ZOOS - INSTRUMENT FOR CONSERVATION

NATIONAL ZOO POLICY AND STATUTES & GUIDELINES RELATED WITH ZOO MANAGEMENT

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

Published 1998
First revised : Jan. 2001
Second revised : Nov. 2004

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FOREWORD

The main objective of the Zoos is to provide visitors an exposure enabling them to live in harmony with nature and to know more about conservation efforts. We have to make concerted efforts to change the popular perception that Zoos are like jails where animals are incarcerated for life. Zoos have to increasingly become the medium for inculcating environmental responsibility, and wildlife conservation through breeding of critically endangered fauna.

The Central Zoo Authority (CZA) is working in this direction since February 1992. As per the amended Wild Life (Protection) Act 1972, now even the Circuses and Rescue Centres have been brought under the definition of "zoo". It has been the endeavour of the CZA 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/educational institutions on various aspects of Zoo management.

I hope this compilation on National Zoo Policy, Wild Life (Protection) Act, 1972 (relevant Sections only), Zoo Regulations and other relevant orders/decisions taken by the Government of India and Central Zoo Authority will help in better management of existing Zoos. This information would also facilitate improved designing of future Zoos in the country.

(A. Raja)

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Ministry of Environment & Forests
Resolution
New Delhi, the 28th October, 1998

National Zoo Policy, 1998

1. *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 scienfitic 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 behavioural 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 realised by Government of India soon after independence and the Indian Board for 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 emphasisted 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 habitat 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

(Published in Part II-Section 3 - Sub-Section (ii) of the
Gazzette of India-Extra Ordinary No. 708 dated 29th October, 1998

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 amendement 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 realised 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.

2. OBJECTIVES

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

2.1.1. Supporting the conservation of endangered species by giving species, which have no change of survival in wild, a last chance of survival through coordinated breeding under ex-situ conditions 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 data base 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 Governments and the Central Government would ascertain setting up rescue facilities in off-the-display areas of the zoo, subject to the availability of land.

3. STRATEGY FOR ACHIEVING THE OBJECTIVES

3.1. 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 masterplan 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. Zoo 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. Zoo 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 endeavour to avoid keeping single animals of non-viable sex ratio 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.

3.2. 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. Zoo shall not enter into any transaction in respect of their surplus animals with any commercial

establishment. Even the animal products should not be utilised to commercial purposes. The trophies of the animals could, however, be used for educational or scientific purposes.

3.3. Animal Housing

3.1.1. 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 animal a chance to display the wide range of their natural behaviour as well as protect them from extremes of climate.

3.4. 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 suply of potable drinking water shall be made available to all animals kept in the zoo.

3.4.3. With the objective of avoiding human imprinting and domestication of animals, zoos shall prevent physical handling or 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.

3.5. 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 also be taken to avoid further spread of disease.

3.6. Reserach and Training

3.6.1. The Zoos shall encourage reserach on the biology, behaviour,

nutrition and veterinary aspects of animals in their collection. They shall also endeavour 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 endeavour for transfer of technical skills available in the field for zoo personnel. The Central Government, Central Zoo Authority and State Governments shall provide due support to zoos in these efforts. Assistance of Wildlife Institute of India (WII), Indian Veterinary Reserach 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, news letters 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 Zoo Directors Association (IZDA) and other institutions in this regard.

3.7. Breeding Programme for Species

3.7.1. Before taking up breeding programmes of any species, zoos shall clearly identity 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. Programme 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 animals 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 avaoid human imprinting of the stocks raised for reintroduction purposes by providing off exhibit breeding facilities.

3.8. Education and Outreach Activity

3.8.1. Each zoo should have a drawn-up plan for educating the visitors as well as others in the community. Zoos shall keep a close liasion 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 the 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 educational material and audio-visual devices are proven methods for driving home the conservations message. A formal education programme should also be persued for strengthening the education message.

3.8.4. Besides the signanges, 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.

3.9. 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 Government and local authorities to create nature parks extending over extensive areas near big cities.

3.10. Amenities to Visitors

3.10.1. Zoos 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 the zoos.

Sd/-

(Vishwanath Anand)

Secretary to the Government of India

The Wildlife (Protection) Act, 1972
{Chapter - IV A}
Central Zoo Authority and Recognition of Zoos

38A. Constitution of Central Zoo Authority,*[1]-

(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.

(2) The chairperson or a member may, by writing under his hand, addressed to the Central Government, resign from the office of 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 convitced 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;

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* Chapter IV A inserted by Act 44 of 1991, sec. 26

*1 The Central Zoo Authority was constituted vide S.O. 113 (E) dated 3rd February, 1992 published in Part-II Section 3, Sub Section (ii) of the Extra-Ordinary Gazette of India, dated 3rd February, 1992.
Sec. 38B (1) amended vide notification dated 17.1.2003 effective from 1.4.2003

(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 the Cental Government, employ such officer 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 zoo;

(b) evaluate and assess the functioning of zoos with respect to the standards or the norms as may be prescribed.

(c) recognise or direcognize 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 reserch 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 these shall be credited thereto any grants and loans made to the Aurhority 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, officer 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 an 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.

39F. 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 Goverment, and the reasons for the non-accetance, 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 untill the said application is finally decided or withdrawn and in case

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* Sec. 38H. "eighteen months from the date of such commencement" after the words" recognised for a period of" substituted by Act 26 of 1993. sec. 2.

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 orperate 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 canceling 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.

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.

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* Sec. 38H. (IA) inserted vide notification dated 17.1.2003 effective from 1.4.2003.

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.

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* Sec. 38(I) (a) substituted vide notification dated 17.1.2003 effective from 1.4.2003.

Recognition of Zoo Rules, 1992 (with up to date Amendments)*

1. Short title and commencement

(1) These rules may be called the Recognition of Zoo Rules, 1992

(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 Wildlife (Protection) Act, 1972 (53 of 1972).

(b) "Enclosure" means any accommodation provided for zoo animals.

(c) "Enclosure barrier" means a physical barrier to contain an animal within an enclosure.

