowed in the zoo after sun set except in the night safaris. No same animal should be displayed for day viewing and in night safari.

2 m. Animal ride

No animal, forming part of the display, should be used for animal ride. Elephants and Yaks could be used for joy rides as per Zoo Recognition Rules but the same would be operated and housed outside the zoo display area.

2 n. Rain shelters, foot paths, lawns and gardens

The zoos may create rain shelters, foot paths, lawns and gardens subject to the condition that they are laid in accordance with the guidelines of the Central Zoo Authority. However, in the zoo gardens should be restricted to such areas and maintained at the highest standards. The experts also suggested that foot paths should be made as natural as possible.

2 o. Animal demonstration/ handling of animals/ VIP's handling the animals

The National Zoo Policy does not encourage animal handling and demonstration by the zoos, the same should not be allowed by the zoos.

2 p. Souvenir shops

The zoos may provide souvenir shops at an appropriate place within the zoo or at the entrance.

2 q. Animal feeding by the visitors

Animal feeding by the visitors in a zoo is not permitted.

2 r. Film shooting

The film shooting within the zoo campus may be allowed, without causing any disturbance to the animals and the welfare of the animals.

2 s. Animal adoption

The “animal adoption” to raise funds in Zoos for its scientific management may be adopted. However, signages provided by the funding agencies at the animal enclosure should merge with the natural environment of the zoo. It was also suggested that feeding, veterinary care, animal management of the animals should be done as per the rules.

2 t. Telephone booths

The telephones are considered as an essential service today, the same should be allowed at appropriate places.

2 u. Museum

The creation of new museum in the zoo should be discouraged and the existing zoos having museums should be asked to separate these from the animal exhibit area.

2 v. Botanical gardens

The Botanical gardens in zoos should be encouraged which may also include butterfly park, arboretum, green houses, nurseries, orchidarium and green shops.

2w. Cloak room

All large zoos should have a facility of cloak room near the entrance of the zoo for the use of visitors.

2 x. Use of generators

The zoos which are located in remote areas and do not receive adequate

amount of power supply, may use generators which are noiseless and pollution free.

2 y. Veterinary hospital

As mandatory under the Recognition of Zoo Rules, 1992 for the large, medium and small zoos to have a full fledged veterinary hospital and a small treatment facility in mini zoos & rescue centres. The zoos may also have laboratory and research facility attached to the veterinary hospital, if required.

2 z. Live feed to the animals

The animals earmarked for re-introduction in the wild should be kept in off-display soft release facilities to enable them to develop their natural instinct. All such animals should be treated at par with wild animals and should be provided feed accordingly.

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7 (a) (iii) CHECK-LIST FOR MASTER PLAN SUBMISSION

S. No.		Yes	No
1	Cover Page indicating the Name of the Zoo, Operator of the Zoo, Duration of the Master Plan, Year of Submission etc.		
2	The duration of the master plan should be 20/10 years with the provision of revision after 10 years.		
3	Certificate stating the Master Plan has been prepared by the following (name of the person, designation) and should contain their signature. Space should be left for the Member Secretary, Central Zoo Authority for counter signature.		
4	List of Contents (with page no.)		
5	Acknowledgement		
6	Preface by an competent authority		
7	Foreword by an competent authority etc.		
8	<p>PART-I</p> <p>Chapter – I</p> <p>Introduction</p> <p>a. History of the Zoo</p> <p>b. Vision of the Zoo</p> <p>c. Mission of the Zoo</p> <p>d. Strategy of the Zoo</p> <p>e. Objectives</p> <p>f. Physical features like the topography of the area</p> <p>g. Geology</p> <p>h. Rock & Soil</p> <p>i. Flora and fauna in Zoo premises</p> <p>j. Climate</p>		

	<ul style="list-style-type: none"> k. Rainfall l. Season m. Approach n. Demography of the surrounding area o. Legal Status of the Land p. Sources of Pollution, if any <p>(for an existing zoo, the introduction section may also include, the present ground situation, layout, description of different facilities, difficulties faced in the management in the past and achievements)</p>		
9	Chapter – 2		
	Appraisal of the present arrangement and constraints		
	<ul style="list-style-type: none"> a. Animal section, veterinary section, store and feed supply section, sanitation section, maintenance section, security section, water supply section, disposal of solid waste & liquid waste-sewerage, visitors amenities, lawns and gardens-landscape section and any other section peculiar to the zoo 		
	<ul style="list-style-type: none"> b. Animal Collection plan (existing) c. General Zoo administration section d. Research e. Conservation breeding f. Education and awareness g. Any other activity peculiar/ unique to the zoo 		
10	PART-II Chapter-III Future objective including vision, mission statement/ theme and strategy.		

11	<p>Chapter - IV</p> <p>Future action plan</p> <p>i) Proposed/ recommended animal collection plan including population size (in tabular form, showing the existing no. of animals) and justification of keeping the endangered species.</p> <p>ii) Description of the layout plan of the zoo - Layout map should be drawn on a scale 1:1000 to 1:5000 depending on area of the zoo with contour interval to be between 1mt to 5mt depending on topography, should also contain signatures of concerned authorities i.e Zoo Director/Curator, Chief Wildlife Warden/ Municipal Commissioner/Zoo Operator.</p> <p>iii) Director arrow on the layout plan e.g. North/South direction.</p> <p>iv) Legend on layout plan</p> <p>a. The Layout Plan should show existing features like water bodies, precipices, forest patches, historical ruins, natural drainage, water channel, rock outcrops etc.</p> <p>b. visitor and service circulation</p> <p>c. Other amenities</p> <p>d. site for disposal of carcass</p> <p>e. Separate map for electricity supply lines</p> <p>f. Separate map showing arrangement for solid and liquid waste disposal/drainage.</p> <p>g. Separate map showing water distribution</p> <p>h. Separate map showing sewerage line</p>	
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	<p>i. The layout plan should also include details on , approach road to the zoo and various categories of roads & paths, adjoining areas, parking arrangement, gates and barriers, administrative buildings- [zoo office, ticket counter, veterinary hospital], housing colony, industries in the surrounding areas, rail, roads - sources of pollution (if any)]</p> <p>j. The layout plan should be drawn following the given colour code:</p> <p>I.Existing animal enclosures (black colour)</p> <p>II. Enclosures to be modified (green colour)</p> <p>III. Enclosures that need to be redone after demolishing the old structure (red colour) and.</p> <p>IV. Proposed new enclosures (blue colour).</p> <p>iii) Proposal to address the inadequacies and shortcoming identified in the appraisal report (as appraised in Part-I, 2 a). New activities if any, intended to be taken up.</p> <p>iv) Depending on the local condition of the zoo, other items may also be added– peculiar problems of the zoo-like off display conservation breeding centre and rescue centre.</p> <p>Items not relevant can be deleted.</p>										
12	<p>Chapter-V</p> <p>Personnel planning:-</p> <p>(Proposed cadre strength to manage different works considering the activities indicated in the plan including phasing of their deployment, outsourcing etc.) Comparative statement with existing staff, sanctioned and proposed staff. (as per Recognition of Zoo Rules, 2009)</p> <table border="1"> <thead> <tr> <th>Name of Post</th> <th>Post Sanctioned</th> <th>Post filled up</th> <th>Proposed</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>(2)</td> <td>(3)</td> <td>(4)</td> </tr> </tbody> </table>	Name of Post	Post Sanctioned	Post filled up	Proposed	(1)	(2)	(3)	(4)		
Name of Post	Post Sanctioned	Post filled up	Proposed								
(1)	(2)	(3)	(4)								

13	<p>Chapter – VI</p> <p>Disaster management</p> <p>Plan to address problems faced during the natural calamities (Fire control, flood, cyclone situations, law and order break down, feed supply etc.)</p>		
14	<p>Chapter – VII</p> <p>Contingency plan</p> <p>(1) Animal rescued from wild.</p> <p>(2) Escape of animals from enclosures.</p> <p>(3) Monkey and dog menace.</p> <p>(4) Arrangement of food in case of strike (non supply by contractor)</p> <p>(5) Snake bite.</p> <p>(6) Visitors getting injured/ visitors falling inside enclosure.</p> <p>(7) Fighting among animals</p> <p>(8) Epidemics</p> <p>(9) Breakdown of power supply etc.</p> <p>(10) Free ranging animals/Feral animal menace</p>		
15	<p>Chapter- VIII</p> <p>Capacity building</p> <p>Plan to upgrade skills of zoo staff, interaction with other zoos; regional cooperation with institution</p>		
16	<p>Chapter- IX</p> <p>E-governance</p>		
17	<p>Chapter-X</p> <p>a. Broad budget analysis for implementing the plan</p> <p>b. Construction and development</p> <p>c. Day to day maintenance</p>		

18	<p>PART-III</p> <p>Chapter- XI</p> <p>Management Plan (Budget)</p> <p>Detail out the activities to be taken up in the line indicated in the Master Plan of the zoo for a particular time frame – year wise in tabular form, prioritising of the works to be taken up in phases and financial year wise (as per work plan) and provide realistic estimates of the proposed works indicating the sources of funding. This should also contain revenue to be collected and funding expected to be received from the government and other sources.</p> <p>The management plan should also contain the procedure to be adopted and person responsible for carrying out different items of works with their financial and administrative powers.</p> <p>Note: Do not indicate Central Zoo Authority (CZA) for funds for implementing the work plan. The CZA provides fund on case to case basis and availability of fund to zoos.</p>		
19	<p>PART-IV</p> <p>Annexures to the Master Plan</p> <ol style="list-style-type: none"> a. Layout plan depicting the present setup (animal enclosures {including area provided in square meters}, mark viewing area for exhibits, location of feeding & retiring cells, administrative building, visitor amenities, visitors pathway, service pathway, parking, feed store, hospital, post mortem house, carcass disposal area, etc). b. Separate layout map indicating distribution of electricity line c. Separate layout map indicating the storm water d. Older maps, if available to indicate stages of development. 		

	<ul style="list-style-type: none"> e. Existing animal collection plan/ inventory (Male: Female) f. Free living species occurring in the zoo campus g. Flora and fauna h. Sanctioned. proposed & present staffing pattern and position 		
	<ul style="list-style-type: none"> i. List of buildings other than animal enclosures j. Notifications- creation of zoo society, acquisition of land etc., constitution of committees, legal status of land etc.. <p>20. Others:</p> <ol style="list-style-type: none"> 1. Atleast 30% of the area earmarked for the zoo shall be kept under green belt and natural vegetation and the area for animal housing shall not exceed 30% area of the zoo (As per Recognition of Zoo Rules, Rule 10 - 3(4). 2. Mobilizing financial resources for the implementation of master plan shall be the responsibility of the respective zoo operator. 3. Detailed design of proposed animal enclosures may not be submitted with Master Plan document. The Same to Be Submitted Once Master (layout) Plan is approved and on case to case basis at the time of execution. 4. The final Master Plan for the long-term development of the zoo should be submitted to the Central Zoo Authority through and obtaining the concurrence of the Chief Wildlife Warden of the State/ Municipal Commissioner/Zoo Controller along with the counter signature of the Chief Wildlife Warden/Municipal Commissioner/Zoo Controller and the Zoo Director. 		

	<p>5. The digitized layout plan preferably be prepared using the software's AUTOCAD.</p> <p>6. Soft copy of the layout plan should also be submitted to CZA in PDF or JPEG format. The soft copy of the text portion of the master plan in MS-Word format should also be submitted.</p>		
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7 (b). Guidelines for establishing Safari Parks in the existing Zoos

The Zoos may establish Safari Parks within its premises subjects to they follow the guidelines of the Central Zoo Authority laid in this regard as well as the same forms part of its Master Plan and prior approval of the Central Zoo Authority.

The following are the detailed guidelines for the Safari Parks:-

- (i) The area of the outdoor enclosures for herbivore safari and carnivore safari should not be less than 30 hectares and 20 hectares respectively. Mini zoos being operated as Deer Parks and displaying mega species should not be of less than five hectares.
- (ii) Entry and exit to every drive through enclosure should be through a system of double gates. There should be sufficient space in between the two gates, to allow the gates to be securely locked at the front and the rear of every vehicle that enters the drive through enclosure.
- (iii) The gates for drive through enclosure should be so designed and located that the person operating the gates can see and ensure that no animal is standing near the gate at that time when the gate is being opened for the vehicle getting into the enclosure.
- (iv) Arrangement should be in place to ensure that the two gates provided under the double gate entry and exit system do not open simultaneously. The 2nd gate should open when the first gate has been securely locked.
- (v) Design of the double gates should be such that the same can be operated conveniently by one person only.
- (vi) Visitors should be allowed to enter in the enclosure of large cats and Bears only in closed top vehicle and the windows and glasses of the vehicle should be kept securely locked during the period the vehicle remains in the drive through enclosure.
- (vii) Supervisory staff accompanying the vehicle should be armed with appropriate weapons and communication equipment and should be authorized to use the same effectively, if required to do so, to save the visitor from attack by the animals.
- (viii) Trained personnel shall be suitably positioned over the entire drive through enclosure, on appropriately designed watch towers to keep a watch on the movement of vehicles, the animals and intruders, if any

and to provide necessary guidance to gate staff, the vehicle drivers and the animal keepers in carrying out the jobs assigned to them safely and effectively.

- (ix) A rescue vehicle capable of affecting recovery of the vehicles from the drive through enclosure should always be available at the command of supervisory staff as long as there are any vehicles within the drive through enclosures.
- (x) The layout of roads in the drive through enclosure should be such that the visitors can be shown all the highlights of the enclosure without disturbing the animals in their withdrawal areas.

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7 (c). Guidelines for Conservation Breeding Programme

1. Introduction

India is one of the rich biodiversity countries of the world which harbours a large number of mammals (350 species), birds (1224 species), reptiles (4808 species), amphibians (197 species), fishes (2546 species), insects (57548 species) and plants (46284 species) in a large landscape of 77.47 million hectare of forest cover. It is one of the twelve mega biodiversity country of the world and has 8% of world biodiversity.

The country faces huge challenges on account of population growth coupled with expansion of agriculture and human settlements, industrialization and resulting in environmental degradation and loss of prime/ critical habitat for a large number of species. The growing pressure on the wild population due to shrinkages of habitat and loss of critical resources for the fauna as led to dwindling of population of many species which are on the verge of extinction in various parts of the country. India has established a large protected area network comprising of 4.58% of the total geographical area and for ex-situ conservation, there are 194 recognized geological parks housing 40,000 wild animals in captivity across the country.

A study of the status of the population in captivity in zoos reveals that a large number of species are not of important conservation value. There are few species in the category, endangered and threatened which are housed in the zoos. Moreover, the species do not occur in natural social group and with unknown lineage and therefore the task of initiating a conservation breeding programme with the available population is a challenge.

Zoos in India are regulated as per the Recognition of Zoo Rules, 1992/2009 framed under the provision of the Wild Life (Protection) Act, 1972 and reflects the policy enshrined in the National Zoo Policy, 1998. The Wild Life (Protection) Act was amended in 1992 and a Central Zoo Authority was created to oversee the functioning and management of zoo and to provide technical support to facilitate the development of zoos in the country. The main objectives of zoos as per the National Zoo Policy, 1998 is to strengthen the national efforts in conservation of rich biodiversity of the country by supporting conservation of endangered wild animals species by giving species which has no chance of surviving in the wild, a last chance to coordinated breeding programme under ex-situ conditions and raise stocks for rehabilitating them in wild as and when

it is appropriate and desirable. The National Wildlife Action Plan (2002-2016) also lays emphasis on ex-situ breeding.

Captive breeding programmes are initiated to conserve a population of endangered species which is in danger of becoming extinct but it is not known with certainty whether such efforts can really conserve genetic diversity and produce healthy offspring for re-establishing a stable self-sustaining population in the wild. Conservation biology research suggests that in breeding and loss of fitness and health of animals can occur very rapidly, with such high magnitude with the increasing number of years of an animal in captivity. Nevertheless, there are successful examples of captive bred individuals release in the wild which maintain healthy genetic diversity and continue to sustain a healthy population. There are several scientific technologies which assist in captive breeding which stored the genetic material through cryo-preservation and artificially reproduction. There are still lots of research and studies required to investigate to what extent captive breeding procedures might ultimately help in species recovery programmes and the specific genetic factor necessary to help success captive breeding programme and alternate solutions required.

Concept and theme of conservation breeding programme

Captive breeding programmes are initiated to prevent the imminent population collapse in the wild due to a large number of eliminative pressures. The ultimate aim is to conserve to genetic diversity and re-establish self sustaining population in the wild.

Why Conservation breeding programme?

Conservation breeding programme for species recovery in the wild should be initiated after careful field research to assess the status of population of a particular species in wilderness and of comprehensive assessment of the reason for decline of the species as a judgement is to be made whether the species can on its own recover in the wilderness through a species recovery strategy based on mitigation of the factors which in the first place cause the decline of the species which could be habitat degradation, change in hydrological regime of the tract, natures balance in maintaining prey-predator ration, fire and poaching. If a determination has been made that conservation alternatives are not immediately available and that captive breeding is essential for long-term survival of species. Can it be included to initiate captive breeding programme? Not as a long term conservation strategy but as a recovery technique integrated with supplementary efforts to augment and re-

establish wild population. Every proposal to establish a captive population for recovery merits thorough evaluation and review. Captive breeding should not be constitute as a rehabilitation and recovery measures for species whose number has crashed in the wild below a minimum viable population. This population may still be far more viable and captive population, given the many limitations associated with captive breeding and reintroduction. Proponents of the programme justify captive breeding based on population viability enhances but regress assessment of the viability of wild in captive population is necessary. It is possible that alternative non-captive approaches may be more effective and safe than the captive approaches.

The National Zoo Policy reiterates that if population has decline in the wild it is necessary to supplement in-situ population with the captive stock bred in ex-situ facility. This should be qualified by the fact that each species needs to be assessed whether it truly needs captive interventions. Many zoos feed that they must carry out the mandate of the policy by involving in captive breeding of endangered species and reintroduction. However, this is not the end all they may contribute by developing husbandry, reproduction, social behaviour and dietary protocols which will ultimately help raising a captive breeding stock whenever required for reintroduction.

Can Captive Breeding Programmes conserve a sustainable and healthy population?

A study of empirical and theoretical data suggests that captive breeding programmes can to a great extent maintain genetic over a longer period. Recent studies have shown that on an average quantitative genetic variation may not be lost with a small population as rapidly as neutral genetic diversity but that levels of quantitative genetic variation can be highly variable among small population (Willi et. al. 2006).

Captive breeding for reintroduction is an important management tool for endangered species conservation and management. Several studies have shown that a pleasure very vital role in rehabilitation of a species which is likely to become extinct. The role of captive breeding and reintroduction in conservation is similar to NOAH'S ARK those species which are on the brink of extinction are managed in captivity as if riding on in Arc which are escaping the flood until those factors which threaten their existence are minimized or eliminated until they can be rehabilitated in the wild. This theme has been widely popularized in the scientific literature (Durrell 1976, Soule et al. 1986, Balmford et al. 1995).

The importance of captive breeding and reintroduction as a conservation

strategy is reflected in the National Zoo Policy 1998 and Recognition of Zoos 2009. Now this concept is being emphasized for rescue in hundreds of species represented several taxonomy group, captive breeding is being mandated in the policy statement of the world conservation union (IUCN 1997). The role of the zoos in conservation was maintaining population of threatened species who was seen as role adapted due to the long tradition of keeping, breeding, developing husbandry practices. The World Zoo Conservation Strategy (IUDZG/CDSG 1993) also accepted this particular role of the zoos. A series of global captive action plans, the IUCN Conservation Breeding Specialist Group (CBSG) have recommended hundreds of taxa for captive breeding, Seal et al. (1993) recommended captive breeding for 1192 vertebrate taxa out of 3550 examining.