[1](d) "Endangered Species" means speies included in Schedule I and Schedule II of the Act except black buck.

[2](dd) "Critically endangered species" means an endangered species other than tiger, asiatic lion and panther whose total number in all zoos in the country put together does not exceed 200.

(e) "Form" means form set forth in Appendix A to these rules.

(f) "Performing purposes" means any efforts to force the animal to carry out unnatural act including performance of circus tricks.

[3](ff) "Rescue Centre" means an establishment for the care of animals specified in the Schedules to the Act and not open for exhibition to the public.

(g) "Stand-of-barrier" means a physical barrier set back from the outer edge of an enclosure barrier.

(h) "Zoo operator" means the person who has ultimate control over the affairs of the Zoo provided that:

(i) In the case of a firm or other association of individual, any one of the individual partners or members thereof shall be

*Recognition of Zoo Rules was first notified vide GSR 711(E) dated 4th August, 1992. Since then, it has been amended twice vide GSR 520 (E) and GSR 106 dt. 10.7.2003. dt. 6.2.2004 repeatedly.

[1]Substituted vide amendment rules 2001, w.e.f 10.7.2001

Substituted vide amendment rules 2004, w.e.f 6.2.2004

Inserted vide amendment rules 2004, w.e.f 6.2.2004

deemed to be the zoo operator.

(ii) In the case of a company, any director, manager, secretary or other officer, who is in-charge of an responsible to the company for the affairs of the zoo shall be deemed to be the zoo operator.

(iii) In the case of a zoo owned or controlled by the central Government or any State Government, or any local authority, the person or persons appointed to manage the affairs of the zoo by the Central Government, the State Government or the local authority, as the case may be shall be deemed to be the zoo operator.

3. *Application for Recognition*

An application under section 38H of the Act for recognition of a zoo shall be made to the Central Zoo Authority in Form A.

4. *Fees for Application*

a) There shall be paid in respect of every application under rule 3 a fee of rupees five hundred.

b) The amount of the fee shall be paid through Demand Draft/Postal Order(s) in favour of the Central Zoo Authority, New Delhi.

5. *Documents to be filed along with application and particulars it should contain*

Every application shall lbe accompanied by the prescribed fee and shall contain clear particulars as to the matters specified in Form A

6. *Power to make inquiries and call for information*

Before granting recognition to a zoo under section 38H of the Act, the Central Zoo Authority may make such inquiries and require such further information to be furnished, as it deems necessary, relating to the information furnished by the zoo in its application in Form A.

7. *Form of recognition*

The recognition granted to a zoo 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 prescribed or imposed under the provisions of the Act and these rules from time to time.

8. Renewal of recognition

a) Three months before the expiry of the period of recognition; a recognised zoo desirous of renewal of such recognition may make an application to the Central Zoo Authority in Form A.

b) The provisions of rules 3, rule 4, rule 5, rule 6, rule 7 shall apply in relation to renewal of recognition as they apply in relation to grant of recognition except that, the fee pay able in respect of an application for renewal of recognition shall be rupees two hundred.

9. Classification of zoos

For the purposes of deciding standards and norms for recognition of zoos and monitoring and evaluating their performance, the zoos, on the basis of area, number of animals, species, endangered species and number of animals of endangered species exhibited, shall be classified into four categories as specified below :

Category of the Zoo	**Large**	**Medium**	**Small**	**Mini**
Number of animal exhibited	More than 750	500-750	200-499	Less than 200
Number of species exhibited	More than 75	50-75	20-49	Less than 20
Number of endangered species exhibited	More than 15	10-15	5-9	-
Number of animals of endangered Species	More than 150	100-149	50-99	-

(9A) Central Zoo Authority may allow a mini zoo to keep animals of endangered species subject to the condition prescribed by it with regard to health, care, facilities and upkeep of animals including deployment of supervisory level staff including veterinarion.

10. Standards and norms subject to which recognition under section 38H of the Act shall be granted

The Central Zoo Authority shall grant recognition with due regard to the interests of protection and conservation of wildlife, and such standards, norms and other matters as are specified below:

General :

[1](1) The primary objective of operating and zoo shall be the conservation of wildlife and no zoo shall take up any activity that is not consistent with the well being of the wild animals.

(2) No zoo shall acquire any animal in violation of the Act or rules made there under.

[2](3A) No zoo shall allow any animal to be subjected to the cruelties prohibited under the "Prevention of Cruelty to Animals Act, 1960 (59 of 1960)".

[3](3B) Animals pertaining to species whose performance has been banned under the "Prevention of Cruelty to Animals Act, 1960 (59 of 1960)" shall not be transported from place to place:

Provided that such animals may be permanently kept by circuses at a place of their choice with suitable housing facility.

(4) No zoo shall use any animal, other than the elephant in plains and yak in hilly areas for riding purposes or draughting any vehicle.

(5) No zoo shall keep any animal chained or tethered unless doing so is essential for its own well being.

(6) No zoo shall exhibit any animal that is seriously sick, injured or infirm.

(7) Each zoo shall be closed to visitors at least once a week.

(8) Each zoo shall be encompassed by a perimeter wall at least two metres high from the ground level. The existing zoos in the nature of safaries and deer parks will continue to have chain link fence of appropriate designs and dimensions.

(9) The zoo operators shall provide

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[1]Substituted vide amendment rules 2004, w.e.f 6.2.2004

[2]Inserted vide amendment rules 2004, w.e.f 6.2.2004

[3]Inserted vide amendment rules 2004, w.e.f 6.2.2004

a clean and healthy environment in the zoo by planting trees, creating green belts and providing lawns and flower beds etc.

(10) The built up area in any zoo shall not exceed twenty five percent of the total area of the zoo. The built up area includes administrative buildings, stores, hospitals, restaurants, kiosks and visitor rest sheds etc. animal houses and 'pucca' roads.

(11) No zoo shall have the residential complexes for the staff within the main campus of the zoo. Such complex, if any, shall be separated from the main campus of the zoo by a boundary wall with a minimum height of two meters from the ground level.