When to initiate conservation breeding programme

Conservation breeding programme can be best initiated when there are sizeable population in the wilderness throughout the original geographical range of the species even though the size of the population is relatively small and may be in small pockets widely separated from recovery can be achieved by habitat ameliorated measures, management action, management interventions for reducing the reasons for mortality. There could be a possibility that the species has been extirpated over portion of its range but still survives in healthy population in other portion of this range. In such cases the animal can be translocated to vacant low density habitats once the causes of decline of population has been addressed.

Often, however, action for endangered species recovery is delayed beyond the point when in situ management or even translocation among natural areas is possible. Remnant wild populations, if they exist at all, may not be self-sustaining, and it may be impossible to reverse their decline before the projected date of extinction. For example, black-footed ferrets (*Mustela nigripes*) were thought to be extinct until a single population of about 30-50 adults were discovered near Meeteetse, Wyoming, in 1981 (see Clark 1989, and Chapter 11). That population crashed in 1985 and 1986, when a plague epidemic decimated the prairie dog colony that was the primary food base for the ferrets, and then an epidemic of distemper decimated the ferrets themselves. Analyses of the rate of loss of ferrets indicated that the species would soon be extinct unless animals could be rescued from the Meeteetse area (Seal et al. 1989).

There are cases where endangered species recovery is delayed to such an extent that the population declines to low levels may be less than 1000

and habitat improvement or translocations may not produced good results because the remnant population may not be self sustaining and it may not be possible to reverse the decline by reintroduction. The examples of such decline are must deer and hangul in the Himalayan region though the exact status of the population is not known. Examples of such population decline were observed in USA for black footed ferret and Florida panther. It is possible that in some species the last chances of recovery lies in capture of some or the entire remnant population, breeding in conservation breeding centres and releasing back into its natural habitat. The best chance of success lies when the population is in few thousands much before the population declines to such low level and captive breeding programmes for eventual reintroduction may succeed.

It is also possible that conservation breeding may not be the best option because of the biology and ecology of the species which may have low reproduction rates and therefore ex-situ conservation and in-situ conservation recovery programmes have to be given equal importance. There is a likelihood that the animal in captivity under those genetic behavioural and physiological changes and in spite of best efforts to train the animal into learning its natural trades, it may still not readapt to the natural environment and able to forage and defend itself. In some animals reconditioning trainings have been successful and animals have been well adapted to the natural habitat environment after release.

In the release programmes, the use of serogates have been experimentally tried so that the species bred for reintroduction is not lost. There is also a possibility that the species in the wild may be highly in bred with no opportunity for dispersal and breeding and therefore the only hope is to capture the remnant population for ex-situ breeding. The captive environment can disrupt adaptations and cause genetic changes in the form of genetic rift, random fluctuation in allele frequencies. The preserve genetically animals for the purpose of restoration to the wilderness captive management must minimize both adaptive and non-adaptive genetic changes.

Franklin (1980) suggested that for endangered species management, whether in captivity or in the wild, a short term minimum effective population size should be kept above 50 to avoid the immediate deleterious effects of inbreeding. For long term management, he suggested keeping the effective population size above 500, to allow new mutations to restore heterozygosity and additive genetic variance as rapidly as it is lost by random drift. The concept of the effective size of a population was originally introduced by

Wright that by breeding, as consequences of population decline, might limit recovery efforts.

When population is extirpated or nearly extirpated in the wild, the captive stock may be so small and the founders available in the wild to initiate captive lines may be so small that the low effective population size in the absence of gene flow, new genetic diversity at a much higher rate through the process of genetic drift. The smaller population also susceptible to breeding and ultimately cause in breeding depression and. This is common in many captive bred species that have often experience decline in population. Frankham et al. have proposed that the retention of 90% of genetic diversity (Allelic richness, hetero-zygosity) over a hundred year of period in captivity should be a targeted conservation goal. This period would be equivalent to 25-40 generations for most captive rare species (Soule et al. 1986) in a similar situation (Franklin 1980 and Franklin and Soule 1981) have shown that a reduction in new heterozygosity of 1% per generation (in breeding rate of 1%) due to low population size was an acceptable loss of diversity in animal population. There is now theoretic justification to conclude the extent of genetic diversity required to conserve a species population. The 1% per generation loss of heterozygosity may be true for domestic agricultural use animals but not terrestrial experiment with other species. So the goal of captive breeding programme is to conserve as much diversity as possible. The relationship between genetic diversity population in viability to very complex and varies between species and different population within species. Therefore, conservation goals should not be stand diluted or abandoned if the population is found to be using genetic diversity rapidly of 20% or more over 100 years of captive raring and such population can still be reintroduced specifically into the wild.

There are methods to reduce the rate of loss of genetic diversity based on theoretical calculation done to initiate random mating and ideal population. Ideally, it is better to start with as large founder captive population is possible (Llle Rymen 1987). One simple approach is to ensure that each individual contribute the same number of progeny to the next generation. Thus equalize family sizes from matings of animals yield a rate of inbreeding and genetic drift i.e. Roughly half to those generated from contribution of parents in idealize population (Wright 1938, Wang 1997). Another more sophisticated and scientific method and approach recommended is to use pedigree or molecular genetic marker data to minimize mean inbreeding or kinship coefficients between parents before generating new captive generations.

Captive Breeding Programme where in both captive and wide stock of endangered species contribute towards the assemblage of a founder population it can be safely generalized that such programmes can help in supplementation of a severely decline population or reintroduction of extirpated one. Captive breeding techniques have been improving continuously, as have techniques for reintroducing captive breeding animals into the wild. For some species such as asian vulture, red panda, pigmy hog from India and California condor (*Gymnogyps californianus*), the Mauritius kestrel (*Falco punctatus*), the black footed falcon (*Mustela nigripes*) and the guam rail (*Rallus owstoni*), captive breeding has clearly represented the difference between survival and extinction in the short-term (Snyder and Snyder 1989, Derrickson & Snyder 1992, Johns et al. 1995). The Conservation Specialist Group has recently generated a series of conservation assessment and management plan that called for long-term captive breeding of numerous taxa. The draft camp document has recommended long-term captive breeding for roughly half of the 330 parrot species in the world. For vertebrate, the recommendation is for 1192 (34%) of the 3550 taxa examined. Further, captive breeding recommended in a remarkable 64% of the 314 approved recovery plans for US endangered and threatened wildlife. The implications of such large scale captive breeding are profound. Therefore, a review of this technique in species recovery is necessary. Therefore, we have to examine the seven important limitations of this technique. Captive breeding for species recovery (ultimate reintroduction to the wild) should not be confused with captive breeding for other purposes suggest exhibit conservation education or research. In a height side captive breeding plays a important role for species recovery for only those endangered species of which we have knowledge of the status and population dynamics in the wild, husbandry practices, reproduction biology and ecology. For others for which we do not have knowledge we must wait and generate this information through research and if necessary employ captive breeding programmes. Therefore, this programmes is good for species where viable alternatives are unavailable and should not be proposed for a long term solution for rehabilitation of the species.

Shortcomings/Limitations of Captive Breeding

There is a large number of biologists who have in spite of the grand visions for captive breeding questioned a utility of the captive breeding programme (Snyder et al. 1996) provided a comprehensive summary of the limitations of captive breeding as an approach to the recovery of endangered species. These limitations are: difficulty in establishing self sustaining captive population, high cost involved in captive breeding and who were success in reintroduction which could potentially be overcome given increased resources

and improved methods. Though captive breeding can form a gene pool for hundred of species maintained in captivity for centuries and eventually as an insurance to the wild population which may rapidly dwindle in crash. Other limitations of the captive breeding programme are human habituation/ domestication and administrative continuity. The NOAH's ARC has now found acceptance as it will hold substantial gene pool which can be called as assured survival population for the safety net population. Snyder et al. (1996) has suggested that captive breeding should not normally be recommended or initiated before careful field studies have been completed and comprehensive determination has been made that preferable conservation alternatives are not available and that captive breeding is essential for near term survival of a species. How could a species is for captive breeding and reintroduction depends on a number of factors, the most important one whether the species which are subject to threat in the native habitats due to a several eliminative/ deleterious practices and such causes are unlikely to be removed and controlled in the short-term. Conservation breeding will gain importance as the threat to biodiversity increases and it may be an important recourse for certain taxonomic groups which can be rehabilitated and species save for the extinction. Zoos are predominately contributing directly to in-situ conservation by expanding the conservation programmes beyond management of captive population by using special techniques like assisted reproduction technology which allow zoos to breed captive populations and through the long term storage of genetic material using cryo preservation.

It remains to be determined when captive breeding programme are essential and warranted as ex-situ management of threatened species in zoos have to be directly linked with in-situ conservation programmes who achieve goals of conservation.

In recent years, zoos in India have generated tremendous interest in the captive breeding programmes largely due to a greater understanding at zoos are not merely to play a role for using the vast genetic resource of animal species as an exhibit for education and research but to achieve the fundamental task enshrined in the National Zoo Policy of Captive breeding of endangered species for the purpose of reintroducing dealt into wild. The Central Zoo Authority has in consultation with the Chief Wildlife Warden of the States compiled a large list of species which may require interventions for raising a self sustaining and genetic and demographic stable population for rehabilitating in the wild. The identified list contains 76 species. However, knowledge on husbandry, behaviour and reproduction is deficient for a large number of species and also the conservation status species in the wild is not

known. Therefore, the task of prioritizing species for initiating conservation breeding programmes becomes difficult. Further, it is not known whether the rehabilitation and recovery will actually succeed.

The Central Zoo Authority, therefore pruned this list and prioritised 26 endangered species out of 73 wild animal species that have been identified under the programme. The Central Zoo Authority in collaboration with different zoos/ states located in the geographical distribution of the species already launched the programme for 23 species. The Wildlife Institute of India through wide consultation with the scientific communities has developed criteria for prioritization and identified 26 prioritized species for Conservation Breeding Programme.

List of 26 prioritized species for Conservation Breeding Programme

Priority Number	Name of the Species	Global Distribution	Distribution in India (wild)	IUCN Status	Wild Life Protection Act, 1972 Status	No. of animals in the captivity	Founder availability in the wild	Founder availability in captivity	Information on Breeding Biology & Husbandry protocol	Threats	Overall rating
1	Pygmy hog (<i>Sus salvanius</i>)	2	5	5	5	4	2	3	2	3	31
2	Vultures (white-backed, long-billed, slender-billed)	2	4	5	5	5	2	3	2	3	31
3	Hangul (<i>Cervus elaphus hanglu</i>)	3	4	5	5	5	2	1	2	3	30
4	Golden langur (<i>Trachypithecus geei</i>)	2	3	4	5	5	2	3	2	3	29
5	Wild buffalo (<i>Buballus bubalis</i>)	2	4	4	5	5	2	1	2	3	28
6	Brow-antlered deer (<i>Cervus eldii</i>)	3	4	4	5	2	2	3	2	3	28
7	Lion tailed macaque (<i>Macaca silenus</i>)	3	3	4	5	3	2	3	2	3	28
8	Red panda (<i>Ailurus fulgens</i>)	2	2	5	5	5	2	3	2	2	28
9	Blyth's tragopan (<i>Tragopan blythii</i>)	2	2	3	5	5	5	2	2	2	28
10	Asiatic lion (<i>Panthera leo</i>)	3	4	4	5	2	2	3	2	2	27
11	Rhinoceros (<i>Rhinoceros unicornis</i>)	2	3	3	5	4	2	3	2	3	27
12	Western tragopan (<i>Tragopan melanocephalus</i>)	2	3	4	5	4	2	3	2	2	27
13	Phayre's leaf macaque (<i>Trachypithecus phayrei</i>)	2	3	2	5	5	2	3	2	3	27
14	Great Indian bustard	2	3	5	5	5	2	1	2	2	27
15	Wild ass (<i>Equus hemionus khur</i>)	2	2	4	5	5	2	3	2	2	27
16	Nilgiri langur (<i>Semnopithecus johnii</i>)	3	2	3	5	4	2	3	2	3	27
17	Musk deer (<i>Moschus chrysogaster</i>)	1	2	4	5	5	2	3	2	3	27
18	Hoolock gibbon (<i>Hoolock leuconedys</i>)	2	2	4	5	4	2	3	2	3	27
19	Swamp deer (<i>Hard surface-C.d. branderi</i>)	3	4	3	5	5	2	1	1	2	26
20	Nilgiri tahr (<i>Nilgiritragus hyllocrius</i>)	3	3	4	5	5	2	1	1	2	26
21	Floricans (Bengal & Lesser)	2	3	4	5	5	2	1	2	2	26
22	Cheer pheasant (<i>Catreus wallichii</i>)	2	3	3	5	4	2	3	2	2	26
23	Clouded leopard (<i>Panthera nebulosa</i>)	1	2	3	5	5	2	3	2	3	26
24	Painted roof turtle (<i>Kachuga kachuga</i>)	2	2	4	5	5	2	2	2	2	26
25	Snow leopard (<i>Panthera uncia</i>)	1	1	4	5	5	2	3	2	3	26
26	Shaheen falcons (<i>Falco peregrinus</i>)	2	1	4	5	5	2	2	2	3	26

7 (d). Guidelines for marking of Animals and Birds

1. Ringing of Birds:

Birds should be ringed in left leg. Chicks should be ringed only after establishing parental care bond between mother and chick.

2. Ear tagging:

Animals should be tagged in left ear. In young animals with thin ears the tag should be affixed to the thickest cartilage portion of the ears, such as the lower half, near the base. In large and adult ungulates it may be necessary to attach the tag to a thinner section of the ear. For ungulates of any age, care should be taken not to puncture any large blood vessels. In general, external tags are not recommended for amphibians and reptiles, with the exception of turtles. In particular, tags are also to be avoided for long slender animals such as snakes and many lizards.

3. Implantation of Radio Transponders (Microchips):

In mammals, radio transponders should be implanted at the base of the left ear. Implant site must be cleaned with alcohol before radio chipping but do not shave skin. The implanter needle is placed at an approximately 45° angle to the skin and then positioned almost parallel to the skin surface and transponder is injected under the skin. The needle should be carefully withdrawn and fingers pressure applied to the implantation site for approximately 30 seconds. The implantation site then should be scanned by the reader to verify both successful implantation and transponder's unique code. Transponders should also be checked as well before implanting into animals. Occasionally the needle will leave a wound; if it does, it is recommend to seal the wound with an adhesive skin bond.

In the case of thick skin species such as slow loris implantations of the radio transponders should be done on the left hip. Marking of the animals should not be done while young ones passing through weaning.

Radio transponders or microchips have been used to mark amphibians and reptiles permanently. After disinfecting the site where the device will be implanted (e.g. lower abdomen for amphibians and snakes), using standard surgical protocols, the devices are implanted subcutaneously or intraperitoneally. If possible, tissue glue (cyanomethacrylate) is then

applied to close the incision. The use of tissue glue helps to ensure that the transponder does not get ejected before the wound heals.

Marine turtles may be marked by using microchips injected into the flippers or shoulder area; however, some microchips migrate into deeper tissues and become unreadable. Complications with radio transponders which have been noted include: migration of transponders if applied subcutaneously or internally, which may make them more difficult to read; breakage of the microchips, and loss of signals.

Information on location of radio transponders (microchips) in the animals should be filled up in the Individual animal history sheet.

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7 (e) (i). Guidelines for transport of captive wild animals

1. Animals in good health only should be transported. Sub-adult animals should be preferred for transportation.
2. Pregnant or females which have recently given birth should be avoided for transport.
3. Infants and too young, incapable of feeding themselves should also 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 animal should be separated from the herd, if needed, sufficiently in advance before transport and complete health check up should be done before transport for assessing its health conditions.
6. The related papers like animal history cards, treatment cards, health certificate should accompany animal while transportation.
7. Necessary arrangements for quarantine at the recipient station should be arranged in advance.
8. The dimensions of the transportation containers for mammalian species should be such that the animal is not be able to turn around or to summer sault.
9. The transport container should preferably be of suitable 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 transport by air, fiber glass transportation cages can also be preferred as these are light in weight.
10. The floor of the container should be made removable with liquid proof trays under the slatted floor. The slatted construction should be so designed and constructed that the spacing between the slates in such that there is no danger of the animals feet becoming trapped.

11. 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. It should also be padded with rubber pads to save the animals from injury.
12. 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.
13. Suitable lifting handles or grippers bars should be provided and when the containers will be heavily loaded, the hooks for crane slings and facilities for handling by fork-lift should also be fitted.
14. On long journeys, the animals should be provided suitable bedding materials such as straw or hessian pad.
15. Arrangements for feeding and watering as per the requirement of the species and duration of the journey should be provided.
16. The animals which might have been sedated before their transportation should be transported only under the supervision of a qualified veterinarian only 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.
17. The handling of animals during the transportation should be avoided to the possible extent. The animals should be disturbed as little as possible during the transportation.
18. The transportation of animals should be avoided during extreme weather conditions like dry hot summer and very cold winter.
19. The journey should preferably be performed during day time. The time between 11:00 A.M. to 4:00 P.M. may be avoided during hot summers and nights during winter.
20. While transportation from one climatic zone to another, it is important that the animals are not suddenly moved to contrasting climate to which

- they are not accustomed. If this is not avoidable, the desired controlled environment should be made available, so that they are exposed to change climatic conditions slowly.
21. 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 the journey.
 22. The animal should be accompanied by a qualified Veterinarian and required number of keepers having experience and training in handling individual animals.
 23. Every care should be taken to avoid unnecessary discomfort, behavioural stress or physical harm to the animals while crating and transporting.
 24. While transporting the animals, due screening of the staff involved in transportation of animal should be made and it must be ensured that they do not infected of any such diseases that can infect the animal.
 25. 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.
 26. Arrangement for carrying water sprayers, buckets, additional ropes etc. should also be made and tools for temporary repair of the cages may also be carried during transportation.
 27. It is preferred to cage only one animal in a single container, except in birds or mother with babies.
 28. For longer distances, the possibility of air lifting should be explored. Lighter transport cages like fiber glass should be preferred for air journeys. The transportation cages should not be placed in closed wagon during transportation by rail.
 29. The animals avoid feeding while transportation. It is advisable to properly feed the animals along with required supplement before crating and transportation.

30. There are various guidelines by IATA or CITES for transportation of animals by air. These should be kept in mind while transporting animals by air.
31. The senior most personnel accompanying the animal should carry sufficient money and should have authority to spend the same to meet any unforeseen emergency during transportation.
32. 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 not be detained. This will ensure smooth transportation without any hindrance, particularly in inter state check gates.
33. During transportation, if there is any emergent need for any assistance from any nearby zoo, the concerned zoo should provide all possible assistance. In case of transportation, it will be ideal to keep the way hide zoo informed in advance about such movement.

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7 (e) (ii). PROTOCOLS FOR TRANSPORTATION OF WILD ANIMALS

Exchange of animals between zoos and acquisition of animals from the wild necessitate their transportation between various locations. Wild animals go through high levels of stress quite often during restraint, capture, confinement, loading, unloading and the transportation process as well as when adapting to the new environment they have been moved to. A need for developing protocols for transportation of animals that cover the major issues involved has been felt for long. Safe, humane, ethical and professional protocols for transportation of wild animals need to be developed.

To address this issue, the Central Zoo Authority (CZA) organised a workshop for zoo veterinarians at Chennai in collaboration with Madras Veterinary College and Arignar Anna Zoological Park from 24 to 28 January 2011. Twenty-seven zoo veterinarians attended this national level workshop. After thorough deliberations, protocols for transport of animals were developed under the Inter-related heads listed in the following sections.

GENERAL CONSIDERATIONS PRIOR TO TRANSPORT

1 Selection of individuals

- i. Selection of animals is critical in any planned operation involving transportation. The selected animal should be in good health and have a clean health record. Preferably it should not have any medical history that is suspect.
- ii. Only adults and sub-adults should be transported. Pregnant, geriatric, lactating, suckling, sick, weak, injured or deformed animals and stags (deer species) in velvet should be avoided in planned transport. As far as birds are concerned, juveniles which have recently fledged should be preferred for transporting. Transport of adults, if necessary, should be done after the breeding season is over.
- iii. If young ones unable to fend for themselves should be transported, they should be transported along with the mother. Young ones that are being hand reared should be accompanied by the keepers/handlers from the donor and recipient zoos.

2 Marking of selected individuals

Prior to transport, the animal identified for transport should be appropriately marked. The veterinarians of the recipient and donor zoos should ensure that proper Identification and marking of the selected animal are done. These should be uniform for the species. Natural photographic documents showing the natural identification of each animal should be maintained. Details of the site and type of marking should be recorded and made available to the recipient zoo.

- i. Microchips and/or ear tags and/or tattoo markings with permanent dye may be used for identification for ungulates/primates/large mammal species.
- ii. Carnivores should be marked with microchips (transponders). Ear tags may also be used for convenience if these are available.
- iii. Birds should be marked with colour bands. Birds larger than a myna or pigeon should also be microchipped. Microchips should be injected in their breast muscles. This is essential because the rings can come off or break during transportation.
- iv. Reptiles (turtles and crocodiles) may be notch marked, whereas snakes must have microchips. Underbelly scale notching can also be carried out on reptiles. The assistance of a person trained in microchipping reptiles should be obtained while doing this.



Photo credit: Dr. Mir Mansoor

Photo 1: Marking individuals using ear tags

3 Weather and climate considerations

- i. A complete record of the weather and climatic conditions should be maintained prior to initiating transport. Extreme climatic conditions, viz. the peak summer and monsoon, should be avoided while for transportation.
- ii. In case transportation is planned during the summer, it should be carried out strictly during the cooler hours of the day, preferably the early morning or late evening, unless the vehicle transporting the mammals/birds/reptiles is air conditioned. Necessary provisions for effective cooling and ventilation should be in place when such journeys are undertaken. During winters it should be ensured that animals are not exposed to the chill and are maintained in a comfortable environment throughout the journey. During summers crates could be covered with wet hessian sacks/gunny bags that can be moistened, and similarly, winter-transport containers/crates could be lined with Styrofoam.
- iii. Abrupt changes in weather conditions should be anticipated and provided for. Transportation logistics should be carefully planned, with a backup and support vehicle always available on call.

4 Animal transport considerations

The animal's health and well being should be the highest priority during transport. The corresponding measures depend on the species and should essentially be considered prior to movement. The mode of transport should be identified and a reconnaissance carried out well in advance. Preparations should be accordingly made. The driver/team undertaking the transportation should familiarise themselves with the route that will be taken. Stops en route should be pre-planned and identified well in advance to minimise the duration of transport. The cage should be kept in the vehicle in such a way that the animal always faces the direction in which the vehicle is moving. In the case of transportation of elephants by truck, it is best to cover just 250 km a day, halt and take out the elephants for medications (muscle relaxants, vitamins/glucose), water, walking, feeding and resting till the next morning.

5 Record-keeping considerations

- i. Copies of the studbook and breeding records of the animals being transported should accompany the animals to indicate the pedigree and to prevent inbreeding.

- ii. Copies of the animal report including all details of health, breeding and animal temperament and medical history sheets and medical records should be sent to the recipient zoo along with the animals.

FINANCIAL CONSIDERATIONS

The following need to be considered in terms of the financial outlay when planning the acquisition of new animals:

- i. The financial consideration involved in providing additional man power for the care of the new animal/animals
- ii. Provision of adequate funds for transportation from the donor zoo
- iii. Provision of funds for the up keep and veterinary care of the animal
The director of the recipient zoo should ensure the availability of funds for the above prior to the transport of the animals.

FACILITY AT RECIPIENT ZOO

- i. Once a decision to acquire new animals has been made, the recipient zoo should ensure the availability of adequate appropriate housing space as per CZA guidelines.
- ii. If an existing enclosure for the species is already present, it should not be overcrowded due to the addition of the new animals. A separate enclosure should be made available for the new animals.
- iii. If no enclosure exists, a new enclosure should be constructed well before the arrival of the animal.
- iv. If the animal being acquired is endangered or belongs to Schedule I or II of the Wildlife (Protection) Act, 1972, the zoo should get the design for the enclosure approved by the CZA prior to construction.

LIAISON WITH AGENCIES

The director of the recipient zoo should arrange for all requisite permissions and liaise with the following agencies/departments for transport of animals. The donor zoo should assist the recipient zoo by providing necessary documents such as the donor/recipient zoo agreement:

- i. Chief wildlife wardens and state forest departments of concerned states for permission to acquire and transport animals
- ii. CZA (for permission)

- iii. Quarantine officer of the region for necessary permits.
- iv. Zoos en route-information for assistance in case of emergencies
- v. State forest departments en route-information to ensure that the animals not stopped on the way
- vi. Agencies for emergency-assistance (as may be required)
- vii. CITES (for permissions relating to international exchange of animals)
- viii. DGFT (international exchange of animals)-import permissions
- ix. MoEF, Government of India (for permission in the case of international exchange of animals)-without NOC documents the DGFT will not issue a permission to import
- x. Customs Department (international exchange of animals)

ANIMAL CRATE/TRANSPORT CAGE CONSIDERATIONS

Animals have to be confined in crates/transport cages during transport for easy handling and to minimize the chances of injury to the animals. The transport cages/crates should be of dimensions that allow the animal to stand and to rest in sternal recumbency but do not provide space for turning. The basic considerations are as follows:

- i. A crate should be designed according to the requirement of the species and should be portable, light and easy to manoeuvre.
- ii. Crates should be constructed with an aluminium/light metal/ wooden frame and plywood or laminated plywood. They should have hinged handles so that the container can be loaded and unloaded with ease.
- iii. The size of the crate should be such that the animal can only stand or sit in it or lie in sternal recumbency. It should not be able to tum or somersault.
- iv. The crate should be rectangular in shape.
- v. The crate should be well ventilated, and it should be ensured that the extremities of the animals do not project out.

- vi. Do not use lead paints for painting crates. As far as possible crates should not be painted inside, but the surface should be smooth.
- vii. Crates should be disinfected properly prior to transport. When birds are being transported, it should be ensured that the crates are free of any fungus. This could be achieved by putting the cage out in the sun for a couple of days before use. Fungus grows in crates that are not used for some time and can be very harmful to birds, especially birds of prey.
- viii. Temporary facilities should be created for providing feed and water. ix. In case of transport by air containers should be fabricated in conformation with the size and weight specified for the aircraft. Different aircraft have cargo holds with doorways of different sizes.
- x. Facilities should be provided for cleaning the excreta.
- xi. Bedding of paddy straw, sand, etc. should be provided, and the floor may be peg-bored to avoid slipping. In the case of birds, the floor should be covered with sand, sticks or just Astro Turf. No perch should be provided in the cage.
- xii. Padding with gunny bags filled with paddy straw, coir or foam/cotton cushions should be provided in crates used for herbivores. Cages used for birds do not require any padding. Nails, wooden splinters, protrusions, sharp edges and sharp objects should be removed from the inner surfaces of the container.
- xiii. Hinged (foldable) hand holds or handles should be provided on the sides for easy handling. At the same time it should be ensured that the handles will fold away and be flush after loading so that the cage may be secured and prevented from shifting during transportation.
- xv. In the case of deer, antlers and antler tips may be taped with padding/cushioning to prevent injuries and breakage during transport.
- xv. Only well trained/experienced handlers/attendants/keepers should be deputed for the task.



Photo credits: 2 & 3, Wildlife Trust of India

Photos 2 & 3: Ungulate transport box.



Photo credit: Dr. Navin Kumar

Photo 4: Giraffe transport container



Photo credit: Dr. Parag Nigam

Photo 5: Tiger transport container



Photo credits: 6, 7 & 8, Dr. Parag Nigam

Photos 6,7 & 8: Trapping-cum-transport cages for leopards

Species-specific considerations

A. Deer species

- i. The maximum number of animals that may be transported at a time is four or five.

- ii. Only one male should be transported in any crate.
- iii. With smaller species, two females may be transported in a crate; with larger species, only one female may be transported in each crate. However, it is preferable to transport only one animal in a crate.
- iv. As per the need both the sexes can be transported in separate crates.

B. Carnivores

- i. Preferably only one animal should be transported in each crate/ container. When more than one animal must be transported in a crate, it is preferable to have animals from the same enclosure or those that have lived together.
- ii. Males need to be transported separately in individual crates.

C. Primates

- i. Up to four animals may be transported together at a time.
- ii. With larger primates, only one animal may be transported in a crate.

D. Birds

- i. Storks, cranes, ratites and raptors should be transported individually.
- ii. Parakeets may be transported in pairs in boxes.
- iii. Ducks, teals, geese, pigeons, bulbuls, galliforms (females), corvids, sparrows and other finches may be transported in groups.



Photos 9 & 10: Boxes for transportation of small mammals and birds

Photo credits: Wildlife Trust of India

E. Reptiles

- i. Crocodiles should always be transported singly.
- ii. Turtles and tortoises: Large animals should be transported singly; small ones may be transported in groups.
- iii. King cobras, cobras, pythons and other cannibalistic snakes must always be transported individually in crates/boxes with locks and signage marked DANGER/HANDLE WITH CARE - VENOMOUS SNAKE.
- iv. When reptiles such as crocodiles, chelonians, snakes and lizards are to be transported/released, check for evidence of any injury, metabolic bone disease, ectoparasites, stomatitis, scale-rot, dysecdysis, bloat, retained eye caps, swollen eyes or abnormal discharges from the eyes, nostrils, mouth, etc. In the case of crocodiles, the teeth should be clean and white, not brittle or translucent. Similarly, any accumulation of algae on teeth may often reflect lack of feeding in crocodiles. Fasting prior to physical capture appears to be desirable in reptiles. Transport boxes or containers should be of adequate width and depth to prevent chelonians from climbing and damaging their shells. Snake bags need to be tied firmly to prevent escapes. Boxes should be locked. Reptiles are very susceptible to dehydration during transportation and require to be provided water.

Moist gunny bags have proven to be useful when transporting large numbers of young crocodiles (total body length less than 1.5 m) over short distances (200-250 km or 5-6 hours).



Photo 11: Transport container for crocodiles

Photo credit: Dr Navin Kumar

For dimensions of the crates for different species, *Manual of Transport Cages and Nest Boxes*, published by CZA, may be referred to.

A. Deer species: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)	Remark
<i>Sambar (Rusa unicolor)</i>	180	68	150	For ventilation,
<i>Swamp deer (Cervus duvaucelli)</i>	165	60	150	provide 12 mm holes on the sides.
<i>Spotted deer (Cervus axis)</i>	150	55	120	<i>Crates for other species of deer may be designed</i>
<i>Barking deer (Muntiacus muntjac)</i>	90	45	75	<i>accordingly to the size of the animals.</i>

- i. Frame: All around solid wooden or metallic battens of 4 mm thickness
- ii. Sides: 12 mm thick waterproof plywood
- iii. Floor: 19 mm thick waterproof ply
- iv. Roof: 12 mm thick waterproof plywood
- v. Doors: sliding doors on both sides with bolts and chains; 12 mm thick waterproof ply

B. Carnivores: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)
Tiger/lion	195	75	105
Bear	180	75	100
Leopard jaguar	120	60	90

- i. Frame: MS angle 40 mm x 40mm x 6mm
- ii. Sides: 12 mm thick waterproof plywood with cover of 3 mm thick iron sheet
- iii. Floor: 19 mm thick waterproof ply on MS flat 35 mm x 4 mm @] 350 c/c floor,and two sides also covered from inside with 2 mm thick iron sheet. Holes on floor 20 mm in diameter. Whole crate should rest on 50 mm x 50 mm iron pegs. Two removable trays of depth 25 mm to be provided below the floor to receive urine and excreta.
- iv. Roof:12 mm thick waterproof plywood
- v. Doors: 12 mm diameter MS bar@ 50 mm c/c should be welded with frame and covered with 5 mm thick plywood.Bolt and chain system for closing and opening the doors.

C. Primates: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)
All macaques	90	68	75

- i. Frame: Solid wooden battens 35mm x 35 mm all around
- ii. Sides: 12 mm thick waterproof plywood
- iii. Floor: 12 mm thick water proof ply wood with sawdust on base
- iv. Roof: 12 mm thick waterproof plywood
- v. Doors: Only on one side with facility for sliding up; made of 9 mm thick waterproof ply
- vi. Ventilation: Holes of 20 mm diameter on two sides; welded mesh on top at the rear,100 mm wide

D. Birds: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)	Remarks
Munia/ budgerigar	75	75	22.5	Sufficient for 2-25 munias; wire mesh size 150 mm x 600 mm
Kite/ Shikra	60	45	45	For one bird; perch at 50 mm, should have enough space to turn around. Wire mesh size 150 mm x 600 mm
Pheasants	60	45	60	For one bird; if the tail is long, the length may be increased accordingly. Wire mesh size 100 mm x 600 mm
Emu and cassowary	75	60	150	
Small	75	75	25	Sufficient for 10 parrots; perch is parakeets

- i. Bird size measurements should be taken with the bird lying down/ wings closed and legs stretched. The height of the crate should always be at least 4-6 Inches more than the bird's height at the head.
- ii. Frame: Solid wooden battens 30 mm x 30 mm all around; in the case of emus, 75 mm x 50 mm.
- iii. Slides: 9 mm thick waterproof plywood; In the case of emus, the plywood should be 12 mm thick, with iron bars of length 25cm fixed at equal distances from each other.
- iv. Floor: 9 mm thick waterproof plywood; in the case of emus 19 mm thick plywood, with saw dust. In the case of big birds, the flooring should be of astro-turf or of any non-slip material.
- v. Roof: 9 mm thick waterproof plywood; in the case of emus the plywood should be 19 mm thick.
- vi. Doors: Sliding on one side, back closed, Door made of 9 mm thick plywood. In the case of emus the thickness should be 19 mm. When transporting raptors or birds, the sliding door should not be installed sideways but instead top to down. This will allow the bird to be caught by its legs. In a vulture transport box the lid should be on the roof because it should be opened at the top.

- vii. Ventilation: Wire mesh at rear end at the top of the cage; in the case of emus, holes on both sides. In the case of raptors, there should be holes (of the size of drilling machine bits) at regular intervals on all the four sides. The holes should be small enough to ensure that even a human finger cannot pass through them as the introduction of a finger into a crate could be very dangerous, especially in the case of vulture transport.
- viii. For dimensions of the crates for different species, Manual of Transport Cages and Nest Boxes, published by CZA, may be referred to.

E. Reptiles: Indicative dimensions of crates are provided below:

Species	Length (cm)	Width (cm)	Height (cm)	Remarks
Crocodile/ alligator/ gharial	195	60	40	Small sizes are preferred.
Python	75	90	45	Handles on both sides to carry the crate
Cobra or other snakes	60	75	30	Handles on both sides to carry the crate

- i. Frame: Solid wooden battens 35 mm x 35 mm all around; in the case of pythons, MS angles of 25 mm x 25 mm x 4 mm and with additional support of MS flats 25 mm x 4 mm as required. For other snakes, solid wooden battens of size 25mm x 25 mm.
- ii. Sides: 12 mm thick waterproof plywood with 35 mm x 35 mm solid wooden battens as supports (4 nos.). In the case of pythons, 19 mm plywood and wire mesh on two sides. For other snakes, 9 mm waterproof ply with wire mesh on two sides.
- iii. Floor: For crocodile and other snakes 12 mm thick waterproof plywood with sawdust on base. In the case of pythons, 19 mm plywood with dry paddy at base.
- iv. Roof: For crocodiles and snakes 12 mm thick waterproof plywood. In the case of pythons, 19 mm thick waterproof ply with hinges and locking arrangement. The top will act as a door.
- v. Doors: Sliding on both sides with 12 mm thick waterproof plywood.

- vi. Ventilation: Small holes on sides and top as required. But it must be ensured that the holes are smaller than the size of the snake's tail/head as well as human fingers.
- vii. 5 em thick plywood boxes (2' x 2' x 1'; 60 em high x 60 em long or deep x 30 em wide) with up to four racks have been effectively used for transporting up to 10 hatchlings in each rack for transport of hatchling gharials by air.

VETERINARY CONSIDERATIONS

DONOR ZOO

i. Health screening of animals

- The identified animal(s) should be subjected to health screening so as to ensure their fitness for transportation and to avoid transmission of diseases to animals in the recipient zoo. The IUCN guidelines on quarantines and health screening prior to translocation of wild animals should form the basis of such interventions. Where required, animals may be vaccinated and dewormed well in advance to transportation, at least 3 weeks before the action.
- Body weight and morphometric features should be estimated by a biologist, who should also design the crate.
- Animals of different species should never be transported in the same container.
- A health certificate should be issued by the veterinarian of the donor zoo to the recipient zoo in a standard format with all health related details.

ii. Nature of capture

- The mode of capture must be based on the species to be captured. It is essential that the veterinarians decide on the mode of capture well in advance. The requisite instruments and drugs may be procured/stored accordingly.
- If chemical immobilization has to be carried out, the animal should be fasted for 24 hours and deprived of water for 12-16 hours. The animal may have to be covered with wet cloths in case it develops a high temperature, and the eye may need to be covered as a precaution

when acepromazine, etorpin and human antidotes are used.

- If chemical immobilization and restraint procedures are to be used, adequate stocks of immobilizing drugs, reversal agents and antidotes should be procured and stored appropriately. The drug dosage may be decided based on the size of the animal and other considerations such as the age, sex, weight, weather, physiological and temperamental needs and excitement level. Tranquilizers may be used before transportation as they reduce anxiety in the animal, thereby reducing chances of stress. A wide range of tranquilizers is available. The choice of drug depends on the species and the excitement level. It is advisable to use short and long-acting tranquilizers for herbivores prior to crating, depending on the travel time and the species, as this will minimise the stress experienced by the animal during crating, transport and release at the new location.
- If physical methods of capture are to be used, it should be ensured that the animals are subjected to minimal stress and that there are skilled and experienced personnel in the team.
- The animal, especially if it is a herbivore, can be habituated to its crate well in advance by placing the crate in the enclosure and feeding the animal every day in it. This will slowly make the animal comfortable with the crate, thereby reducing the stress at the time of transportation because of the animal's familiarity with it.
- The staff involved in the capture and transportation procedure should be made aware of the various procedures that need to be carried out. It would be very helpful if a mock exercise were to be practiced so that the staff are prepared for eventualities.
- The best available drugs should be used selected for tranquilizing a species. The drugs available in India are xylazine, ketamine and acepromazine. Butophanol, azaperone, detomidine, medetomidine, telazol, midazolam, haloperidol, etorphine and the reversal agents atipamazole, yohimbine, tolazolline, flumazenil and naltrexone are also available.
- The dose regime for chemical immobilization of animals may be according to the indicative values below, subject to the advice of the veterinary officer.