[1](11A) Every zoo shall prepare a collection plant for animals to be housed and displayed in the zoo, keeping due regard to the availability of land, water, electricity and climatic condition of the area."

[2](11B) Rescue centres may accept wild animals brought to them under intimation to the Chief Wild Life Warden.";

Administrative and Staffing Pattern

[3](12) Every zoo shall have one full-time officer in-charge of the zoo. The zoo officer shall be delegated adequate administrative and financial powers to purchase feed and medicine and carry out emergency repair of animal enclosures, as may be necessary for proper upkeep and care of zoo animals.

[4](13) Every large, medium and small zoo shall have an official with masters degree in Wildlife Science / Zoology as a full time curator solely responsible for looking after the upkeep of animals and maintenance of animal enclosures.

(14) Each large zoo shall have at least two full-time veterinarians. Medium and small zoo shall have at least one full-time veterinarian. The mini zoo may at least have arrangement with any outside veterinarian for visiting the zoo every day to look after the animals.

[5](14A) Every zoo shall have veterinarians of following description and educational qualifications, namely:-

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[1]Substituted vide amendment rules 2004, w.e.f 6.2.2004
[2]Inserted vide amendment rules 2004, w.e.f 6.2.2004
[3]Substituted vide amendment rules 2001, w.e.f 10.7.2001
[4]Substituted vide amendment rules 2001, w.e.f 10.7.2001
[5]Substituted vide amendment rules 2004, w.e.f 6.2.2004

Category	Senior Veterinarian	Junior Veterinarian
Large Zoo	1	1
Medium Zoo	1	0
Small Zoo	1	0

Senior Veterinarian :Should have minimum educational qualification of B.V. Sc. & A.H. or equivalent with a minimum of 5 years experience of working in a zoo recognised by the Central Zoo Authority, and should be duly registered with the State Veterinary Council or Veterinary Council of India.

Junior Veterinarian : Should have minimum educational qualification of B.V.Sc and A.H. with diploma in zoo and Wildlife animal healthcare management or Masters degree in Wildlife Disease and management from a recognized University, and should be duly registered with the State Veterinary Council or Veterinary Council of India.";

Animal Enclosures - Design, Dimensions and other Essential Features

(15) All animal enclosures in a zoo shall be so designed as to fully ensure the safety of animals, caretakers and the visitors. Stand-of-barriers and adequate warning signs shall be provided for keeping the visitors at a safe distance from the animals.

[1](16). All animal enclosures in a zoo shall be so desinged as to meet the biological requirements of the animals housed therein. The enclosures shall be of a such size as to ensure that the animals get space for their free movement and exercise and the animals within herds and groups are not unduly dominated by individuals. In case of species, which cannot be kept in groups due to behavioural or biological reasons, separate enclosures shall be provided for each animal. The enclosures shall not be smaller than the dimensions given in Appendix II of these rules. These dimensions will not apply to circuses. However, when not in transit, "The circuses shall provide the animals space for movement and exercise,";

[2](16A) Zoo operators shall provide appropriate screening between the adjacent enclosures to safeguard against the animals getting exited or stressed because of the visibility of animals in other enclosures.

[3][4](17) The zoo operators shall

[1]Inserted vide amendment rules 2004 w.e.f 6.2.2004
[2]Inserted vide amendment rules 2001, w.e.f 10.7.2001
[3]Substituted vide amendment rules 2001, w.e.f 10.7.2001
[4]Substituted vide amendment rules 2004, w.e.f 6.2.2004

endeavour to simulate the conditions of the natural habitat of the animal in enclosures as closely as possible. Planting of appropriate species of trees for providing shade and shelters, which merge in the overall environment of the enclosures, shall be providedd. Depending upon the availability of land and technical feasibility, moat shall be provided as enclosure barrier.

[4](18) Every mammal in the zoo shall be provided food inside a feeding cell/retiring cubicle or feeding kraal. The number and size of feeding cells or kraals will also be such that the dominant animals do not deprive other animals from getting adequate food. The endangered mammalian species shall be provided individual feeding cells or night shelters of the dimensions as specified in Appendix I to these rules. Each cubicle or cell shall have resting, feeding, drinking water and exercising, facilities according to the biological needs of the species. Proper ventilation and lighting for the comfort and well being of animals shall be provided in each cell or cubicle or enclosure. These dimensions shall not apply to circuses in transit.

(19) Proper arrangement of drainage of excess of water and arrangements for removal of excreta and residual water from each cell / cubicle / enclosures shall be made.

(20) Designing of any new enclosures for endangered species shall be finalized with the approval of the Central Zoo Authority.

Hygiene, Feeding and Upkeep :

(21) Every zoo shall ensure timely supply of wholesome and unadulterated food in sufficient quantity to each animal according to the requirement of the individual animals, so that no animal remains undernourished.

(22) Every zoo shall provide for a proper waste disposal system for treating both the solid and liquid wastes generated in the zoos.

(23) All left over food items, animals excreta and rubbish shall be removed from each enclosure regularly and disposed of in a manner congenial to the general cleanliness fof the zoo.

(24) The zoo operators shall make available round the clock supply of potable water for drinking purposes in each cell/enclosure/cubicle.

(25) Periodic application of disinfectants in each enclosure shall be made according to the directions of the authorised veterinary officer of the zoo.

Animal Care, Health and Treatment

(26) The animals shall be handled

only by the staff having experience and training in handling the individual animals. Every care shall be taken to avoid discomfort, behavioural stress or physical harm to any animal.

(27) The condition and health of all animals in the zoo shall be checked every day by the person in-charge of their care. If any animal is found sick, injured, or unduly stressed the matter shall be reported to the veterinary officer for providing treatment expeditiously.

(28) Routine examination including parasite checks shall be carried out regularly and preventive medicines including vaccination be administrated at such intervals as may be decided by the authorised veterinary officers.

(29) The zoo operators shall arrange for medical check-ups of the staff responsible for upkeep of animals at least once in every six months to ensure that they do not have infections of such diseases that can infect the zoo animals.