Deer

Species	Drugs	Dose regime (mg/kg)	Mode
Spotted deer (<i>Cervus axis</i>)	*Xylazine and ketamine	6 and 1.2	IM
	*Meditomidine and ketamine	0.05-1.0 and 0.8-3.2	IM
Hog deer (<i>Cervus porcinus</i>)	*Xylazine and ketamine	6 and 1.2	IM
	*Meditomidine and ketamine	0.05-1.0 and 0.8-3.2	IM
Swamp deer (<i>Cervus duvaucelli</i>) Blackbuck (<i>Antilope cervicapra</i>)	*Etorpine and xylazine	0.003 and 5-8 mg/animal	IM
	*Ketamine and medetomidine	2 and 0.25	IM
	*Xylazine	20 mg/ animal	IM
Nilgai (<i>Boselaphus tragocamelus</i>)	*Etorpine, acepromazine and xylazine	0.03, 0.12 and 0.16-0.23	IM
Barking deer (<i>Muntiacus muntjac</i>)	Xylazine and ketamine	3 and 2	IM

Carnivores

Species	Drugs	Dose regime (mg/kg)	Mode
Wolf (<i>Canis lupus</i>)	*Xylazine and ketamine	10 and 2	IM
Himalayan black bear (<i>Ursus thibetanus</i>)	*Tiletamine/ zolazepam and medetomidine	0.5 and 0.01	IM
Sloth bear (<i>Ursus ursinus</i>)	*Ketamine and xylazine	7.5 and 2	IM
	*Ketamine and medetomidine	3 and 0.05	

Red panda (<i>Ailurus fulgens</i>)	*Ketamine and medetomidine	5 and 0.1	IM
Civet and binturong	*Ketamine and xylazine	10 and 1-2	IM
Lion (<i>Panthera leo persica</i>)	*Ketamine and xylazine	4.5 and 1	IM
Tiger (<i>Panthera tigris</i>)	*Ketamine and xylazine	5 and 1	IM
Snow leopard (<i>Panthera uncia</i>)	*Ketamine and medetomidine	2.5-3.0 and 0.06-0.08	IM
Leopard (<i>Panthera pardus</i>)	*Ketamine and medetomidine	3 and 0.07	IM
Small felids (cats)	*Ketamine *Ketamine and xylazine	5-10 3-5 and 0.06-0.08	IM IM

Primates

Species	Drugs	Dose regime (mg/kg)	Mode
Macaques and langurs/Leaf monkeys	*Ketamine and medetomidine Note : The combination of Xylazine and ketamine may also be used.	5-10 and 0.05	IM

*Kindly refer to the report titled Standards, Guidelines and Protocol prepared by the IVRI for CZA.

CONSIDERATIONS RELATED TO TRANSPORT

- i. The veterinarian and keeper of the recipient zoo should accompany the animals during transportation. In special cases, the veterinarians of both the donor and recipient zoo may accompany the animals during transportation.
- ii. During transportation, disturbance of the animal should be minimised.

- iii. Human contact with the animals should be minimised to avoid cross infection.
- iv. The animals should be monitored throughout the transportation, and if need be, appropriate treatment/management should be administered.
- v. Emergency veterinary drugs and equipment should be carried during transportation to meet any eventuality. Quick and prompt veterinary consultations and treatment should be extended to animals that get injured or diseased in transit.
- vi. An official with the requisite financial powers to cover any exigencies en route should accompany the animal. The official may be assisted by an animal supervisor and keepers/handlers as required.
- vii. Sufficient quantities of food and water should be available in the vehicle during transportation.
- viii. There should always be two drivers for the vehicle so that there need not be an excessive number of stops during the journey. One driver can rest while the other drives. But there should be no rush to cover the distance.
- ix. Staff undertaking transportation of animals should not consume alcohol as this will blur and affect their judgement, which is critical in case of emergencies.
- x. In the case of vehicles going through Maoist-/insurgency-affected areas, the RTOs/border checkpoints involved should be consulted to identify the best time of the day in which to pass through these areas, and police escort must be requested from the SP/DM of the area to prevent any risk to the vehicles, people and animals.



Photos 12 & 13: Rhino transport crate

Photo credits: Dr. Parag Nigam
& Wildlife Trust of India

CONSIDERATIONS AT RECIPIENT ZOO

- i. Before getting the approval of the Central Zoo Authority, the veterinarian of the recipient zoo may visit the donor zoo, and a mutual agreement must be arrived at regarding the animals to be exchanged.
- ii. The behaviour, feeding pattern and health of the chosen animals should be closely monitored.
- iii. Animals should be housed in stress-free environments.

HUMAN RESOURCE CONSIDERATIONS AT RECIPIENT ZOO

- i. The recipient zoo should arrange well in advance at least one full time keeper for the animal to be received. If the recipient zoo has no prior experience in managing the animal, the designated keepers should be sent well in advance to the donor zoo to familiarise themselves with the husbandry, care, feeding, treatment and daily routines related to the care of the animal involved.
- iv. The recipient zoo should arrange training for the keeper engaged to look after the newly arrived animal at the donor zoo three months in advance. A quarantine and health check-up should be carried out according to veterinary protocols and the relevant guidelines.
- v. One Forest Range Officer (In case of Forest Department zoos), one supervisor, two or three animal attendants and the animal keeper of the receiving zoo should accompany the animal when it is being transported. But in the case of species which can be easily handled and transported, the director of the recipient zoo may decide the number of people to be sent to receive animals without compromising the safety and care of the animals.

TRANSPORT VEHICLE CONSIDERATIONS

- i. Reputed and experienced companies/firms/NGOs that are experienced in transporting animals should be selected and engaged. No compromise should be made in this regard.
- ii. An agreement should be signed between the carrier company and the consigner so that an alternate vehicle will be arranged as early as possible by the carrier company in case of any breakdown or other emergencies that may arise en route.
- iii. A detailed discussion should be held between the donor, recipient, transport company and the identified escort team, and responsibilities and tasks should be allotted.

- iv. Ensure that the vehicle is fit for the journey. The vehicle should be serviced, and a thorough check-up should be carried out prior to the transport. Additionally, information on the fuel level, tyre pressure and the tool kit and essential spares carried should be obtained. An animal transport vehicle on a long journey should have two drivers.
- v. The mobile numbers and contact details of the drivers, owners, cleaners, etc. should be given to the coordinators of both the donor and recipient zoos.
- vi. The transport vehicle should be insured. All the vehicle-related documents should be valid (R.C., insurance papers, driver's licence, etc.) and should be checked.
- vii. The vehicle should be disinfected properly prior to transport.
- viii. Identification of the animals to be transported should be done prior to loading.
- ix. The shortest route among the usable ones should be selected.
- x. Before transportation, factors such as the weather forecast and possible disturbances (blockades, processions, festivals, public functions etc.) during the proposed transportation period should be taken into account and the planning carried out accordingly.
- xi. Information on zoos and other facilities available en route should be provided to the personnel of the vehicle so that assistance (food, health care, etc.) can be obtained as and when needed.
- xii. The contact information of directors/veterinarians of zoos en route should be available with the transporting team. The travel plan should be communicated to the directors/veterinarians so that they can provide assistance if required.
- xlii. The pilot vehicle should have a representative of the competent authority and a veterinarian. It should have drugs, equipment for physical immobilization and communication facilities.
- xiv. The personnel should be wearing in uniform with proper dress code. The vehicle should have the necessary papers/certificates.
- xv. The team in the pilot vehicle should inform toll gates/check posts in advance so that unnecessary delays are avoided.
- xvi. The transport vehicle and pilot vehicle should carry emergency lights, torches with sufficient batteries, drinking water, IV fluids, medical kits, etc.

- xvii. For help with safe and secure transportation, the fares department personnel and agencies such as the police of the districts or states involved may be contacted.
- xviii. The guidelines of IATA, CITES, etc. should be followed wherever applicable.



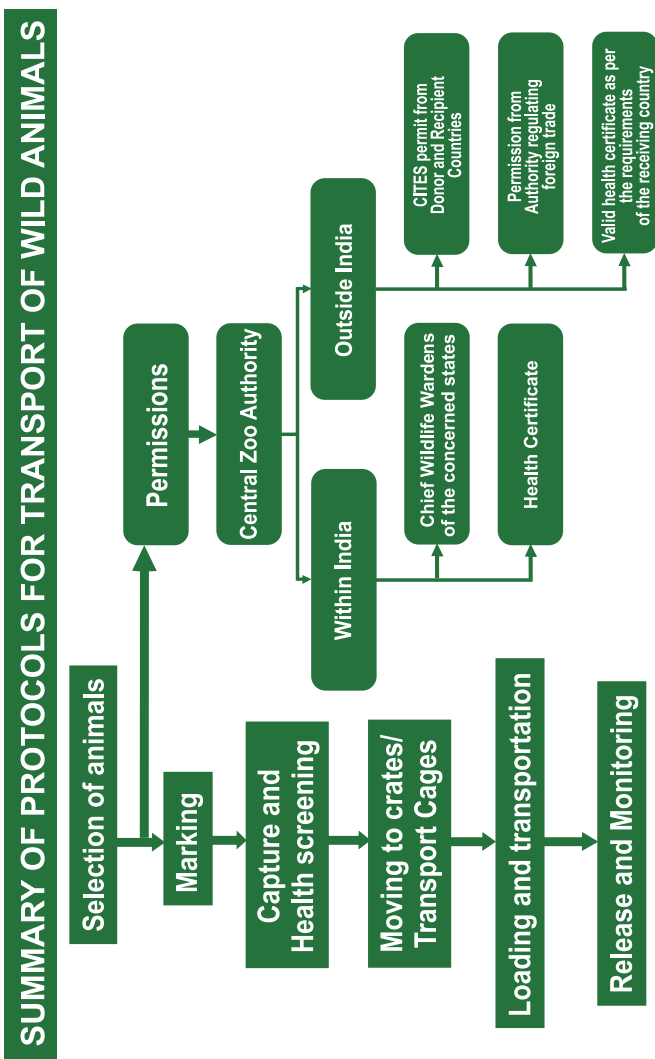
Photo Credit: Wildlife Trust of India

Photo 14: Transportation of carnivore



Photo Credit: Dr. Parag Nigam

Photo 15: Specially designed vehicle for transportation of gaur, at Kanha Tiger Reserve



Annexure I

Permissions required for international transport of animals

India is a signatory to the Convention on International Trade in Endangered Species (CITES), and any international transport of wild animals is governed by this convention. The Director-Wildlife Preservation, Government of India, is the nodal officer for CITES permits, and the country is divided into four regions: The Northern Region consists of the states of Uttar Pradesh, Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir and Rajasthan and the union territory of Delhi and Chandigarh; the Eastern Region consists of the states of Bengal, Bihar, Assam, Arunachal Pradesh, Sikkim, Mizoram, Nagaland, Orissa, Tripura, Meghalaya and Manipur; the Southern Region consists of the states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka and the union territories of the Andaman & Nicobar Islands, the Lakshadweep Islands and Pondicherry; and the Western Region consists of the states of Gujarat, Madhya Pradesh, Chattisgarh and Goa and the union territories of Daman & Diu and Dadra & Nagar Haveli.

The Regional Deputy Director (Wildlife Preservation) can be contacted for obtaining the mandatory CITES permits for international transport of wild animals. Once a CITES permit has been obtained, permission may be obtained from the Director General of Foreign Trade for international transport of wild animals.

CITES Management Authorities

Director (Wildlife Preservation)

Management Authority CITES - India

Ministry of Environment & Forests, Government of India Paryavaran Bhawan, 4th Floor, CGO Complex, Lodi Road New Delhi -110003

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<p>Regional Deputy Director (WCCB) & CITES Asst. Management Authority Western Region Ministry of Environment & Forests Wildlife Regional Office 11, Air Cargo Complex Sahar, Mumbai- 400099 (India) Telefax: +91-22-26828184 Email: rddwr@vsnl.com</p>	<p>Regional Deputy Director (WLP) Eastern Region Ministry of Environment & Forests Wildlife Regional Office Nizam Palace, 2nd MSO Bldg. 234/4, AJC Bose Road, Kolkata - 700020 (India) Telefax: +91-33-2247869</p>
<p>Regional Deputy Director (WCCB) Southern Region Ministry of Environment & Forests Wildlife Regional Office, C-2A, Rajaji Bhawan, Besant Nagar, CGO Complex, Chennai-600090 Tel. No.: +91-44-24916747 Email: rddwl@md4.vsnl.net.in</p>	<p>Regional Deputy Director (WCCB) Northern Region Ministry of Environment & Forests Wildlife Regional Office Barracks No.5, Bikaner Office, Shahjahan Road, New Delhi -110011 Tel. No.: +91-11-23384556 Fax: +91-11-23386012 Email: rddnr@vsnl.netin</p>

(TO BE PUBLISHED IN THE GAZETTE OF INDIA EXTRAORDINARY
PART II SECTION 3, SUB-SECTION (ii))

**GOVERNMENT OF INDIA, MINISTRY OF COMMERCE
NOTIFICATION NO. 27 (RE-98)197.02 NEW DELHI. DATED THE
29TH OCTOBER 1998**

S.O.- In exercise of the powers conferred by section 5 of the Foreign Trade (Development and Regulation) Act, 1992 (No. 22 of 1992) read with paragraph 4.1 of Export and Import Policy 1997-2002, the Central Government hereby makes the following amendments in the Export and Import Policy, 1997-2002 and ITC(HS) Classification of Export and Import items 1997-2002 published on 31st March 1997 and amended from time to time.

In Export and Import Policy, Sl. No.1 of Section D, Seeds, Plants and Animals of Part II of Chapter 15 of Negative List of Imports shall be amended to read as under:

Sl. No.	Description of items	Nature of restriction
1.	Animals, birds and reptiles (including their parts and products)	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on international Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized scientific research institutions, in addition to the above requirement, the recommendation of the Committee for the Purpose of Control and Supervision of Experiments on animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an Import License.

In ITC(HS), Classification of Export and Import in respect of the following Exim Code nos., conditions relating to the policy indicated in column 4 shall be amended to read as under:

Exim Code	Description of Item	Policy	Conditions relating to the policy	Import under SIL/ Public Notice
010119 00.90	Other	Restricted	Import permitted against a 00.90 license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a state government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized scientific/ research institutions in addition to the above requirement, the recommendation of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010120 00.90	Other asses, mules and hinnies	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wildlife Warden of a state government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized scientific/ research institutions, in addition to the above requirement, the recommendation of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of a license.	

Protocols for transportation of wild animals

010600 01.90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of a license.	
010600 02.90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	

Legislation, Policy, Guidelines and Strategy

010600 03.90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized Scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	
010600 09.90	Other	Restricted	Import permitted against a license to zoos and zoological parks, circus companies, private individuals, on the recommendation of the Chief Wild Life Warden of a State Government subject to the provisions of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). For recognized Scientific/ research Institutions, in addition to the above requirement, the recommendation of Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) under the Prevention of Cruelty to Animals Act, 1960 shall also be required for issuance of an import license.	

This is issued in public interest.

(N.L LAKHANPAL)
DIRECTOR GENERAL OF FOREIGN TRADE AND
EX-OFFICIO ADDITIONAL SECRETARY OF THE GOVERNMENT OF INDIA

7 (f). Guidelines for exchange or transfer of animals between Zoos

Preamble:

Initially the Zoos were functioning as Centres for exhibition of wild animals for satisfying the curiosity of the visitors. Over a period of time, their role has changed from mere exhibition centres to centres of conservation. The new role has put upon the Zoos a responsibility of providing the animals in their stock better housing and upkeep which can ensure that there are no premature deaths and the animals live a quality life of adequate longevity. Such measures are crucial for developing self-sustaining population of endangered species in Zoos and provide viable groups of compatible animals of breeding age. This objective can be achieved only through expeditious transfer/exchange of animals from one Zoo to another. Keeping single animals or unpaired animals merely for the sake of increasing the number of species on display is counter productive. The Zoo owners and Zoo managers have to respond to the need for conservation of various species of wild animals and contribute to it by way of donating and loaning or giving in exchange of some other species, the single/ unpaired and surplus animals of endangered species for the conservation programmes identified by the Central Zoo Authority.

Central Zoo Authority will take every care that all the Zoos are benefited from the exchange programme.

To achieve this goal, following guidelines are being issued:

Guidelines:

1. The exchange proposals submitted by Zoos will be decided primarily on the basis of the housing and upkeep facilities available at the recipient Zoo and viability of the species population group at the donating Zoo.
2. Single animals, unpaired animals and animals in non-viable groups will be transferred to zoos with appropriate housing and upkeep facilities. Preference has to be given to the zoos in the normal habitat range of the species concerned.
3. While approving exchange programme the past track record of the zoo with regard to success in breeding and infant healthcare and upkeep shall be given proper weight age.
4. Animals of wild origin shall be treated as precious commodity and their

- heterozygosity and genetical variability to an optimum level. Such animals shall not be permitted to stagnate at rescue centres/mini zoos.
5. All animals of endangered species shall be marked or implanted with a microchip and detailed stud book for such animals maintained. When approving the exchange proposal due safeguard shall be taken to prevent breeding the animal from the same lineage.
 6. Random removal of animals from a breeding group/ herd will not be permitted. Preferably only sub-adults shall be removed and allowed for exchange or transfer.
 7. Exchange of animals to zoos outside India, shall be permitted only if it is in over all interest of the conservation of species concerned and also helpful in enriching the population of indigenous species in the country.
 8. Import of exotic animals in non viable numbers shall be avoided. Such imports will be permitted only for planned breeding of species identified by Central Zoo Authority.
 9. Prior to entering into an exchange with a foreign zoo, the antecedents of the foreign zoo and the nature of housing and health care facility available in the zoo shall be verified.
 10. The donating zoo must provide all the details of the animal such as date of birth/ estimated age, feed chart, healthcare measures adopted etc. along with the animal while making transaction with the recipient zoo.

Note:(1) The Member Secretary may issue approval of Central Zoo Authority for exchange proposal involving the wild animal species/individuals not part of the approved Coordinated Conservation Breeding Programme, if satisfying the guidelines. (2) All the exchange proposals of wild animal species/ individuals between Indian Zoos forming part of approved Coordinated Conservation Breeding Programme will be placed in the Technical Committee for approval. (3) All the exchange proposals between Indian and Foreign Zoos will be decided by the Central Zoo Authority as per recommendations made by the Technical Committee. (4) In urgent cases and where the meeting of the Technical Committee or/and Central Zoo Authority is not likely to be held immediately, the Member Secretary may issue the approval of Central Zoo Authority for such exchange proposals which satisfy the guidelines with the approval of the Chairman, Technical Committee and/or Chairman, Central Zoo Authority respectively as the case may be. However, ex-post-facto

approval will be taken from Technical Committee and/or the Central Zoo Authority (as the case may be) will be taken for all such proposals in the next Meeting. (5) Schedule 3 (9) of Rule 10 under Recognition of Zoo Rules, 2009 (Amendment) Rules, 2013 which reads as "Any decision of the Central Zoo Authority about any animal being sent to a particular Zoo for augmenting the number of founder animals for the conservation breeding programme of the species shall be binding on the concerned Zoo." will any means be implemented once issued by the Central Zoo Authority.

Format for exchange of animals

Name of Zoos and Animals to be given

Name of Zoos and Animals to be given				Name of Zoos and Animals to be given				Purpose of Exchange /Remarks
Species to be Given	Present Stock	Number to be Given	Stock with the Recipient Zoo	Species to be Given	Present Stock	Number to be Given	Stock with the Recipient Zoo	
	M:F:U	M:F:U	M:F:U		M:F:U	M:F:U	M:F:U	

PROFORMA FOR EXCHANGE OF ANIMALS BETWEEN ZOOS

Details about species to be given	Details about species to be acquired
A. General	A. General
Name of the species Number of individuals in stock and sex ratio Number of individuals to be given and sex ratio	Name of the species Number of individuals already in stock and sex ratio Number of individuals to be acquired and sex ratio
B. Animal Details	B. Animal Details

<ol style="list-style-type: none"> 1. Age 2. Specify whether wild origin/ captive bred and generation(F1,F2) 3. Breeding record (whether sired/ given birth) 4. Studbook number (national/ international) 5. Whether marked, then specify (Transponder no./ring/tag etc) 	<ol style="list-style-type: none"> 1. Age 2 Specify whether wild origin/ captive bred and generation(F1,F2) 3. Breeding record (whether sired/ given birth) 4. Studbook number (national/ international) 5. Whether marked, then specify (Transponder no./ring/tag etc)
C. Purpose	C. Purpose
<ol style="list-style-type: none"> 1. Breeding 2. over crowding/surplus 3. single or unpaired 4. other 	<ol style="list-style-type: none"> 1. Breeding/introduce new blood 2. Pairing / Provide mate 3. Forming social group/viable population 4. other
D. Nature of housing	D. Nature of housing
<ol style="list-style-type: none"> 1. Open air/ Closed (specify area in sq.mtrs) 2. Feeding cells/ kraal (specify dimension in mtrs) and number of cells/kraal 	<ol style="list-style-type: none"> 1. Open air/ Closed (specify area in sq.mtrs) 2. Feeding cells/ kraal (specify dimension in mtrs) and number of cells/kraal
E. History of the zoo in:	E. History of the zoo in:
<ol style="list-style-type: none"> 1. Upkeep 2. Breeding 3. Infant care 4. Mortality 	<ol style="list-style-type: none"> 1. Upkeep 2. Breeding 3. Infant care 4. Mortality

* * * * *

7 (g). Procedure and process for acquiring Animals from Zoos abroad

Step-1 Animals to be acquired are part of your approved collection plan

Verify whether the animals you propose to acquire are part of your approved collection plan by the Central Zoo Authority (CZA). If not, obtain prior approval of CZA for your collection plan before negotiating with a foreign zoo.

Step-2 Negotiating with foreign zoo and obtaining veterinary protocol for bringing in animals into India

- a) While negotiating with the foreign zoo, try to acquire at least 2 pairs or more number of specimens you propose to add to your collection plan. This will ensure that even if one animal dies during transit, you are left with at least three or more specimens. Secondly, tell the exporting zoo to put a price tag (of minimum value) for the purpose of customs duty, while agreeing to provide the animals. (The Dept. of Revenue, Govt. of India can also be approached for waiver of customs duty, but this is quite cumbersome and time taking).
- b) While agreeing to part with animals, the foreign zoo would ask for veterinary protocol to be followed for import of the animals. An application has to be made to Assistant Commissioner (Trade), Dept. of Animal Husbandry, Dairying & Fisheries, Govt. of India, Krishi Bhawan, New Delhi-110001 seeking guidelines for the same. {This again takes time, one has to pursue on telephone}. All correspondence to Assistant commissioner shall also be marked to The Commissioner, Dept. of Animal Husbandry, Dairying & Fisheries, Govt. of India, Krishi Bhawan, New Delhi-110001 for his information.

Step-3 NOC of Chief Wildlife Warden and approval of Central Zoo Authority

Once you have firmly entered into an agreement with the foreign zoo for an exchange, move the proposal to Chief Wildlife Warden of the State for seeking no objection from the States point of view. Thereafter submit the proposal to Central Zoo Authority for their approval.

Step-4 NOC of Ministry of Environment and Forests (MoEF), Govt. of India

As soon as Central Zoo Authority approves the proposal, move an application to the Director (Wildlife Preservation), Ministry of Environment, Forests &

Climate Change, Govt. of India, Indira Paryavaran Bhawan, New Delhi for obtaining a no objection certificate towards import of the animals.

Step-5 Submission of Application to regional office of Wildlife Crime Control Bureau, MoEF for issue of CITES import permit and Director General of Foreign Trade for import certificate

- a) Communicate your approvals to the donor foreign zoo for facilitating issue of CITES export permit/ NOC from CITES angle by their concerned CITES management authority.
- b) Obtain a copy of CITES export permit from the foreign Zoo and submit an application to the Regional Deputy Director, Wildlife Crime Control Bureau of the region / port of entry (where the zoo is proposing to disembark the animals into India) for issue of CITES import permission. The NOC obtained from the Chief Wildlife Warden of the State shall also form part of the application.
- c) Submit an application to Director General of Foreign Trade, New Delhi for seeking permission to import animals. 3 copies of ANF1 (Aayat Niryat Form-1) and 3 copies of ANF2B (Aayat Niryat Form 2B) shall be submitted with copies of all approvals. A copy each of these forms shall also be submitted to Joint Director General Foreign Trade of the region where the zoo is located (Offices of Joint Director General Foreign Trade are located in most of state capitals barring a few.)
- d) An Import Export Code (IEC) is required to be obtained prior to getting the import certificate. Govt. run zoos need not obtain the same as they are exempted and permanent IEC has been allotted by DGFT. Private zoos run by registered societies and trust also need not obtain IEC (exemption for the same has to be obtained by informing the DGFT that animals being imported are not for commercial purpose- visit DGFT website for details)

Step-6 Engaging a customs house agent (CHA) for helping in airport quarantine, CITES and customs clearance

Once all above permissions are in place and dates finalised for import of animals, hire a registered CHA having prior knowledge of dealing in customs clearance of animals. (Help of Regional Animal Quarantine Officer at the airport could be obtained for identifying a responsible CHA of experience).

A copy of the veterinary certificate of the animals being imported should be obtained from the foreign zoo and submitted to Regional Animal Quarantine

Officer before hand itself. This will facilitate faster release of animals at the airport.

It is mandatory to keep imported animals under quarantine at the port of entry for a minimum period of 21 days before they can be taken to the zoo. But it has been seen that most of time holding facility for animals at the quarantine centre does not exist. Thus the zoo themselves take responsibility for keeping the animals under quarantine in their campus. A letter from the veterinary officer of the zoo would be required declaring that proper quarantine arrangement exist in the zoo and submitted to the Regional Animal Quarantine Officer before hand itself.

Step-7 Transportation of animals from airport

If your zoo happens to be near the international airport / port of entry transportation of the animals can be carried out on a truck. One has to ensure that prior to loading of animals on truck; the same shall be properly sterilized.

If one is proposing to carry animals on long distance (1000km or more), Indian railways is always preferable, as animals will be subject to less stress. However, for this prior permission of the concerned regional railways have to obtain. Generally the Chief Commercial manager of concerned zone / region deals with the matter. Secondly, Animal Welfare Board of India has brought in legislation for transportation of animals by road and railways. Therefore before embarking upon transportation, one has to obtain prior permission of the board or from a recognized animal welfare officer on prescribed form. This is mandatory for transporting animals by Rail.

Important Notes:

1. It is mandatory to obtain prior NOC from the concerned Chief Wildlife Warden of the state before applying to Central Zoo Authority.
2. It is mandatory to seek prior permission of the Central Zoo Authority for importing any animal into an Indian Zoo.
3. Very young and very old animals should not be imported. General age class should be between 4 to 6 years, i.e the animals should have been properly weaned and do not depend on their mothers / Keepers for food. The importing zoo should obtain detailed history sheets of the animals being acquired prior to agreeing to receive them. (All accredited zoos in the world are on ISIS data base and maintain records as per the ISIS norms.)

4. If the importing zoo is receiving exotic animals for first time, they should train their keepers on husbandry matters either at the exporting zoo or in any Indian zoo having the animals, before the animals land up in the zoo.
5. As permissions are required to be obtained from multifarious government agencies, continuous persuasion is required.

7 (h). Guidelines for release of zoo animals into the wild

Release of genetically, biologically and behaviourally viable zoo bred animals in an objective and planned manner in accordance with a well conceived guidelines is an important tool for conservation of wildlife. However, unplanned release of zoo bred animals of unknown pedigree and genetic make up and poor health status often lead to disastrous consequences. In this background strict adherence to the guidelines while releasing any zoo bred/captive bred animals into the wild is crucial.

Objectives of release of zoo bred/ captive bred animals into the wild

1. Augmenting the depleting number of endangered species in any ecosystem.
2. Reintroducing the species in an area which was part of its historical range, from which the species has disappeared or become extinct due to various factors.
3. Introduction of the species in areas outside its recorded range of distribution, in the habitat that have the potential to hold and support the species on a sustained basis without becoming a vermin/ pest.
4. Experimental releases for developing expertise in rehabilitating the zoo bred/ captive bred animals in the wild and preparing detailed protocol for planned release of the species for any of above objectives.

Pre requisites for a successful release programme

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. Capacity of the animals that are being released to adopt itself in the wild and fend itself successfully.
3. Mitigation/ redressal of the factors that have been responsible for the decline 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 live- stock.
5. Acceptability of the release programme to the 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 programme and provide finances and other resources on a sustained basis for various phases of the release programme.

Strategy for successful release of zoo bred/ captive bred animals in the wild

A. Preparatory phase

I. Biological

- (i) Assessment of taxonomic status of the animals earmarked for the release and ensuring that they pertain to the same species/ race that is naturally occurring/ occurred in the area.
- (ii) Assessment of the critical needs of the species to be released including habitat preferences, intra specific variations and adaptations to the local ecological conditions, social behaviour and group dynamics, home range shelter and food requirements, foraging and feeding behaviour, predators and diseases etc. Over all to have and analyse a firm knowledge of the natural history of the species to be released.
- (iii) Species if any, that has filled in the void created by the extinction of the species from the area and effect of the release on the status of the population of that species.
- (iv) Determining the optimal number of animals that can be released each year and most appropriate period for the release.
- (v) 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.

- II. Choice of the release site
 - (i) The site of release should have an 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 rule no releases of zoo bred/ captive animals should be done in adequately stocked habitat.
 - (ii) The area of release should have assured long term protection against all the factors that can inhibit the future propagation and healthy growth of the population of species released.
- III. Suitability of the stock for release
 - (i) 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.
 - (ii) Animals selected for the release should be thoroughly screened for their biological, behavioural 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.

Release of the zoo bred/captive bred animals in the wild

The animals earmarked for the release should be initially shifted to facility specially created 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, through experts if so required. They should be released in the wild when their behaviour becomes comparable with their wild counterpart.

Socio-economic-Legal Requirements

- (i) Socio-Economic studies should be made to assess the impacts, costs and benefits of the proposed release to the local population.
- (ii) Thorough assessment of the attitude of the local people to the proposed release project should be made and their apprehension if any, should be properly redressed. No release of animals in wild should be made in the wild against the wishes of the local people.

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

General

- (i) The execution of all the phases of the release programme should be carried out under the supervision of multi disciplinary team of experts.
- (ii) Long term and short term indicators for quantifying the success of the release programme should be identified.
- (iii) 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.
- (iv) Necessary vaccinations against local endemic and epidemic diseases should be given to all the livestock that is likely to share the habitat with the released species.
- (v) Transport plan for the animals should be so prepared and executed that no mortalities take place during the transport.
- (vi) Appropriate orientation and training programmes should be organized for all the persons involved in the release programme.

Post release activities

- (i) Continued demographic, ecological and behavioural studies on released animals should be done both through direct (telemetry/ monitoring of movements) and indirect methods (information provided by local people).
- (ii) 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 facilities in case the intervention do not succeed despite all efforts.
- (iii) Habitat protection/restoration and enrichment should be done wherever necessary.
- (iv) Continued evaluation of the success of the programme with reference to identified parameters and results should be published in scientific journals/ popular literature.

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7(i). Guidelines on minimum dimension of enclosures for housing animals of different species in Zoos

Introduction

The Central Government has, through amendment of the Wild Life (Protection) Act, 1972 and notification of Recognition of Zoo Rules, 2009, prescribed minimum standards and norms for housing, upkeep and healthcare of Indian animals housed in the different zoos of the country. However guidelines on the minimum dimension on housing of various exotic species of animals and birds are not yet prescribed 137 species of exotic animals and birds are currently housed in various Indian zoos.

Dimensions and size of animal enclosures

In order to meet the above requirement, a sub-committee was constituted to develop the minimum prescribed standards for housing the exotic animals and birds. Following recommendations of the committee are prescribed:-

- (1) As per the Recognition of Zoo Rules, 2009, the land area to be given to any animal exhibit enclosure should be decided giving due regard to the maximum number of animals that can be displayed in the animal enclosure. Many times multiple species can be housed together for display. However, the maximum number of animals that can be displayed in a single enclosure shall vary from species to species.
- (2) The area of the enclosure should have adequate land space for facilitating the animals to have free movement and exercise, adequate area to rest in shade and bask in the sun and have safe refuge from dominant animals and express their natural, social and reproductive behaviour.
- (3) The animal exhibit enclosures should not be given geometrical shapes, as the presence of corners is not congenial to smooth and unrestricted movement of animals. Enclosures with greater depth facilitate the animals to keep a safe distance from the visitors and are always preferable.
- (4) The dimensions and the area of any enclosure should be decided giving due regard to various factors mentioned above and the topography and naturalistic features of site identified for construction of the enclosure. The indicative sizes for the outdoor

enclosures and feeding cubicles/night shelter of exotic animals are given in Annexure I. Since, the indicative sizes for outdoor enclosures at Annexure I are minimum, zoo operator should always try to provide for larger and bigger outdoor to the extent possible.

It is desired that display of animals in a zoo should be done on the concept of nature immersing enclosures with following objectives:

- (i) Landscape around every animal exhibit/ enclosure should comprise of plantations of appropriate tree and shrub species of adequate extent and of such shape that the enclosure should not be visible to the visitors from any place other than the animal viewing areas.
- (ii) All the hard exteriors of the enclosure i.e. the enclosure barrier and the frontage of the feeding cells, feeding kraals should be effectively camouflaged through planting of bamboo, dwarf tree species and shrubs.
- (iii) Planting of appropriate trees and shrubs should be done around the animal viewing areas to break up the visitors into small viewing groups.
- (iv) Visitors should be made to move through the green landscape around the enclosure for reasonable distances.
- (v) Planting of appropriate trees species should be done in the enclosure to ensure that entire animal enclosure is not visible to the visitors from any of the viewing points. The animal should be seen to the visitors in its near natural settings.
- (vi) Enclosure Barrier-Barrier of every enclosure should be of a design, dimension and material that can effectively contain the animals housed within the enclosure and safeguard against any animal escaping from the enclosure. Due care should also be taken to ensure that the shutters and doors fitted in the enclosure, kraal and feeding cell are of such material and design that these can not be broken/ opened by the animals housed in the enclosure. The barriers of all the enclosures, except the animal viewing area could comprise of natural cliffs (if any), wall, glass, power fence or chain-link fence, etc. of prescribed dimensions. However, in animal exhibit enclosures, provision of a moat could be made in the animal viewing area, to facilitate the visitors in having an

unobstructed view of the animals without getting close to them. Wet moats shall normally not be used as enclosure barrier for the viewing area except in case of water loving animals. The total land area under moat should not exceed 20% of the land area of the enclosure.

(vii) Other safeguards :

- (a) Due care should be taken to ensure that no power line/ power cable passes over any animal enclosure.
- (b) Enclosure barrier should be erected/ constructed at a safe distance from such trees that can aid the animals to escape from the enclosure or damage the enclosure barrier.
- (c) Where walls are used as enclosure barriers, due care should be taken to plaster the same with such proportion of cement mix that the plaster does not wither away leaving gaps that could be used by the animal as holds for escaping out of the enclosure.
- (d) Live wire overhangs or chainlink should be used to prevent the animals from escaping out of the enclosure.
- (e) Water pipelines and sanitary fittings should be fixed within the enclosure in such a manner that the same can not be used by the animal as aid to escape from the enclosures.
- (f) Adequately a deep foundation should be provided for enclosure barrier housing the burrowing species.
- (g) Attention should be given to different barrier materials, fixtures, shutters etc. to see that they are safe and can not be broken or cause injuries to animals.

Minimum prescribed size for feeding/retiring cubicle for important mammalian species of exotic animal and birds.

S. No.	Name of the species	Minimum size of the outdoor enclosure (sq. mtrs.)	Number of animals /birds to be housed	Size of the feeding cubicles/ night shelter (mtrs.) (Length x Breadth x Height) for each animal/ bird.	Minimum size of the water body (if any) (in sq. mtrs.)
1.	Flightless birds, Emu, Cassowary,	500 (upto 10 nos.)	1:1	3 x 2 x 2.5	-
2.	Exotic Pheasants	80 (with minimum size of the aviary – 3 x 3 x 6 m)	1:3		-
3.	Flying birds	80 (with minimum size of the aviary – 3 x 3 x 6 m)	2:2	Height of the aviary should be 6 mts	-
4.	Parrots, Macaws, Cockatoos, Conures, Rosella	80 (with minimum size of the aviary – 3 x 3 x 6 m)	2:2	Height of the aviary should be 5 mts	-
5	Baboon, Capuchin, Lemur, exotic monkeys	500	1:1	2 x 1.5 x 2.5	-

Guidelines on minimum dimension of enclosures for
housing animals of different species in Zoos

6.	Marmosets, Squirrel monkey	50	1:1	1 x 1.5 x 2	-
7.	European bear	1000	1:1	2.5 x 1.8 x 2.5	-
8.	Cape buffalo	1500	1:1	3 x 2 x 2.5	-
9.	Chimpanzee, Orangutan, Gorilla	1000	1:1	2.75 x 1.8 x 3	-
10.	Fallow deer, Sikka deer & Lechwe deer	1000	2:3	3 x 2 x 2.5	-
11	African elephant	5000	1:1	8 x 6 x 5.5	-
12	Giraffe	1500	1:1	8 x 5.5 x 6	-
13	Hippopotamus	1000	1:1	5 x 3 x 2.5	-
14	Jaguar	500	1:1	2 x 1.8 x 2.5	-
15	African Lion	1000	1:1	2.75 x 1.8 x 3	-
16	African Rhino/ White Rhino	2000	1:1	5 x 3 x 2.5	-
17	Tapir	500	1:1	2.5 x 1.5 x 2.5	100 m2
18	Tigers (other than Bengal tiger)	1000	1:1	2.75 x 1.8 x 3	-
19	Zebra	1500	1:1	3 x 2 x 2.5	-
20	Wallaby	300	1:1	2.5 x 1.5 x 2.5 The floor should have a provision of ramp.	-

21	Crocodiles/ Alligator African Dwarf, American, Australian Freshwater, False gharial Crocodile Morelets, Nile, Siamensis, Snouted, African Slender, West African Dwarf Gavial False, Caiman Spectacled, Yacare & Dwarf.	500	1:1		200 (with a depth of 2 mtrs.)
22	Iguana	100 (covered partly by chain link	1:2	No house required	May also keep reptile house/ glass terrarium type enclosure
23	Giant Aldabra tortoise	200	1:1	With 20 sq. mtrs. (small shade from rain & heat)	-
24	Small aviary birds (Love birds, finches, Lorikeet, Java sparrows, Munia, Budgerigar	15	2:3	Earthen pots of appropriate size for nesting and shelter should be provided.	-

Minimum prescribed size for Feeding/Retiring Cubicle for important mammalian Species of Captive Animals

Name of the Species	Size of the feeding cubicle/night shelter for each animal (meters)			Name of the species	Size of the feeding cubicle/ night shelter for each animal (meters)		
	Length	Breadth	Height		Length	Breadth	Height
Tiger, Asiatic lion	2.75	1.80	3.00				
Common leopard, Clouded leopard & Snow leopard	2.00	1.80	2.5	Musk deer, Nilgiri Tahr, Chinkara, Four horned antelope, Bharal, Goral, Wild sheep and Markhor	2.5	1.5	2.5
Small Cats	1.8	1.50	2.0	Mouse deer	1.5	1.0	1.5
Sloth bear, Himalayan black bear, Brown bear and Malayan sun bear	2.5	1.8	2.5				
Monkeys and Langurs	2.0	1.5	2.5				
Civets, Binturong, Otters, Ratel, Hogbadger, Martens, Red panda, Wolf, Jackal and Wild dog	2.0	1.5	2.5				
Elephant	8.0	6.0	5.5	Slow loris and Slender loris	1.0	1.0	1.5
One-horned Indian Rhinoceros	5.0	3.0	2.5				
Wild buffalo, Yak, Indian gaur and Wild ass	3.0	2.0	2.5				
Brow antlered deer, Hangul & Swamp deer	3.0	2.0	2.5				

Minimum prescribed sizes for outdoor open enclosures for important Mammalian Species in Captivity

Animals/ Species	Minimum size of outdoor enclosure (per pair) (Square meters)	Minimum extra area per additional animal (Square meters)
Tiger and Lion	1000	200
Panther, Clouded leopard and Snow leopard	500	100
One-horned Indian Rhinoceros	2000	400
Brow antlered deer, Hangul, Swamp deer	1500	100
Wild buffalo, Indian bison and Wild ass	1500	200
Bharal, Goral, Wild sheep and Serow	500	100
Sloth bear, Himalayan black bear, Brown bear and Malayan sun bear	1000	100
Red panda, Jackal, Wolf and Wild dog	400	100
Monkeys and Langurs	500	100

MINIMUM PRESCRIBED SIZES FOR OUTDOOR ENCLOSURES FOR IMPORTANT BIRDS IN CAPTIVITY

Animals/ Species	Minimum size of Aviary (Square meters)	Minimum height of the aviary (meters)	Minimum size of the water body within the aviary (Square meters)
Birds of prey	300	8	10
Pheasant *	80	3	3
Water birds (mixed species enclosure)	300	8	60 (with a depth of 1.5m)
Flying birds (mixed species enclosure)	300	8	20
Flying birds (single species)	80	6	2

* In case of Peafowl the aviary size should be kept 160 sq. m.