(30) Each zoo shall maintain animal history sheets and treatment cards in respect of each animal of endangered species, identified by the Central Zoo Authority.

Veterinary Facilities

[1](31) Every large and medium zoo shall hae a full-fledged veterinary unit with basic diagnostic facilities, comprehensive range of drugs and a reference library on animal health care and upkeep. Each veterinary unit shall have isolation and quarantine wards to take care of newly arriving animals and sick animals as to minimize the chances of infections spreading to other animals of the zoo.";

[1](31A) Every zoo operator shall provide one qualified lab assistant /compounder for assisting the veterinarian in health care of the zoo animals.

[2](32) Every zoo shall have facilities for restraining and handling wild animals.

[3](33) The small and mini zoos where full-fledged veterinary unit is not available shall have at least a treatment room in the premises of the zoo where routine examination of animals can be undertaken and immediate treatment can be provided.";

[4](34) Any animal that dies in a zoo shall be subjected to a detailed post-mortem operation by a Veterinarian registered with State Veterinary Council or Veterinary Council of India and the findings of such operation shall be recorded and maintained for period of at least six years.

[1]Substituted vide amendment rules 2004, w.e.f 6.2.2004

[5](35) Each zoo shall have proper facility for disposal of carcasses without affecting the hygiene of the zoo. However, carcasses of large cats shall be disposed off only by burning in presence of director or an officer not below the rank of a curator duly authorised by the director.

Breeding of Animals

[6](36) Every zoo shall keep in its collection only such number of animals and such species for which appropriate housing facility exists. The zoo operators shall be responsible for ensuring that the number of animals of any species does not go beyond the holding capacity of the enclosures available in the zoo and housing standards are not compromised for keeping the excessive numbers.

[7](37) No animal shall be kept without a mate for a period exceeding one year unless there is a valid reason for doing so or the animal has already passed its prime and is of no use for breeding purposes. In the event of a zoo failing to find a mate for any single animal within this period, the animal shall be shifted to some other place according to the directions of the Central Zoo Authority.

(38) No zoo shall be allowed to acquire a single animal of any variety except when doing so is essential either for finding a mate for the exchange of blood in a captive breeding group.

[1](39) Every zoo shal participate in planned breeding programme of endangered species as approved by the Central Zoo Authority in consultation with the Chief Wild Life Warden of the State. For this purpose, zoo operators shall exchange animals between zoos, by way of breeding loans, gifts and the like as per the directions of the Central Zoo Authority.";

(40) To safeguard against uncontrolled growth in the population of prolofically breeding animals, every zoo shall implement appropriate population control measures like separation of sexes, sterilization, vasectomy and implanting of pallets etc.

(41) No zoo shall permit hybridization either between different species of animals or different races of same species of animals.

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[1]Inserted vide amendment rules 2001, w.e.f 10.7.2001
[4]Substituted vide amendment rules 2004, w.e.f 6.2.2004
[3]Substituted vide amendment rules 2004, w.e.f 6.2.2004
[4]Substituted vide amendment rules 2004, w.e.f 6.2.2004
[5]Substituted vide amendment rules 2001, w.e.f 10.7.2001
[6]Substituted vide amendment rules 2001, w.e.f 10.7.2001
[7]Substituted vide amendment rules 2004, w.e.f 6.2.2004

Maintenance of Records and Submission of inventory to the Central Zoo Authority

(42) Every zoo shall keep a record of the birth, acquisitions, sales, disposals and march of every year shall be submitted to the Central Zoo Authority by 30th April of the same year.

[2](43) Every zoo shall also submit a brief summary of the death of animals in the zoo for every financial year, alongwith the reasons of death identified on the basis of post-mortem reports and other diagnostic tests, by 30th April of the following year. In case of death of critically endangered species, a report along with details specified above shall be submitted to Central Zoo Authority within twenty four hours.

[3](44) Every zoo shall submit an annual report of the activities of the zoo in respect of each financial year to the Central Zoo Authority. With respect to mini zoos, a consolidated report may be submitted by the Chief Wild Life Warden of the respective state/U.T.

Education and Reserach

(45) Every enclosure in a zoo shall bear a sign board displaying scientific information regarding the animals exhibited in it.

(46) Every zoo shall publish leaflets, brochures and guidebooks and make the same availale to the visitors, either free of cost or at a reasonable price.

(47) Every large and medium zoo shall make arrangements for recording, in writing, the detailed observations about the biological behaviour population dynamics and veterinary care of the animals exhibited as per directions of the Central Zoo Authority so that a detailed database could be developed. The database shall be exchanged with other zoos as well as Central Zoo Authority.

Visitors Facilities

(48) The zoo operators shall provide adequate civic facilities like toilets, visitor sheds, and drinking water points at convenient places in the zoo for visitors.

(49) First-aid equipments including antivenom shall be readily available in the premises of the zoo.

(50) Arrangements shall be made to provide access to the zoo to disabled visitors including those in the wheel chair.

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[1]Substituted vide amendment rules 2004, w.e.f 6.2.2004
[2]Substituted vide amendment rules 2001, w.e.f 10.7.2001
[3]Substituted vide amendment rules 2001, w.e.f 10.7.2001

Development and planning

(51) Each zoo shall prepare a long-term master plan for its development. The zoo shall also prepare a management plan, giving detailed of the proposal and activities of development for next six years. The copies of the said plans shall be sent to the Central Zoo Authority.

[1](10A) Applicability of rule 10 in case of circuses and rescue centres.-

(1) In case of grant of recognition of circuses under rule 10, the provisions of clauses (8), (9), (10), (11), (17), (46), (47) and (51) thereof shall not apply.

(2) In case of grant of recognition to Rescue centres under rule 10, the provisions of clauses (10), (38), (46) and (51) thereof shall not apply."