**MINIMUM PRESCRIBED SIZES FOR OUTDOOR OPEN
ENCLOSURES FOR IMPORTANT REPTILES AND
AMPHIBIANS IN CAPTIVITY**

Animals/ Species	Minimum size of the enclosure (Square meters)	Minimum size of the water body within the enclosure (Square meters)
Crocodile/ Gharial	400	150 (with a depth of 2 meters)
Python	80	6
Cobra, Rat snake, Vipers	40	4
Sand boas	40	4
Monitor lizards *	80	6
Chameleons and Small lizards	40	4
Tortoises	40	4
Turtles	80	40 (with a depth of 2 meters)
Amphibians	10	4 (with a depth of 0.5 meter)

* In case of Water monitor lizard the size of water body should be kept at 40 sq. meters with a depth of 1.5 meters.

NOTE

1. The dimensions have been given only in respect of the species, which are commonly displayed in zoos.
2. No dimensions for outdoor enclosure have been prescribed for Chinkara and Chowsingha because of the problem of infighting injuries. The enclosure for these species could be a group of small sized enclosures with fewer animals in each. Care should be taken to ensure that there should be no competing mating males in each small enclosure.
3. The designs of enclosures for endangered species, not covered by this Appendix, should be finalized only after approval of the Central Zoo Authority.

7 (j). Guidelines on use of innovative exhibit design and barriers' design for holding and display of animals and birds in Indian Zoos

1. Animal Types, Enclosure & Barrier Recommendations

Animal	Front barrier	Rear barrier	Remarks
Tiger, Asiatic Lion	V-shaped dry or wet moats, glass viewing structures at special viewing areas. Depth of moat: 5m Horizontal width at the top: 8 m	U-shaped dry moats OR chain-link fences of 5 m high with 1.5 m overhang at 60° angle or high rock walls.	1. The hot wire barrier may be provided to prevent animals coming into the moat. 2. In case of want of space for a moat, all sides can be provided with chain-link mesh fence with glass fixed at 2/3 places for unhindered viewing.
Leopard/Jaguar	1. Chain link mesh fence of 4 m high with inclined inward steel plate of one meter width on the top. The steel plate should be placed at an angle of 60°. 2. Wherever space is available 5 meter deep moat with overhang of hot wire.		For an unhindered vision, use of toughened glass of proper specifications at one or two points could be used.
Jackal, Wolf, Hyena, Wild dog	V-shaped (flat bottomed) dry moats on the visitor side. Depth of moat: 2.6 m Width of moat: 5 m	V-shaped (flat bottomed) dry moats or chain-link fences of 2.5 m in height.	

Guidelines on use of innovative exhibit design and barriers' design
for holding and display of animals and birds in Indian Zoos

Bear/Civets/ Lesser cats	U-shaped / V-shaped dry moats on the visitor side.	U-shaped / V-shaped dry moats or high smooth walls, or chain-link fence of 4m high with inclined inward steel plate of one meter width on the top.	The steel plate should be placed at an angle of 600.
Primates	<p>U-shaped / V-shaped dry moats, shallow wet moats, netted aviaries with glass viewing.</p> <p>Moat width for langur: 7 m</p> <p>Moat depth for langur: 5 m</p> <p>Moat width for macaque: 6 m</p> <p>Moat depth for macaque: 4 m</p> <p>or chain-link mesh of 5 m high with inclined steel plate of 1m width.</p>	<p>a. In case of moated enclosures, the inner side of the enclosure should be provided with overhang with 2 strands of hot wire attached below the slanting portion.</p> <p>b. The moated enclosure should have clearance of tree of at least 9 m from the inner side of fence/moat.</p>	
Deer and antelopes	Chain-link fences all around the paddock, V-shaped (flat bottomed) dry moats of 2.5 m depth having slope width of 6m.	V-shaped (flat bottomed) dry moats or chain-link fences	<p>a. The visitors view should be restricted.</p> <p>b. Slope should be grass sodded (turfed) or stone pitched depending on the site condition.</p>

<p>Gaur, Wild Boar, Rhinoceros, Asian Elephant</p>	<p>V-shaped dry moats, or low walls (clay banks), cattle grids (for gaur) or 5 meters away a sunken B.G. Rail Barrier with 1 to 1.5m high or hot wire fence made in depression, created by excavating earth for camouflaging it from viewer.</p>	
<p>Pheasant</p>	<p>Covered type enclosure of wire mesh of 3 meter high, 8 m depth, 4 m width</p>	<p>a. The double galvanized mesh of 12mm x 12mm x 4g should be placed 0.5m below the earthen surface to prevent rodents. b. The plinth should have 7 cm (over hang) to prevent rodents/snakes approaching the chain link mesh from the viewer side or either side.</p>
<p>Walk through aviary</p>	<p>i. The area for the walk through aviary should not be less than 2 hectares with at least 100 m wide withdrawal area for the birds. ii. The height of the aviary should be 18 m.</p>	<p>a. Adequate vegetation should be provided b. Provision of board walk shall be ideal for visitors.</p>

Guidelines on use of innovative exhibit design and barriers' design
for holding and display of animals and birds in Indian Zoos

Terrestrial birds	The height of the mesh covered enclosure should be at least 5 meters.	Sufficient vegetation and perches should be made available to the birds.
Water bird aviary	<p>i. The chain link mesh covered aviary could be ideal.</p> <p>ii. The height of the aviary should be kept 12 m.</p>	<p>a. The chain link used for the aviary should be off 45 m x 12-15 m in dimension.</p> <p>b. The 50% of the enclosure area should be covered by water body with flaring angle or aeration.</p>
Birds of Prey/ flying birds	The dimension of the chain link mesh covered should be 45mx12-15mx12m high	
Crocodile / Gharial enclosure	Open 'V' shape moated enclosure with dry moat should be provided.	<p>a. It must be ensured that enclosure should have at least 20% space covered by water (pool).</p> <p>b. Sufficient area shall be provided for basking. Sand must be available for gharials for basking and egg-laying.</p>

2 (a). Other decisions taken in the meeting are as follows:-

- (i) It was agreed there should be increasing use of other barriers like hot wire (power fence), concealed ones, glass fronted viewing, rails etc.

- (ii) Use of stainless steel instead of mild steel, particularly on posts and chain-link mesh should be encouraged due to its longevity, avoidance of rust and lighter weight.
- (iii) Environmental enrichment like perches, dens, ledges, nesting boxes, feeding logs, wooden logs, wooden platform, wallow, pools, logs, vegetation, bunchy earth should be provided in the exhibits. For this a letter can be addressed to all the zoos for sending their plan with requirement of funds for the purpose. This can be supported by CZA as it is a small component.

In case of new enclosures, it should be in built with the design and should be limited to 2% of cost.

- (iv) Nocturnal animal houses should provide adequate space, with open air kraal and sufficient number of animals to be rotated and arrangement for proper regulation of lighting.
- (v) Reptile houses particularly in the cooler regions, should be covered and glass fronted with assured heating arrangement in winter i.e. back up power supply.
- (vi) Large, medium and small zoos located in urban areas or within 500 meters from human habitations should be bounded with perimeter wall on all sides of 2 m height from the ground level.
- (vii) In case of zoos with less than 10 hectares area, creation of moated enclosures should be avoided.

2(b) Use of different materials in barriers

Use of different materials in designing barriers at animal enclosures was discussed and it was decided to use many alternative materials like stainless steel mesh and posts, anodized aluminum frame, piano wire, hot wire (power fence), glass, vegetation, rail, invisible cattle grid type barrier.

2(c) Use of alternatives

No particular barrier can be specified for all situations. Different materials can be used either completely or in combination depending on the species, space, availability, topography, climate and existing display type of the zoo. There should be scope for innovation by the zoo management.

* * * * *

7 (k). Guidelines for the Utilization of Volunteers in Zoo Management in India

OBJECTIVES:

The purpose of the Zoo Volunteer programme is to render services to zoo in a voluntary manner for the purpose of assisting the management in its day to day function. The volunteer can participate in reception work/visitor management, zoo education programmes, maintenance work of the zoo and animal care and health management. Volunteers benefit by enriching their own experience and learning, while providing quality service to the zoo, which are short of adequate trained or qualified manpower.

VOLUNTEER WORK AREAS:

1. Manning the visitor information desk

Along with regular information centre staff, volunteer will act as an information resource for guests by providing directions, answering questions, and aiding in complaint resolution at the entrance and key positions throughout the Zoo. Assisting with administrative office functions for some specified areas relating to visitor control and management

2. Zoo education and awareness programme

The zoos most important mandate is Nature education and awareness. In order to assist in this work a volunteer requires an education training program. Those volunteers who can spare more time and are dedicated, should be encouraged for this activity. The zoo education staff will give specific training for this work. Information on Zoo mission, purpose, vision, goals and values and animal collection will be given, which will be then shared with general public around the Zoo. Other work involves aiding in the efficient entrance of school groups on days of high group attendance e.g. educational tours for students inside the animal exhibit area or guiding through interpretation center. A volunteer can also be engaged in providing running commentary on different biological aspects in a safari vehicle.

3. Gift Shop

Help in the gift shop with assisting customers and perform basic retail procedures.

4. Zoo maintenance work

There will be assignments that will come up randomly throughout the year

and will involve in Zoo animal enclosure area and public utility area cleaning, landscaping, sign boards' designing, etc

5. Children Playground Attendant

The playgrounds where the children play need assistance of supervisor and those who would like to help and entertain young children and take care of their safety can work here.

6. Special Events Volunteer

Help with annual/periodical/occasional events like Essay, painting and elocution competition and organisation of other special events organised by the zoo.

7. Substitute

Volunteer will be on call to come in when a need arises such as in situation where another volunteer is unable to make their scheduled time. Be trained in the numerous areas so that they can fill in or substitute when required.

8. Tour Guide

He/she will take groups around the premises and explain and interpret nature of the animal and exhibits to the visitor. This requires an outgoing, enthusiastic and dedicated individual.

9. Volunteer Management Team

Volunteers who have demonstrated a commitment to the Zoo may be asked to accept greater responsibility at the discretion of the Volunteer Coordinator.

10. Grounds Keepers

Assist Zoo Staff in improving and maintaining Zoo grounds and other outdoor projects throughout the year.

11. Animal Feed store

Assist in preparing the feed for supply to animals

12. Animal Healthcare

Assist in providing Veterinary care if you are a veterinarian or a trained paramedic (vet).

RECRUITMENT:

New Volunteers will be recruited through advertising in zoo website, print and electronic media. Those who have completed secondary school examination shall be eligible to act as volunteer. Those volunteering for specialised jobs requiring higher or specialised qualification should at least hold minimum qualification in that field. Test and Personal Interviews shall be conducted to select the volunteers. Prospective Volunteers will be required to complete an orientation process and complete an application form (**Annexure I**). An ID shall be issued to all volunteer.

1. Requirements

Applicants to the programme must be 18 years of age or older. An enthusiastic, friendly and positive attitude and the ability to work well with a diverse audience and under diverse and adverse condition is also required. All applicants must be cleared by a background check before they begin training.

2. Training

The Zoo Education Department shall be responsible for the orientation training of all Volunteers. Training sessions for new Volunteers shall be offered at least twice a year, the scheduling and content of which shall be planned by the Education wing. Continuing Education and Membership workshops and special sessions shall be held throughout the year. Workshops will be arranged by the Volunteer Education Committee. Social activities suited to the needs and interests of the Volunteers shall be planned throughout the year. In case of need, volunteer may be sent to the zoos/facilities in the same or other city for orientation to provide best exposure.

3. Time Commitment

Volunteers must work based on time commitment schedule, decided in consultation with volunteer and zoo volunteer programme co-ordinator.

Benefit to Volunteer

1. Special Awards Certificate of Participation

A zoo volunteer who has rendered service of at least 30 days during a period of one year will be granted a Certificate of Participation.

A Zoo Volunteer who has been active for two (2) or more consecutive years, and who has contributed exemplary and exceptional service to the Zoo,

may be granted special award. A committee shall be constituted to award certificate/recognition to eligible volunteers

2. Payment to Volunteers

Volunteering is an opportunity for people to give their time, energy and skills. Volunteers are entitled to out-of-pocket expenses for their volunteering activities. Where someone incurs expenses as a direct result of their volunteering activities they should be reimbursed. Out of pocket expenses for volunteers may include:

- travelling expenses to and from where they are working as a volunteer
- other subsistence costs – e.g. food and drink
- any special clothing and/or tools
- training

Organisations should ensure that they do not pay volunteers expenses at a flat rate, regardless of the actual expenses incurred; as this greatly increases the chance that the relationship will fall within the scope of regular employment. Payment of out-of-pocket expenses to a reasonable level is legitimate. Organisations should:

- produce detailed guidelines on expenses
- provide all volunteers with information about claiming out-of-pocket expenses
- provide budget for volunteers' expenses

3. Volunteer Out of pocket expenses

Amount of volunteer fees that a zoo should provide is limited to the prevailing schedule of rates for unskilled worker and travel cost from place of residence to the zoo by public transport. If food/meals are given to the volunteer its actual cost may be deducted from the out of pocket expenses.

Zoo may also opt some other suitable staff welfare scheme for the volunteer as well to encourage and boost their confidence in taking up assignments in the zoo. The volunteer must sign the Statement of Confidentiality and Organizational Ethics (**Annexure II**).

Selection/ re-engagement criteria:

Recruiting or re-engagement of any applicant or existing volunteer should not

be a matter of right if he/she is otherwise eligible. The zoo management shall reserve the right to accept any one or reject any application without assigning any reason for the same considering the sensitive nature of a volunteer's work and damage that can be caused by a undesirable applicant as he/she get access to all parts of the zoo and animals. Every effort should be made to see that the applicant posses right aptitude for such a job.

ZOO VOLUNTEER ETHICS NORMS AND CODE OF CONDUCT

The details on volunteer ethics and code of conduct have been elaborated in the **Annexure III**.

WARNING OF RISK

Despite being careful and proper preparation, instruction, medical advice, conditioning and equipment, there is still a risk of serious injury when providing volunteer services. Understandably, not all hazards and dangers can be foreseen. Volunteers must understand that depending upon the volunteer services, certain risks, dangers and injuries due to accidents, inclement weather, slip and falls, inadequate or defective equipment, failure in supervision or instruction, premises defects, horseplay, carelessness, lack of skill or technique, and all other circumstances inherent to the particular volunteer services exist. In this regard, it must be recognized that it is impossible for the Zoo to guarantee absolute safety.

WAIVER AND RELEASE OF ALL CLAIMS AND ASSUMPTION OF RISK

Those providing volunteer services will be expressly assuming the risk and legal liability and waiving and releasing all claims for injuries, damages or loss which they may sustain as a result of participating in any and all activities connected with and associated with volunteer services (including transportation services/vehicle operations, when provided). The volunteer will sign a waiver form to relinquish all claims (**Annexure IV**)

VOLUNTEER APPLICATION FORM

- Name:
- Father's Name:
- Date of Birth:
- Nationality:
- Address:
- City:
- Home Phone & E-mail:
- Cell Phone & Work Phone:
- Areas of Interest:
- Hours of service willing to render (Indicate days and month):
- Languages Spoken:
- Fluency in languages:
- Previous experience of voluntary service (NSS, NCC, NGO etc)

Background Information

Have you ever been convicted of a crime other than minor traffic violations?
Yes/No

- Offence Date
- Location Fine/sentence
- Are you currently on probation, parole, or awaiting trial?

Your application is subject to a complete background review including any criminal convictions.

Emergency Information (required):

- Name:
- Relationship:
- Home Phone: ()
- Mobile Phone: ()

- **ALLERGIC REACTIONS IF ANY**

The information in this application is true and complete, and I have not knowingly withheld any information. I understand that misrepresentation may be cause for dismissal. I authorize verification of all information contained in this application. I understand that as a volunteer at the Zoo I will be expected to demonstrate a commitment to uphold the mission of the organization, to maintain an environment of integrity for people and for animals, and to focus on customer service, with respect for all employees, volunteers and guests. As a volunteer at the zoo, I agree to follow all zoo guidelines and policies. In addition, I give consent to the Zoo to emergency medical attention in the event that I am not able to give consent, and if my emergency contacts are not available. I am aware that Zoo has the right to release me from service at any time, just as I have the right to withdraw from volunteer service at any time.

Volunteer Signature

Date

Note:

Please attach resume and certificate of voluntary service in any organisation

STATEMENT OF CONFIDENTIALITY AND ORGANIZATIONAL ETHICS FORM

I understand that all volunteers must hold Zoo information in strict confidence. This obligation of confidentiality must extend to the following areas of concern:

- Copyrighted materials and programs developed and used by the Zoo
- Personnel information
- Donation data base
- Financial or operational data
- Any sensitive animal information including escape situations
- Research project information

(Under no circumstances the volunteer shall discuss the above information with anyone, especially the media unless authorized to do so)

I agree that the above material is the property of the Zoo. I understand that the Director and his/her representative shall be the official spokesperson for the organization. I will neither disclose any information or materials to any persons who are not employees of the Zoo nor will I copy or remove the same from the premises of the zoo.

Volunteers shall follow a code of ethics that follows these guidelines:

- Volunteers shall conduct themselves at all times in a professional manner
- Volunteer are not to capitalize on their relationship with Zoo to further their personal or professional goals or gains, including areas of conflict of interest. These situations include but are not limited to promoting personal business opportunities.

I further understand that violation of any matters listed above may be grounds for dismissal.

I also certify that the information provided on this application is true and complete. False statements on this application shall be considered as grounds for termination. I also understand that this is not a paid position.

Signed _____

Date _____

ZOO VOLUNTEER ETHICS NORMS AND CODE OF CONDUCT

1. Dress Code

Since a volunteer is representing the Zoo, it is important that volunteer should dress appropriately for zoo activity. It is necessary to wear shoes and protective clothing whenever required and non revealing clothing.

2. Identification

Volunteer must wear photo ID provided.

3. Customer Service Standards

Being a Volunteer at Zoo means working with the public. Customer service is vital to the success of the visitor's experience and should be considered as number one priority. If a visitor approaches a volunteer, he/she should always greet them with a smile and offer assistance. If one cannot answer a particular question from a visitor he/she should find someone who can or direct them to the Reception officer at the front entrance. A volunteer should never ignore or be disrespectful to zoo guests.

4. Conduct

Zoo's Volunteer Program is highly regarded by staff and Volunteers alike and has a reputation for excellence. As a Volunteer staff member, a Volunteer's actions represent the Zoo and the Volunteer Program as a whole. Use of inappropriate language, drugs or alcohol, and fighting are all grounds for dismissal from the program. Any disputes or problems should be handled in a calm manner and should be reported to service or staff supervisor and the Volunteer Coordinator immediately.

Volunteers are important role models and often the most visible representatives of the Zoo. Guests learn a lot from their attitude, comments, and behaviour. It is expected that volunteer will behave in a manner that is appropriate to ones' Volunteer position at the Zoo.

The Zoo should be confident in professional abilities of all staff both paid and Volunteer. Everyone is expected to follow the same basic common sense rules of conduct that will protect the interests and safety of visitors, animals,

and organization. Certain actions and forms of behavior will not be tolerated and may result in disciplinary action, including dismissal. A determination of appropriate action will take into consideration the circumstances surrounding the incident and the Volunteer's overall record.