[1]Inserted vide amendment rules 2004. w.e.f 6.2.2004

APPENDIX - A

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

FORM - A

To

The Member-Secretary
Central Zoo Authority
New Delhi

We want to get recognition under section 38H of the Wildlife (Protection) Act, 1972 in respect of_____ Bank Draft/Postal Order for Rs. 500/- drawn in favour of "Central Zoo Authority" is also enclosed. The required information in respect of _____ is as under :

1. Name of the zoo :
£2. Location of the zoo and Area :
3. Date of establishment :
4. Name of controlling authority 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 visitors during a calendar year :
7. Number of animals exhibited by the zoo :

Stock position during the current financial year

Number of species exhibited	Stock Position on the close of preceding year	Births	Acquistions	Deaths	Disposals	Stock as on the date of application
Mammals						
Birds						
Reptiles						
Amphibians						
Fishes and others						
Invertebrates						

£Circuses are to provide address of their main office.

**Rescue centres are not required to provide information

8. Total number of enclosures :

[¥](i) Open airmoated enclosures:

(ii) Closed cages/aviaries.

[$]9. List of endangered species bred during last 3 years.

10. Veterinary facilities :

(a) Whole time veterinarion availale 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
6. Dispensary
7. Nursery for hand-rearing animal babies
8. Pathological laboratory
9. Tranquilising equipments/ drugs

11. Whether the following facilities exist in the zoo:

(i) Kitchen

(ii) Food store

(iii) Deep freezer

(iv) Portable water facility

(v) Food distribution van/ ricksaw etc.

12. 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?

[¥]Circuses are not required to provide information

[$]Rescue Centres and Circuses are not required to provide information

*13 Amenties to visitors :

Whether :-

(a) Public facilities like toilets/ bathroom 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?

*14. Safety measures for visitors :

Whether :-

(a) Effective stand-of-barriers have been provided around enclosures?

(b) Adequate number of warning signboards exist?

(c) First-Aid measures are available?

15. Budget of the zoo for the last 3 years. Revenue Generated Grants received Total Expenditure.

16. Annual Report, Guide books, Brochure or any other publication (Copies enclosed)

$17. Master plan of the zoo (copy enclosed)

Signature of the Applicant

*Rescue Centres are not required to provide information.

$Rescue Centres and Circuses are not required to provide information.

APPENDIX - I

MINIMUM PRESCRIBED SIZE FOR FEEDING/RETIRING CUBICLE FOR IMPORTANT MAMMALIAN SPECIES OF CAPTIVE ANIMALS

Name of Species	[1]Size of the feeding/ cubicle/night Shelter (meters)		
	Length	Breadth	Height
Family - Felidae			
Tiger and Lions	2.75	1.80	3.00
Panther	2.00	1.50	2.00
Coloured Leopard & Snow Leopard	2.00	1.50	2.00
Small Cats	1.80	1.50	1.50
Family Elephantidae			
Elephant	8.0	6.0	5.5
Family Rhinocerotidae			
One-horned Indian Rhinoceros	5.0	3.0	2.5
Family Cervidae			
Brow antlered deer	3.0	2.0	2.5
Hangul	3.0	2.0	2.5
Swamp Deer	3.0	2.0	2.5
Musk Deer	2.5	1.5	2.0
Mouse Deer	1.5	1.0	1.5
Family Bovidae			
Nilgii tahr	2.5	1.5	2.0
Chinkara	2.5	1.5	2.0

Name of the Species	Size of the cubicle/ cubicle/night Shelter (meters)		
	Length	Breadth	Height
Family - Equidae			
Wild Ass	4.0	2.0	2.5
Family - Felidae			
All type of Indian Bears	2.5	1.8	2.0
Family - Canidae			
Jackal, Wolf and wild dog	2.0	1.5	1.5
Family - Vivirridae			
Palm Civet	2.0	1.0	1.0
Large Indian civet & binturong	2.0	1.5	1.0
Family - Mustellidae			
Otters All Types	2.5	1.5	1.0
Ratel/Hogbadger	2.5	1.5	1.0
Martens	2.0	1.5	1.0
Family - Procyonida			
Red Panda	3.0	1.5	1.0

[1]Substituted vide amendment rules 2001. w.e.f 10.7.2001

Name of Species	[1]Size of the feeding/ cubicle/night Shelter (meters)		
	Length	Breadth	Height
Four Horned Antelope	2.5	1.5	2.0
Wild Buffalo	3.0	1.5	2.0
Indian Bison	3.0	2.0	2.5
Yak	4.0	2.0	2.5
Bharal, Goral, Wild sheep, and markhor	2.5	1.5	2.0

Name of the Species	Size of the cubicle/ cubicle/night Shelter (meters)		
	Length	Breadth	Height
Family - Lorisidae			
Slow Loris and Slender Loris	1.0	1.0	1.5
Family Ceropithecidae			
Monkeys and Langurs	2.0	1.0	1.5

[1]Substituted vide amendment rules 2001, w.e.f 10.7.2001

APPENDIX - II

MINIMUM PRESCRIBED SIZE FOR OUTDOOR OPEN ENCLOSURE FOR IMPORTANT MAMMALIAN SPECIES OF CAPTIVE ANIMALS

Sl. No.	Name of the Species	Minimum size of outdoor enclosure (per pair)	Minimum area extra per additional animal
			Square meter
	Family - felidae		
1.	Tiger and Lions	1000	250
2.	Panther	500	60
3.	Clouded leopard	400	40
4.	Snow Leopard	450	50
	Family - Rhinocerotidae		
5.	One-horned Indian Rhinoceros	2000	375
	Family - Cervidae		
6.	Brow antlered deer	1500	125
7.	Hangul	1500	125
8.	Swamp deer	1500	125
	Family - Bovidae		
9.	Wild Buffalo	1500	200
10.	Indian bison	1500	200
11.	Bharal, Goral, Wild Sheep and Serow	350	75
	Family - Equidae		
12.	Wild Ass	1500	200

Sl. No.	Name of the Species	Minimum size of outdoor enclosure (per pair)	Minimum area extra per additional animal
			Square meter
	Family - Ursidae		
13.	All types of Indian bears	1000	100
	Family - Canidae		
14.	Jackal, Wolf and Wild dog	400	50
	Family - Procyonidae		
15.	Red Panda	300	30
	Family - Ceropithecidae		
16.	Monkeys and langurs	500	20

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. These animals may be kept in battery type enclosures of the dimensions suggested by the Central Zoo Authority.
3. The designs of enclosures for Schedule I species, not covered by this Appendix, should be finalised only after approval of the Central Zoo Authority.