Disciplinary Policy

Verbal Warning:

Any complaint from a service area supervisor or other Zoo staff member will result in a meeting with the Volunteer Coordinator and verbal warning filed in the individual's file.

Written Warning

A second infraction will result in suspension from the program for a period of time to be determined by the Volunteer Coordinator and Education Curator. A written warning will be filed in the individual's program file.

Dismissal

A third infraction will result in dismissal from the program.

Dissatisfied Customers

Occasions arise when a visitor is harsh, discourteous, speaks in raised voice and abusive, volunteer should remain calm and handle the situation without being disturbed or agitated.

- Volunteer should take a deep breath, remember that the visitor is upset and deserves your attention
- He/she must listen to visitors patiently
- To the visitor, a problem is important even if it doesn't seem so to a volunteer.
- Problems with food products sold in the restaurant or kiosk can be directed to the restaurant staff.
- Problems with animal exhibits and visibility of animals should be explained
- Problem with zoo infrastructure and facility the volunteer may direct them to the executing staff

Lost Person Protocol

In the case of a child that is lost, please find the nearest staff member with a

wireless to initiate the search protocols. Please be aware that there is also a wireless at the entrance and office. It is important to stay in the area where the child/parent was last seen. Do NOT walk around the zoo with the child/parent looking for the lost person. The staff will look in the park and direct help to your location.

Unruly Guests

These persons could be rude to a volunteer or other visitors, feeding the animals, or doing things in the zoo that are not allowed (climbing over exhibit fences, harassing animals, etc.).

- This may be reported to the supervisor or another zoo staff/ personnel.
- If they are not available, it should be told to the receptionist or ticket booth staff. Zoo staff are the best people to deal with this type of situation.
- Unless a person or animal is in immediate danger, such miscreants should not be “reprimanded”.

Volunteering Around Children

When assisting with zoo classes or in any other areas of the Zoo, the following standards must be maintained at all times:

- When working with children in a classroom situation, a volunteer should always keep his/her voice calm. Never raise voice to a child.
- In a classroom situation, the Zoo staff person is the only disciplinarian unless a parent is present. A volunteer should not attempt to discipline a child at any time, either verbally or physically.
- The role of a volunteer is to support Zoo staff and to ensure a fun, safe atmosphere for the children.
- Do not touch a child under any circumstances for any reason.
- If a volunteer is on Zoo grounds and witness a child doing something which is not allowed (climbing over exhibit fences, harassing animals, etc.), He/she should tell the parent that the child's actions are not permitted within the zoo. If the behavior persists, a senior staff/ personnel should be told.

Zoonosis

Volunteers that handle animals do run the risk of acquiring/transmitting zoonotic diseases. Zoonotic diseases are those which are shared by man and

animals. All Volunteers that handle animals should adhere to the following procedures.

Volunteers that work in the animal care areas must produce a negative TB test annually. TB test results should be kept on file in the Volunteer office. Frequent hand washing and disinfecting of the environment is recommended as a way to prevent the transmission of zoonotic diseases.

Media

The Zoo Management must approve all media communications including, interview and/or article requests. If a volunteer is contacted by local media for an interview regarding Zoo, he/she notify the Volunteer Coordinator. If approached by a media representative while on zoo grounds, he/she should refrain from answering any questions or sharing his/her opinions on a zoo matter, unless it has been previously approved by a representative of the zoo management. Media requesting information from a volunteer should be directed to Reception at the entrance. Any unauthorized interview or attempt to contact a member of the media regarding any zoo business made by a Volunteer will result in immediate disciplinary action, not limited to but including dismissal from the Volunteer program.

Daily Work Routine

Sign-in/Out Procedures

Volunteers will report before the Education/volunteer coordinator/Reception officer

1. Upon Arrival

Volunteer will enter name, date, service area worked, and total hours worked on the Volunteer Hours book/ time sheets located in the Volunteer coordinator's office/ Reception office. Volunteer should sign-in on arrival and sign-out when leaving. From these time sheets, staff can compile monthly records of all Volunteer service areas. Signing in when volunteer arrives at the zoo enables the staff to locate him/her in the event of an emergency.

The volunteer should check bulletin board for updates/new information and then go to assigned work area.

2. Before Departing

Volunteer should check the schedule for any changes.

3. Protocols in case of illness or inability to work

In the event when a volunteer cannot come to work scheduled for him/her it should be informed to the Education/Reception officer

Disclaimer on risk and injury to volunteer

The volunteer programs and activities in a zoo are organized in a safe manner and zoo holds the safety of volunteers as of extreme importance. The Zoo should continually strive to reduce such risks and ensure all volunteers follow safety rules and instructions that are designed to protect the volunteer's safety. However, volunteers must recognize that there is an inherent risk of injury when choosing to volunteer for any activity or programme. Additionally, each volunteer is solely responsible for determining if he/she is physically fit and/or properly skilled for any volunteer activity. It is always advisable, especially if the volunteer is disabled in any way or recently suffered an illness, injury or impairment, to consult a physician before undertaking any physical activity.

* * * * *

Annexure IV

**FORM OF WAIVER AND RELEASE OF ALL CLAIMS
AND ASSUMPTION OF RISK**

I Mr/Ms (Name) have on my own will agreed to work as a volunteer in the (Name of Zoo) and recognize and acknowledge that there are certain risks of physical injury to volunteers in this programme/activity, and I voluntarily agree to assume the full risk of any and all injuries, damages or loss, regardless of severity, that I may sustain as a result of my volunteer services. I further agree to waive and relinquish all claims I may have (or accrue to me) as a result of my volunteer services against the zoo, including its officers, officials, agents, volunteers and employees.

I do hereby fully release and forever discharge the Parties ['zoo?'] from any and all claims for injuries, damages, or loss that I may have or which may accrue to me and arising out of, connected with or in any way associated with my volunteer services. I have read and fully understood the above important information, warning of risk, assumption of risk and waiver and release of all claims.

Signature, name and address of volunteer

Signature, name and address of witness 1

Signature, name and address of witness 2

7 (I). Guidelines for Developing Framework Mechanism for Mobilizing Financial Support for Supplementing Management of Zoos

Introduction:

The Zoos in India are mainly under the control of State Government, however, few zoos are managed by Municipal and private organisations. The Zoos are mainly located in the city suburbs with relatively large green areas and with a natural ambience. Zoos have transformed over the years from small menageries to Zoological park/ biological park where animals are exhibited in large naturalistic eco-system based enclosures. The zoos regularly attract large number of visitors as they exhibit animals not easily seen in the wild.

Zoos are conservation centres with a large potential to educate visitor and develop understanding and empathy for wildlife. They serve as institution of knowledge and learning about the life history of captive animals.

The zoos need to make their operations sustainable through judicious use of available resources, using various marketing tools to raise funds for attaining financial stability without compromising on the welfare of animals in their collections and conservation goals.

Organizations and individuals with a strong sense of responsibility towards nature and ecosystem integrity are keen to associate and donate funds for the development and growth of zoos. As most of the zoos are operated by governments, certain restriction on raising and utilization of such funds exists hence guidelines, procedures and mechanism may help the zoos in raising funds.

The zoos run by trusts and private sector may also use these guidelines for availing benefits. It is true that unless zoos have best marketing strategy they cannot tap the financial resources from the organizations and private individuals. Zoos can be self sustaining and financially stable if they can raise funds through innovative marketing. A workshop on marketing, fund raising, and resource management was organized by the Central Zoo Authority at Kolkata from 27th -30th April 2009 in collaboration with Zoological Garden, Alipore to discuss the marketing and fund raising opportunities for the zoos in India. More than 27 zoo directors and 2 International resource persons from Singapore attended the workshop. Following practices may be adopted in marketing and fund raising in zoos:

Zoos as Conservation Centres:

Zoos exhibit a large variety of wild animals with potential to attract visitors keen to know about the wildlife resource of our country. Zoos can be developed into knowledge houses by innovative nature education and interpretation strategy. Zoos can reach out to the general public, educational institutions and develop partnership in the field of wildlife conservation and education. The ex-situ and in-situ conservation linkages can be leveraged to make zoos centres for study and research on natural resource management. The zoos should formulate strategy to market itself through dissemination of information on its exhibits.

Zoos Finance Models:

Zoos have a large variety of animal housed in natural ecosystem based enclosures. The animals still maintain their natural traits in the restricted environment and are natural panorama of the wilderness. Zoos' advantage is the natural aesthetics and ambience which is lacking in urban areas and which people desire. The empathy towards animals and the sylvan- surrounding evoke the emotional cords of human beings and they begin to associate and identify themselves with the cause of conservation of species and habitat. Zoos' business model should reflect the natural yearning of human beings to conserve pristine habitats and wildlife

The sections of society, institution and organisation should have a means of knowing about the purpose, objectives and mandate of organisation. This can occur through dissemination of information not only through words of mouth but by a sustained effort through print and electronic media.

The zoos under Government control are not free to openly canvass for raising funds as the maintenance funds are allotted by Govt and the zoo managers do not consider it as important part of their activity. It is necessary that the state govt should explore avenues to make zoos self sustaining and financially sound so that the welfare of animals do not suffer.

SWOT Analysis

Each zoo should carry out a SWOT analysis and develop a financial business model based on its core strength and enter into a dialogue with organizations and private individuals to support the zoos for conservation. The zoos have to decide the marketing module best suited to their strengths. SWOT analysis can indicate your current position and the way forward. It can give insight to your strength, sphere of your excellence, your advantages, valuable

assets and resources, visitor perception of your strength. It can also give you areas of your weakness, where you can do better, locate your weak areas of management, your vulnerability. The opportunities in an ex-situ conservation facility with respect to Conservation breeding, education and research, green initiatives and education are immense and we need to capitalize on them. The zoos are facing criticism on Animal ethics and welfare and media perceive them as vulnerable entities. Internally and externally there are threats to its progress and growth in spite of good legislation, rules and guidelines. The zoos have to reorient themselves and incorporate significant changes in the outlook of the management and keep abreast with new technologies, concepts and ideas emerging in management of animals.

The first step towards economic viability of zoos is to:

Developing a Zoo Finance Model

Your business plan needs to cover the following:

- a. The market,
- b. Market segmentation,
- c. Consumer analysis,
- d. Competition,
- e. Zoo Activity features and benefits,
- f. Competitive analysis,
- g. Positioning,
- h. Advertising and promotion,
- i. Sales,
- j. Research and development, Operations,
- k. Visitors- the target group,
- l. Professional Financial Projections

This exercise will create a business model innovation; understanding the logic through which the business can create and deliver value for the customers/ clients.

Set up a Finance Unit

Zoos should first set up a separate unit deploying existing staff if available. In case expert opinion and advice is required, zoo should hire consultants to manage this unit.

The Important features for your Zoo Finance setting

- a. Clear Objectives
- b. Your Mission Statement
- c. Your Keys to Success

The business vision should be clear. How far you can work and achieve under the existing Govt norms. Do you need to set up a special purpose unit under a society model.? Will the state govt agree to this dispensation? How you can convince the govt to give you the powers to raise and deposit funds and also plough back and revolve the funds from entry fees and other collections. You have to develop the vision and strategy for management and business. For this set out the guiding principles and ethics.

Maximise Strengths

Location, surrounding, natural landscape and water bodies etc What is your zoo known for, your hallmark, find it, develop it and make your position statement in society. Develop rapport with other organisations private or govt in entertainment and allied sector. How your zoo has adapted to the changing role and philosophy about wildlife. What is your visitation and market share as compared to other natural landscapes and entertainment centres. How to increase your market share. You have to make the system of governance and management work for you. Your vision should be to become a major and important natural resource recreation and learning centre in your city with a top position. Most important is to develop your brand and then strategically associate and align with other supporting business (theme park, botanical garden, transport sector, caterers etc) What is your target audience, do you have a separate and exclusive niche audience .You may have to revise tariff rates and operating hours to strategically take your business forward.

Zoos Dilemma

The Govt zoos bound by rules framed for govt service, finance, maintenance procedures etc can not effect any changes deviating from govt procedures and feel themselves restricted in executing new ideas and business concepts. They need to form society and adapt elements of organizations management and ethics to produce results. Govt zoos have to learn to set up and operate towards achieving sound financial returns within the govt norms. This calls for a optimum, efficient and effective allocation of resources, a quick turn around time and growth of the zoo. The zoo manager should be more than an administrator, a business manager.

HRD-Training

The zoos have to work and invest in the staff on training and development as staffs are the most important assets that build an image of your organisation. Rude and discourteous staff can ruin any organisation Empower your staff with knowledge and efficiency of work, Provide appropriate courses, reward and grant incentives for enhancing performance.

Practices may be adopted for Marketing and Fund raising:

1. Marketing:

a. Effective marketing strategy.

All zoos in the country should formulate effective marketing strategy to popularize their zoos using exhibits, animals, landscape, vegetation, free ranging fauna, zoo events etc to attract visitors from all section of community. The market has several competitors so we must first assess our potential based on our objective and mandate and select our target group to deliver services in an efficient and effective manner. We should be clear as to our market segment and focus our energy to cater to this segment. Our market is the educational institutions, school and colleges, families from rural and urban areas, professional, executives and business sector. The organizations would like to expand knowledge of their work force and make them sensitive to animal conservation, efficient energy, alternate energy, pollution and other environmental concerns. Zoos are best placed to offer customized services and can develop natural resource knowledge and learning modules and impart knowledge through informal outdoor learning, including a judicious mix of fun entertainment and learning. Marketing principles requires to sell your zoo events and attractions much more than present levels and build your market share.

b. Image and brand building, including use of celebrities as brand ambassadors

The zoos should make their image and brand using various strategies e.g. role of zoo in conservation breeding of endangered species, captivity of endemic or exotic animals, specialized enclosures (walk in aviary, drive through enclosures), arrival of migrating birds, free ranging fauna etc. The image and brand of the zoo may further be built or upgraded involving celebrities as brand ambassadors from media, film industry, sports, social sector and even politician. Press will enhance your market if the zoos programmes are educative and enriches peoples experience. The zoo brands need to be developed to give it unique identity. Marketing communication will sell the

zoos activities to public. Develop stakeholders long term relationship for continued support. For brand selling a trained person is required as peoples interest in the zoo brands wane quickly. Strategic positioning and image rejuvenation is required all the time in this dynamic sector

The positioning and branding of the zoo activity features and exhibits with right names which attracts people can do wonders for your zoo image. Positioning zoo towards target audience can attract large number of people. Work out the unique selling proposition in consonance with the target audience. Make your zoo different from others. Brand is a unique image builder and connects to value, emotion etc and excites people and makes them loyal towards brand and people want it all the time.

c. Professionalism and transparency

In spite of your dedicated work in govt sector your integrity is at stake as people perceive govt working as not above board and manipulative. Therefore zoo should adopt professionalism and transparency while making & executing marketing strategy and generation of fund and its expenditure. Such zoos should constitute a governing body having representation of all stakeholders including donors in decision making of zoo management and implementation of such policy.

d. Use of signage, hoardings, print and electronic media

The zoo should have proper signage (directional, non directional, animal bearing signage, innovative signage), hoardings to make their image good before the public. Electric media can also play effective role in enhancing image of zoo in public.

e. Good public amenities

Public amenities in zoo also play big role in making its image in public hence zoo should ensure that public amenities of zoo are of best standard and accessible to all. The zoo should focus to have best toilet, visitor shed and drinking water facilities. Zoo moreover should have proper road, trails, and battery operated vehicles if zoo are large in size.

f. Sensitization of policy makers, bureaucrats

From time to time, zoo should organize meetings and seminar with the policy makers and bureaucrats to highlight achievement and their problems encounter in day to day and long term management and seek their intervention in solving such problem if so.

g. Strengthening of infrastructural facilities

To market the image, the zoo should have best infrastructural facilities e.g. good exhibits (enclosures), good visitor and service roads, drainage, rain water harvesting, veterinary hospitals with all desired equipments, store, kitchen, offices, disposal facility, and public amenities and staff quarters.

h. Postal stamps/currency to market the zoos

Zoo can request to government of India to issue stamps, currency to market the image of zoos and highlight the issues of ex-situ conservation of endangered species.

i. Zoos to have website

To furnish desired information to the visitors and other agencies, zoo should have their websites with up-to-date information including the grievances redress mechanism. This website can also have gate way of banking institution to receive fund online from individuals and organizations. Zoos should develop logo and tag line.

j. Add new attractions regularly

All zoos should keep adding new attractions to the visitors may be in the form of animals in their collection or events related to animals births, wildlife week celebrations, quiz programme, conservation education activities to school children, and other section of the society.

k. Friends of Zoo- Potential Donors

Zoos should identify potential donors organizations or individuals by inviting a them to events and functions of the zoo. Organizations who have evinced keen interest in donating funds for social and public causes can be introduced to zoos and its mandate informally so that they can develop a empathy for the zoo animals. A long term relationship can be developed by continuing to involve them in zoo related matters of interest to them. The donors choice regarding the area of support is important. The donors would like zoo management to ensure maintenance of standard and norms for animal care.

l. Donors conditions

The donors would require concessions and preferences with regard to entry in zoo and acknowledging their contribution and role which can be agreed by consultation within the ambit of the guidelines Possible request from donors are: waiver of entry fee, preferential entry, visit to enclosures, erection of

board with details of sponsors and acknowledging their role in the official website.

m. Networking with other sectors

There are amusement parks, museums and outdoor adventure activities which attract visitors and zoos which hold endangered and charismatic species struggle to increase visitation. We need to come out of isolation and work together with other natural amusement and entertainment centres Zoos need to network with tour operators, transporters, caterers, airlines and hotels as their clients can be made aware about the experience zoo offers. Further bundling with other local entertainment and amusement park will bring more business to zoo.

n. Zoo Tariff and pricing

Pricing the various activities and events offered to public has to be carefully done by looking at the price sensitivity of the target market audience. The capacity of the people to spend for such experience will vary depending on market place. The income of various income groups their priorities and willingness to spend for leisure is to be assessed. Comparative pricing of similar leisure activities viz watching cinema, amusement and theme park, museum, outdoor adventure activities are to be analysed before pricing. Differential pricing for Indians/ foreigners, school and college students, physically challenged have to be determined. Pricing on weekdays/week ends, school holidays/ govt holidays have to be determined. Dual Pricing on low and high seasons will enhance visitation. The operating hours can be changed based on seasonal exigencies. Dual pricing should be done in such a way that rural people are not discouraged rather visit to zoos in large groups and 'business model approach' has not forgotten the role of zoos towards educating rural people.

2. Fund raising:

Fund raising is an integral part of the zoo to make it self sustaining and financially sound. Govt rules do not encourage active fund raising events as done in foreign zoos. Considering the restriction imposed in Financial Rules of Government (GFR), if needed, it is advised that the zoos may have a Registered Charitable Society/ Foundation for receiving the funds from people and organizations for the better management. The many States have created zoo authorities to plough back the revenue generated by the zoo in terms of entry fee etc. for the better management of the zoo. The States who does not have State zoo authorities yet may constitute the same for

the purpose of fund raising and its utilization. It is observed due to lack of information or awareness, zoos don't know how to receive and utilize such fund. Following criteria may be adopted to raise the funds.