Guidelines for Safari Parks which are Working either as Zoos or as Extension to Zoos*

For the purposes of these guidelines, safaries are specialised zoos where the captive animals are housed in any large naturalistic enclosures and the visitors are allowed to enter the enclosure to view the animals in a mechanised vehicle on a predetermined route from close quarters. These guidelines are not applicable to the self sustaining safaries which need much larger area.

It is also clarified that the guidelines are only in respect to the size of the enclousures and the precautions to be adopted while conducting inside the enclosure. The housing, upkeep and health care of the animals shall be regulated as per provisions of Recognition of Zoo Rules, 1992.

AREA :

The area of Sarai Park may be as large as possible. Minimum area of a safari for large Carnivores and for ungulates should be 20 hectares and 30 hectares respectively. As the number of animals in the safari increases, the area should be increased and it must be ensured that the biological requirements of the animals housed therein are fully met.

TOPOGRAPHY :

Topography should be undulating. It should not have steep slopes. It should be well drained.

ANIMALS :

Animals should be kept in viable and compatible groups. In case of large carnivores i.e. Lions a small viable pride and in case of Tigers a viable compatible group of two animals may be kept. Bears may be kept as compatible pairs or small groups.

Ungulates like Chital, Sambar etc. could be kept in viable herds, and groups. In case of primates (Rhesus, Bonnet Monkey's) a troop would be desirable. Care should be taken that the Safari Park is not overpopulated by any species in order to maintain the quality of its environment. In order to maintain hygiene and ensure ease of management, carnivores be fed in feeding areas and cubicles, prferably away from public scrutiny. Herbivores may be provided concentrates to maintain the vegetarian and other values of the Safari Park.

*Adopted in the meeting of CZA held on 21st November, 1996.

Adequate number of drinking water points with running supply of potable water for animals would be provided in the Safari. The water points should be naturalistic and merged with the overall environment of the enclosure.

It is preferable to bring in and hold carnivores during the night in the feeding cubicles for observation etc.

Flora :

The vegetation maintained in the Safari Park should be of an indigenous nature. The density could be regulated according to the needs of the species kept, and to provide naturalistic effect. It should provide shelters and withdrawal areas to the animals. It must be ensured that adequate tree cover is always maintained in the safaries.

FENCE/MOAT :

The area should be surrounded by a suitable peripheral chainlink fence/ wall. The chainlink or wall fence should be of a minimum height of 5 meter in case of large carnivoes, A 4 meter high non-scalable fence or wall should be kept for Bears (Sloth and Himalayan-Black Bear). In each case suitable bothway-overhang be provided at the top. For ungulates a 2.5 meter high chainlink fence preferably with overhangs be set-up as a peripheral fence. Suitably designed moats could also be used according to feasibility. In all cases the fence/moat should be safe at all times so that animals or people are not able to cross them. A buffer zone (strip) of about 5 meter width be provided around the fence area. Stray animals and unauthorised persons should not be allowed to enter this buffer zone. Double gates of suitable dimensions be provided at the points of entry. Safety gates may also be provided at a point nearly for service and emergency exists. Gates should be easily operable by one person at a time. Ticket booths and rest facilities may be provided at a short distance from the entrance in the buffer zone. Near the entrance a storeroom should be provided for storing of equipment etc, which are required for management of the parks to meet emergencies.

WATCH AND WARD :

For keeping an effective watch on the animals, visitors, as well as intrudes, at least one watch tower of about 5 meter height be provided preferably near the entrance which should be manned as long as animals are inside the Safari Park. Near the entrance a kiosk for the gate operator may be provided. At least other manned watch tower 5 meter height be set up at the remotest corners of the park.

VISITORS :

Visitors may be provided entry into the park in special vechicles run by the Safari Park operators, No visitor should be allowed inside any Safari Park on foot at anytime. Visitors should not be allowed to get out of the vehicle even in case of failure of the vehicle, till they are asked to do so by the authorised staff.

Visitors should be informed of the safety measures to be adopted in case of any emergency. Visitors should be prohibited from extending any part of their body outside the windows. They should also be asked to maintain silence so as not to provoke the animals when they are in the vicinity of the vehicles. The door of the vehicle should not be opened by the visitors.

VEHICLE

All vehicles should be mechanised ones, preferably vans. They should be run by the Safari Park operators, who should ensure that they are in good condition at all times. The windows and doors of the vehicles should be suitably barred to provided security to visitors. The safari operator shall ensure that the door of the vehicle carrying the visitors is always kept security locked so that no visitor can manipulate the locking system. The vehicle should have provision for attachment of another vehicle for pulling it out in case of failure without anybody getting out of the vehicle. It should have auxiliary gears for being used in unmade terrain, if required. The vehicle must also have first aid equipment in it.

LAYOUT OF ROADS :

A main road be laid out to cover most of the highlights of the park, but leving out certain withdrawal areas for the animals. It should be wide enough to allow two vehicles to cross each other. The road should not have steep gradients or sharp curves. It should be kept in good conditions at all times.

EQUIPMENTS :

The Safari Park shold have equipment for restraint of animals including capture guns along with accessories, drugs etc. for us in emegencies and routine operations. It should have the usual equipment for feed of animals etc.

it should also have firearms with ammunition to meet rare emergent and inevitable situations that may arise. However, these should anot be used exept as a last resort in emergencies. Safari Park should also have routine equipments like spades, sichaxes, saws, ropes and hooks etc. for maintainance as well as use in emergencies. Wireless

equipment should be provided to watchman, vehicles etc.

VETERINARY CARE :

The animals should be subject to routine veterinary care on a day to day basis and in accordance with the 'Recognition of Zoo Rules'. For this purpose the Safari Park should have a treatment room on or near the premises.

The animals should be subject to veterinary check everyday. Prohylactic and sanitary measures should be carried out on a periodic basis as per a written schedule.

MAINTENANCE OF RECORDS :

The Safari Park should maintain all records as envisaged in the 'Recognition of Zoo Rules' especially in case of endangered species.

EDUCATION :

Signboards should be setup near the entrance. These should give information regarding the biological as well as ecological facts about the animal species housed. Besides this, it would be useful if such information is presented in an appropriate manner during the drive inside the Safari Park to the visitors. Small pamphlets or handouts would also be given to the visitors, highlighting the Safari Park, the animals housed and their status and ecology in the wild.

OPERATION :

The frequency of vehicle entering into the Safari Park be regulated so that the animals are not unduly stressed. The vehicles should not be taken near the animals to say within a distance of 5 meters. Vehicle should move in a one way direction in a preset programme.

The double gates may be operated by one person, so that there is no misunderstanding or mistake. The vehicle driver, watchman and gate keepers should have wireless connection with the Safari Park Curator at all times.

GUIDELINES FOR SETTING UP OF DEER PARKS*

1. Area of the Deer Park should be atleast five (5) hectares.

2. The deer park should be at a reasonable distance from the residential accommodations and roads, so that the animals are not provoked unnecessary.

3. The Zoo/deer park should have a small treatment room.

4. The Zoo should have a post-mortem room.

5. Arrangement should be made with a Veterination to check the health of animals daily.

6. Arrangement for round the clock supply of potable water should be made in the animal enclosures.

7. The number of animals in the deer parks should not be more than one animal for larger ungulates and three animals per acre for smaller ungulates.

8. To safe-guard against inbreeding, periodic exchange of animals specially males, should be made with other zoos/deer parks.

9. Fodder trees and shade trees should be planted in the deer park area.

10. Night shelter/kraals should be constructed for the deers.

*Adopted in the 6th meeting of the Central Zoo Authority held on 8th November, 1993.

UPKEEP OF ELEPHANTS IN ZOOS*

The Central Zoo Authority in its meeting held on 25th August, 1994 has recommended that zoos should provide moated cubicles/night shelters for every individual elephant so that it is not necessary to keep the elephants chained most part of the day. No elephant except male elephant in "Musth" should be chained. Till the appropriate housing arrangements are not there, alll the zoos should use leather belts under the chain or any other protective device so that the elephants do not get injured as a result of being chained for long duration. Even if it is necessary to keep some elephants chained particularly those used for joy rides, it should be ensured that the chains do not have any spikes and are loose enough to allow elephants some movement.

*Issued to Directors/Curators of Large/Medium/Small Zoos vide Central Zoo Authority Letter No. 7-2/94-CZA (VK) Dated : 20-1-1995

POPULATION CONTROL MEASURES FOR* HYBRID LIONS AND TIGERS OF DOUBTFUL LINEAGE

The Central Zoo Authority has decided that the breeding of hybrid lions and tigers of unknown lineage should not be permitted under any circumstances because these animals are not of any conservation value.

The Authority has also recommended that population control measures in respect of prolifically breeding species like Tiger, Panther, Sambhar, Blue bull and and Chital. The optimum number of animals of each species in any Zoo is as follows :

Category of Zoo	**No. of Tiger/ Panther**	**No. of Blue Bull Chital, Sambar and Black Buck**
Large	10	20
Medium	6	12
Small	4	10

The Zoos who already have more animals than the number mentioned above should take immediate steps to stop further breeding of these species and try to transfer the excessive number to other Zoos.

The decision was made with a view to ensure proper utilisation of the Zoo resources. Feeding excessive number of animals is not only a drain on financial resources of the Zoo but also causes Management problems.

*Issued to Directors/Curators of Large/Medium/Small Zoos vide Central Zoo Authority Letter No. 7-2/94-CZA (VK) Dated : 7-2-1995

DISPOSING CARCASS OF ZOOS ANIMALS*

"The Technical Committee of Central Zoo Authority discussed the mode of disposal of carcasses of the animals that die in zoos. The normal method of disposal of carcasses should be either burying or burning.

Special care has to be taken in respect of carcasses of leopards, lions and tigers. These should be disposed of by burning in the presence of zoo directos themselves, so that the possibilities of skeleton/tophies being smuggled into illegal trade can totally be ruled out. Skinning of animals and procesing their skins for making trophies leads not only in wastage of government money but also involves the risk of some of these trophies beinbg smuggled into clandestine trade.

The carcasses of animals that die of anthrax or such other communicable diseases should be disposed of only by burying, without opening the body cavity."

*Issued to Directors/Curators of Large/Medium/Small Zoos vide Central Zoo Authority Letter No. 24-2/95-CZA dated : 24-1-1996

EUTHANASIA OF ZOO ANIMALS*

"The Central Zoo Authority in its meetins held on 25th August, 1994 has recommended that euthanasia of zoo animals may be carried out only in the specific circumstances when any animal is in such an agony or pain that it is cruel to keep it alive. The animal should not be euthanised without getting the animal examined by a team comprising of the Zoo Veterinarian, a member of the Society for Prevention of Cruelty to Animals (SPCA) wherever available" and a Senior Veterinarian, preferably a Professor in the neighbouring Veterinary College/Agriculture University. A member of the Animal Welfare Board may also be involved in such examination, wherever it is possible.

Compliance of the above recommendations of the Authority may be ensured while euthanasing any zoo animal."

*Issued to Directors/Curators of Large/Medium/Small Zoos vide Central Zoo Authority Letter No. 7-2/94-CZA (VK)dated : 20-1-1995

SUPPLY OF QUALITY FEED FOR ZOO ANIMALS*

It has been brought to the notice of the Central Zoo Authority that quality and wholesome feed is not being supplied in some of the zoos. The common refrain of the zoo management is that the procedure for procurement of feed items items entails accepting lowest quotation in the tender.

The procedure for procurement of feed needs to be reviewed by the concerned State Government Authorities. It is suggested that a system of tender may be introduced where in sample of various feed items and the price quotation thereof can be asked for in separate sealed envelopes. Price bids of only those tenderers may be opened whose feed samples are found to be of proper quality.