- a. The zoo should be allowed to raise & use funds by their respective operators or governments.
- b. The zoo may have a Registered Society/ Foundation comprised of all stakeholders to raise fund and utilize same for the development of zoos.
- c. Zoo should also be allowed to spend their revenue generated from ticketing.
- d. Funds or the services in the zoos may be generated using some of the below suggested ways:-
 - o Appropriate advertising in zoos by organizations.
 - o Making friends of zoos through charging fee.
 - o Outsourcing or establishing souvenir shops in zoos.
 - o Monetary donation from individuals and organizations.
 - o Monetary endorsement by organizations to zoos.
 - o Parking of vehicles.
 - o Endorsement from the organizations for certain services e.g. cleaning and hygiene in the zoo, road, enclosures, hospital and office maintenance in zoo premises.
 - o Zoo can also receive certain equipments as donation such as furniture, computer, and battery operated vehicle, veterinary equipments, stationary item, ticketing machine etc
 - o .Sponsorship for various activities viz transport, drinking water kiosk, education programme for school children, hygiene and health care of animals, uniform and other accoutrements for staff, medical camps etc
 - o Adoption of exhibits—providing feed for animals and maintenance of enclosure and health care etc
 - o Sponsoring conservation breeding programmes, ex-situ & in-situ conservation of animals, species recovery programme etc

- o Receive donation and wills
- o Special fund raising events for Environment protection and general conservation
- o Zoo can create a program aimed at connecting NGO's and government organizations with nature. More importantly, the program can show them a business case for improving the efficiency and green-energy of their operations. The strategy is to take executives out of the boardroom, bring them to the zoo and immerse them in a close-up encounter with endangered species, and provide workshops and presentations on innovations and new technology on green-energy, and the business' zoo ecological footprint.

3. Other Revenue generation options

Zoos should examine other revenue generation possibilities from serving/leasing rights to supply Food and Beverages, adoption of animals and sponsoring maintenance activities, photography, transport rides, entry to new attraction areas and overnight stay in zoo education centres etc Food and beverages should be of excellent quality in a natural setting, with specific themes so that the food becomes a unique zoo visit proposition. Research is required to cater the choice meals to customers. Outlets for distribution of Food and Beverages (cold drinks, tea, coffee etc.) should be appropriately spread in the zoo.

The role of the donor organizations/individuals in the management of zoo should also be clearly spelt out as without proper precaution they may likely unduly interfere in the internal management/administration of the zoo to the detriment of the stated objectives of the institution. While advertising on zoo signage or sponsoring structures/literature or adopting animals it should be ensured that their messages/ads/logos do not over shadow the zoo message/animals or zoo landscape. The zoo management should retain its discretion in the matter and there should clear guidelines for the same.

All zoos will develop protocol for receiving such aid, fix price or amount of different services and adoption of animals. All such aid will be entered into records and subjected to the audit. The zoo will have annual audit by competent authority for said grant and aid as well. Attempt should be made to deploy marketing professionals to market the image of zoo and raise of funds.

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7(m). Advisory - Banning Elephants from Zoo collections

Time and again, it has been brought to the notice of this Authority that the housekeeping of elephants in zoos leaves a lot to be desired, causing trauma to the animal. Elephant is a large megaherbivore, which is free ranging, cruising over long distances. There are very few zoos in the country, which have adequate space to permit free movement of elephants, as a result of which they are kept chained for long hours, causing stress to the animal. Further, more often than not, such captive elephants in zoos hardly breed. There are instances of zoo elephants coming in 'Musth' causing serious threats to visitors. The zoo management also has tremendous financial liability for the day-to-day maintenance/ housekeeping of elephants. There is very little scope for ex-situ linkage in the context of zoo elephants in India.

Considering the above, the following directives are issued:

- (i) Elephants are banned from zoo collections throughout the country with immediate effect. All captive elephants in zoos should be rehabilitated in elephant camps/ rehabilitation camps/ facilities available with the forest department at National Parks/ Wildlife Sanctuaries/ Tiger Reserves for departmental use.
- (ii) The guidelines/ precautions issued by this Authority for transporting zoo animals, time and again, should be strictly followed. The programme for transporting elephants should be drawn up in consultation with the Chief Wildlife Warden of the State, under whose supervisory control the said process should be conducted.
- (iii) The Central Zoo Authority would bear the cost for transportation of elephants in this regard, based on a proposal received through the Chief Wildlife Warden of the State.

* Issued to the Chief Wild Life Wardens of all States/ UTs vide Central Zoo Authority Letter No. 7-5/2006-CZA (Vol.II) dated 7th November, 2009.

7 (m) (i). Guidelines for management and maintenance of elephants in circuses

1. For the purpose of easy identification, each elephant should be implanted with microchips in consultation with the respective Chief Wildlife Warden of the State.
2. The elephants should be kept tied only in one leg with chain/ rope covered by leather tubes, the legs for tying may be kept changing.
3. Only in case of any elephant (male/female) is excited, irritated or creating any problem or in musth, the elephants should be more securely tied (may be tied on more than one leg) or other restraining measures can be taken.
4. Daily walk/ exercise for atleast two hours in the early morning hours should be given to the all elephants.
5. Tree fodder like peepal (*Ficus religiosa*), jamun (*Schizigium cumini*) and neem (*Azardiractha indica*) should be provided along with the branches.
6. Treatment records should be kept as per the proforma provided by the Central Zoo Authority.
7. Faecal samples of the animals should be examined periodically in the laboratory.
8. Screening against infectious and contagious diseases should be made regularly.
9. Birth, death and acquisition report should be submitted to the Central Zoo Authority at the end of each financial year.
10. The circus must procure a set of tranquilizing equipment with essential drugs for meeting the emergencies particularly when they have a young bull elephant which is coming to musth.

7 (m) (ii). Recommended guidelines during stakeholder meetings on “Elephants' Upkeep in Zoos” (held on 18.03.2013 & 25.10.2013)

1. CZA upholds ban on zoos that lack space and appropriate environment for housing elephants.
2. CZA bans further intake of elephants (except elephants rescued from the wild, confiscated and old / abandoned / abused elephants, as mentioned in CZA guidelines on dealing with rescued animals).
3. CZA may permit some zoos to house elephants subject to the zoo's willingness to provide increased area, a better environment, higher quality of welfare for elephants and comply with CZA guidelines and specific conditions laid down by CZA Sub-committee for the housing of elephants.
4. Zoos that are able to provide large forested/vegetated environment, lakes or water body, adequate space and expert veterinary support may be considered by CZA for retention of elephants provided the above conditions are met with.
5. Elephant enclosures in zoos should have a minimum of 1.2 acres per elephant. It is recommended to house elephants in small groups and not as single animals. This is in addition to the water body and confinement zone (where the elephant could be tethered for conditioning the elephants for easy handling for veterinary examination, bathing, foot care etc.) (or what is called the Elephant House).
6. Time period for compliance for zoos applying for retaining elephants is six months failing which they have to shift their elephants out of their zoos.
7. All elephant management practices followed at the zoo should conform to the needs of the elephants and not oriented towards visitors.
8. Using zoo elephants at temples, processions or riding is banned
9. The CZA guidelines for Elephant housing and management to be reviewed by the CZA sub-committee keeping in mind modern elephant management and training practices.
10. The CZA sub-committee may guide the zoos with regard to elephant management, design of elephant enclosures, humane training and handling methods, enrichment and keeper training.

11. CZA will subject zoos retaining elephants to regular evaluation to ensure compliance.
12. The Govt. of India and State Governments must initiate the establishment of ideal rescue centers that comply with guidelines.
13. The CZA may guide the zoos keeping elephants on their proper upkeep from time to time.
14. Allow the elephant with minimal interference of human being including Mahout/ keepers.
15. Elephants with human imprint should not be released back to the wild, such animals may be sent to elephant camps at National Parks and Wildlife Sanctuaries.
16. Regular training courses for Zoo Mahout should be taken by Central Zoo Authority every year.
17. Elephant riding by Mahout is not required all the time. Elephant should be allowed to walk on its own.
18. Chain (in case used) of the elephant should be covered by the fire hoses.
19. When the zoo is opened to the visitors, the Mahout should not be moving with the elephant.
20. The cleaning of enclosure should be completed before opening the zoo to the visitors.
21. Cambering of platform should be easy to getting up/ sleeping of elephants.
22. The food should be kept in different area of the enclosure in order to keep the elephants active and maximize the utilization of the animal enclosure.
23. The ground provided for housing elephants should be kuccha made of mud.
24. No chaining at the first instance, if required the elephants should be kept tied only in one leg with chain/ rope covered by leather tubes, the legs for tying may be changed alternately.
25. Only when any elephant excited, irritated or creating any problem or in musth, the elephants (male/ female) should be more securely tied (may

be tied on more than one leg) or other restraining measures can be taken.

26. Daily walk/ exercise for atleast two hours in the early morning hours should be given to all the elephants.
27. Tree fodder like peepal (*Ficus religiosa*), jamun (*Schizigium cumini*) and neem (*Azardiractha indica*) should be provided along with the branches.
28. Treatment records should be kept as per the proforma provided by the Central Zoo Authority.
29. Faecal samples of the animals should be examined periodically in the laboratory.
30. Screening against infectious and contagious diseases should be made regularly.
31. Birth, death and acquisition report should be submitted to the Central Zoo Authority at the end of each financial year.
32. The zoo must procure a set of tranquilizing equipment with essential drugs for meeting the emergencies particularly when they have a young bull elephant which is coming to musth.
33. The elephants housed in the Zoos should have a microchip implanted, the details should be submitted to the Central Zoo Authority.
34. Enrichment of Elephant Housing (Habitat-Forested/Vegetation, Social, Dietary, Water pools/lakes, logs, rock, timber, dry tree, sand and basking)

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7 (n). Policy on establishment of Dolphinarium

Time and again, it has been brought to the notice of this Ministry that the State Governments through various departments, organizations, tourism development corporations in particular, have been planning to develop dolphinarium in the State with main aim to attract tourism for commercial purpose with the intention of organizing dolphin show etc.

Whereas under Section 2(39) of Wild Life (Protection) Act, 1972 the definition of 'zoo' is given as an establishment, whether stationary or mobile, where captive animals are kept for exhibition to the public [and includes a circus and rescue centres but does not include an establishment of a licensed dealer in captive animals.]” and as such, the dolphinarium will fall under the definition of 'zoo',

Whereas as per 38H (1) of Wild Life (Protection) Act, 1972, no zoo shall be operated without being recognized by Central Zoo Authority and as per Section 38H (1A) a zoo shall not be established without obtaining prior approval of the Central Zoo Authority. Moreover, such zoo requires approval of the Hon'ble Supreme Court of India, in terms of the Order dated 20.11.2000 passed in W. P. No. 47/1998-Navin M. Raheja V/s Union of India and Ors.

Whereas as per Section 38H (4) of Wild Life (Protection) Act, 1972, no recognition to a zoo shall be granted unless the Central Zoo Authority is satisfied that it is for the interest of protection and conservation of wildlife, Whereas the Gangetic dolphin and Snubfin dolphin are listed in Schedule-I and all Cetacean species are listed in Schedule II part I of the Wild Life (Protection) Act, 1972,

Whereas Government of India has declared Gangetic Dolphin as its national aquatic animal with a view to protect these endangered species,

Whereas cetaceans in general are highly intelligent and sensitive, and various scientists who have researched dolphin behavior have suggested that the unusually high intelligence; as compared to other animals means that dolphin should be seen as "non-human persons" and as such should have their own specific rights and is morally unacceptable to keep them captive for entertainment purpose,

Whereas, cetaceans in general do not survive well in captivity. Confinement in captivity can seriously compromise the welfare and survival of all types of cetaceans by altering their behaviour and causing extreme distress.

Therefore, in view of the foregoing, the Ministry of Environment and Forests, Government of India have decided not to allow establishment of dolphinarium in the country. The State Governments are advised to reject any such proposal for dolphinarium to any person/persons, organizations, Government agencies, private or public enterprises that involves import, capture of cetacean species to establish for commercial entertainment, private or public exhibition and interaction purposes whatsoever.

This has the approval of Minister of State (Independent Charge), Ministry of Environment and Forests/ Chairperson, CZA dated 16.05.2013.

*Issued to the Chief Secretaries of all States, Principal Secretaries, Deptt. of Environment & Forests of all States/ UTs and Principal Chief Conservator of Forests & Chief Wild Life Wardens of all States/ UTs vide Central Zoo Authority Letter No. 20-1/2010-CZA, dated 17.05.2013.

7 (o). Suggested Health Monitoring Protocol for Zoos

Following are the overall suggestions and recommendations which can be implemented to zoos having the large felids:

1. Maintaining detailed information pertaining to a breeding/ studbook in a uniform manner helps proper selection of breeding population. It prevents inbreeding and gives chance for the expression of most of the founder gene.
2. Systemic and comprehensive recording of husbandry, medical and pathological data is essential in a uniform manner. The use of standardized computer programme (such as ARKS and MEDARKS from ISIS) is advisable.
3. The use of standard prescribed proforma for postmortem report, biological sample collection and dispatch is important.
4. Use of skin tattoos and/ or implanted transponders for proper identification of individual animal is recommended.
5. Properly designed housing facilities that cater the physical and psychological needs of the large felids should be used. The housing facilities should meet the standards prescribed by the Central Zoo Authority.
6. Since the feed given to large felids is meat, it is recommended to add 5 g calcium carbonate, 10 gm Di-calcium phosphate with every 2 kg, muscle meat. Whereas the addition of good quality 1.2 gm multi-vitamin-mineral powder is also advisable to meet the requirement of vitamins and minerals.
7. Feed should be thoroughly checked for quality and occasionally for laboratory examination to know the load of pathogenic micro-organism, Gross observations for presence of cyst and other contaminants should be done to prevent diseases.
8. The food preparation area should be clean and free from flies, insect pests as well as pathogenic microorganisms.

9. Transmission of pathogen should be minimized with proper hygiene and sanitation.
10. Regular disinfection of feed preparation area, feeding cubicles and utensils should be carried out. Use of ultra violet lights and fly/ insects repellents is highly recommended.
11. To control the spread of zoonotic diseases staff should be periodically screened for variety of condition. In case of cat keepers, annual tests should at least be carried out lot. Tuberculosis, toxoplasmosis and other communicable diseases.
12. Individual animal should be carefully observed every day for its physical state, food and water consumption, urination, defecation, alertness and activity. Similarly careful examination of an animal's den and enclosure can also be rewarding.
13. The observations made by the keeper/staff should be documented daily and presented to the veterinarian and supervisory staff for evaluation and for necessary actions.
14. Some animals are very shy or hyper excited, like mother with cub and pair during mating. During such occasions consideration should be given for the use of phones or even video cameras with which cats may be monitored remotely.
15. Whenever an opportunity arises, cats should be undergo a thorough physical examination. During such times, biological materials like blood, urine, feces and other body fluids may be collected for detailed laboratory examination (bacterial and parasitic isolation serological examination).
16. Periodic screening of all the animals for parasitic, bacterial and viral infections is essential part of health management. The faecal screening should be carried out every three month. There is a need of sero epidemiological survey of major viral diseases in large felids.
17. The collection and examination of blood samples for nutrients, parasites and body status is recommended every year. Whereas, bacteriological screening of animals for important bacterial pathogens should be carried out every six months.

18. On the basis of the report of parasitic study, the deworming should be carried out using suitable drugs. Even if no parasite are detected in the periodic screening it is recommended giving anthelmintics to all the animals every six months. At the same time alternative use of deworming drugs is essential to avoid drug resistance.
19. To control the entry of feral dogs, cats and mongoose, zoo and cage boundary should be made in such a way that it prevents entry of such animals.
20. The vaccination against Panleukopenia (Feline Distemper), Rhinotrachitis and Calici virus is recommended using Fel-O-Vax (Fort Dodge Alb inc.), The juveniles should be vaccinated at S, 12 and 16 weeks of age, and should be repeated at six months and then given annual booster.
21. A period of 30 days or more for quarantine is recommended for every animal entering the collection.

sd/-
(R.G. Jani)
Member

sd/-
(A.B. Shrivastav)
Member

sd/-
(L.N. Acharjyo)
Chairman

Date : 08.10.2004
Place : New Delhi

* Issued to the Chief Wildlife Wardens of all states and Director/ Curators/ Zoo-Incharge of all Large, Medium and Small Zoos having large Carnivores species vide letter No. 25-1/2002-CZA(M), dated 18.11.2004.

7 (p). Measures for preventing Avian Influenza

Incidences of avian influenza virus (bird flu) has been reported from the South-East Asian countries, which has affected domestic poultry. Human beings have also been reported to get infected by this disease which has led to deaths.

It is understood that the waterfowls are major reservoir of avian influenza virus. Keeping in view of the fact that during the months of September to December all the migratory waterfowls come to India for winter nesting, it will be advisable to take necessary precautionary measures for preventing exposure of the fowls being displayed in your zoos to the wild birds as well as to the keepers/personnel directly in-charge for handling of animals in the zoos. The animal husbandry department and the medical services department of your area may be approached for drawing up a suitable contingency plan to tackle any eventuality in this regard.

*Issued to Director/ Zoo Superintendent/ In-charge of Large, Medium and Small Zoos vide letter No. 25-1/2002-CZA(290)(M) dated 20.9.2005.

7 (q). CENTRAL GOVERNMENT ORDERS PROHIBITING SALE OF ANIMALS BY ZOO

No. 3-52/87-WL-I
Government of India
Department of Environment & Forests and Wildlife
(Wildlife I Section)
Paryavaran Bhavan, Phase II, C.G.O. Complex,
Lodhi Road, New Delhi

The 28th October, 1987

To

**The Forest Secretaries/ Chief Wildlife
Wardens of all states/ UTs.**

Subject: Requests for sale of animals to circuses-instructions regarding.

Sir,

Instances have come when the state Governments and Directors of Zoos have requested to allow them to sell their excess animals to circus parties on the plea that they are having excess of animals like lions, leopards and tigers etc. and due to limited accommodation, there excess animals are maintained in small cells. Moreover, feeding expenditure on these animals is also stated to be a problem. The matter was discussed in the meeting of the Expert Committee of Indian Board for Wildlife on zoos held on 15.1.1986. After careful consideration, it has been decided not to allow the sale of excess animals of Indian Zoos to Circuses. However, such zoos may exchange their excess animals with other Indian zoos authorized by Government of India or State Government/ Municipal Corporation. It would also be appropriate to curtail or stop breeding alongwith those animals which are getting surplus.

It is requested that above instructions may kindly be complied with.

No. 3352/87-WL-I
Government of India
Department of Environment & Forests and Wildlife
(Wildlife I Section)
Paryavaran Bhavan, Phase II, C.G.O. Complex,
Lodhi Road, New Delhi

Dated 14th November, 1990

To

The Chief Wildlife Wardens of all the States.

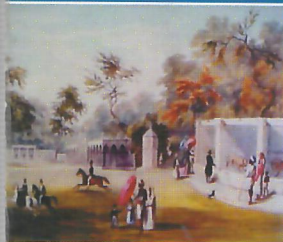
Sir,

We have received reports about some zoos entering into commercial transactions with private circuses for disposal of the zoos animals. Instructions have already been issued vide this Ministry's letter No. 3-55/87-WL-I, dated 28.10.87 that the zoos should not enter into any transactions of animals with the circuses/ private individuals. The surplus animals should invariably be disposed of through exchange programmes between different zoos. Population control measures should also be adopted in respect of the species which are breeding excessively.

2. It may be brought to the notice of the zoos that under section 49B of the Act there is a total ban on any commercial dealings of scheduled animals and any zoo carrying out commercial transaction in violation of scheduled animals would be liable for prosecution under the Act. Similarly, in respect of other animals also any dealings of wild animals can be done only under licence under section 44 of the Act. Therefore, the zoos are not entitled to carry out any trade in respect of any wildlife species. The violators of the provision of the Act would be liable for punishment under the Act. You may further ensure that while suitable action is taken against the defaulting zoos no legal certificate of ownership should be issued in favour of any circus or private individuals for the animals acquired from the zoos.

* * * * *

Edited and Revised by :
**B.S. Bonal, Inder Dhamija, B.R. Sharma,
S.C. Sharma, Brij Kishor Gupta**



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केन्द्रीय चिड़ियाघर प्राधिकरण

Central Zoo Authority

(STATUTORY BODY UNDER THE MINISTRY OF ENVIRONMENT,
FORESTS & CLIMATE CHANGE, GOVT. OF INDIA)