In case of meat supply for the tigers and other carnivores, such abatoir which does not have the valid licence from the concerned Municipal Corporation should not be allowed to participate in tender. The zoo authorities must ensure that meat which is duly stamped (certified) by the veterinarian of the concerned municipality is supplied to the zoo inmates. Necessary instructions on the lines may be issued to the concerned authorities.

*Issued to the Chief Wild Life Warden of all States/Union Territory vide Central Zoo Authority Letter no. 25-1/2000-CZA, dated 6-5-2000.

ESTABLISHMENT OF NEW ZOOS*

As per the provisions of the Wild Life (Protection) Act, 1972 (as amended in 1991) under which no zoo can be operated without recognition of the Central Zoo Authority, statutory organisation set up under the Act. The definition of the word 'Zoo' under the Act covers all mobile and stationary establishments other than circuses and establishments of licensed animal dealers, that exhibit animals included in the Schedules to the Act to the public. The zoos are required to get recognition from CZA for their operation. No zoo is entitled to operate without recognition from the Authority.

Operation of establishment covered under the definition of zoos and not appearing in the enclosed list is illegal. Action should be taken against management of any zoo not covered by this list for operationg in violation of the provisions of the Act. The Authority may be kept apprised of the action taken.

As per the directions of Hon'ble Supreme Court issued vide their judgement dt. 20-11-2000 no State Government or Union Territory shall set up a new zoo without gitting clearance from the Central Zoo Authority and orders from the Hon'ble Supreme Court.

*Issued to District Magistrate/Collectors of all states/u.t. vide Central Zoo Authority letter no. 11-4-2000-CZA, dt. 9-2-2001.

DISPLAY OF COMMON ANIMAL IN ZOOS*

"In the zoo directors meeting held in 2000 decided "since that resources becoming inereasingly scareer, therefore with a view to optimal utilization of the available resources, all zoos should phase out the domestic animals which do not serve the objective of wildlife conservation from their collection immediately. Hybrid specimen collections should not be bred and should be phased out".

In the light of the above observations, it has been decided that the following animals should not be kept in the collection of zoos :-

1. Rabbit
2. Guinea pig
3. Siamese cat
4. Goats
5. Camel
6. Ass/pony
7. Mithun
8. Horse
9. Sheep .
10. Rat
11. Mice
12. Bullock
13. Pigeons (blue rock and its hybrid)
14. Turkey
15. Bantam heb
16. Guinea fowl and its variants like polish and silky sidney
17. Domestic hen and its variants
18. Domestic ducks and its variants
19. Mongoose
20. Yak

*Issued to the Chief Wildlife Warden of all the states and Directors/Officer in charge of the zoos, vide Central Zoo Authority letter no. 11-4-2000-CZA dated 10-12-2001.

CONSTITUTION OF HEALTH ADVISORY COMMITTEE*

The Recognition of Zoo Rules prescribes standards and norms for health care, hygiene and upkeep of animals under Rule 10 (Norm Nos. 21 to 30). Central Zoo Authority carries out evaluation of Zoos with respect to compliance of these norms periodically, generally on every second year. However, there is no mechanism for regualr monitoring of compliance of these norms at the State level (except Orissa and National Zoological Park, New Delhi).

State Governments are, therefore, recommended to consititute Health Advisory Committee comprising of experienced Veterinarians with a mandate to advise the zoo managements in the state on animal health care and related matters. The Committee should visit zoos at least once every three months and monitor the compliance of the health care standards prescribed under the Recognition of Zoo Rules referred to above.

*Issued to the Chief Wild Life Wardens of all the states-vide CZA"s letter no. 7-12/2000-CZA (126) (N) dated 18/07/2002.

MONITORING OF HYGIENE AND INCIDENCE OF BLOOD BORNE DISEASE IN ZOOS*

In the wake of the death of large number of tigers at Nandankanan Zoo, Bhubaneswar in June-July, 2000, instructions were issued vide Reference No. 1 for carrying out measures for improvement of hygiene within the zoo around the animal enclosures and adopting preventive measures for disease control and health care of carnivores, particularly tigers, lions and leopards. The aforesaid instructions have been repeated vide Reference No. 2 & 3 above in subsequent years.

Compliance of aforesaid guidelines as indicated in the circulars referred to above has helped in reduction of the overall mortalities of carnivores in zoos in the country during the last two years.

The measures suggested in the guidelines are:

i) Improvement of hygiene of the animal enclosures and its surrounding viz removal of weeds and bush cutting to reduce the vector load, cleaning of moats and sewer lines and proper disposal of solid wastes.

ii) Screening of animals against ecto & endo-parastie infestation.

iii) Carrying out blood tests of animals of important species in a planned and systematic manner, without causing undue stress to the animals, with a view to identify incidence of blood borne parasites & take appropriate prophylactic/ remedial measures.

iv) Medicines of essential nature to be procured in reasonable quantities and kept in zoo hospitals to meet emergencies.

*Issued to all Director of Large, Medium, Small and Mini Zoo having lions, tigers and leopards in their collection vide CZA's letter no. 7-12/2000-CZA (N) dated 20-06-2003.

ARTICLE 9 OF THE CONVENTION ON BIOLOGICAL DIVERSITY*

EX-SITU CONSERVATION

Each Contracting Party shall, as far as possible and as appropriate, and predominantly for the purpose of complementing in-situ measures :

a) Adopt measures for the ex-situ conservation of components of biological diversity, preferably in the country of orign of such components;

b) Establish and maintain facilities for ex-situ conservation of and reserach on plants, animals and micro-organisms, preferably in the country of origin of genetic resources;

c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate coditions;

d) Regulate and manage collection of biological resources from natural habitats for ex-situ conservation purposes so as not to threaten ecosystems and in-situ pupulations of species, except where special temporary ex-situ measures are required under subparagraph (c) above, and

d) Cooperate in providing financial and other support for ex-situ conservation outlined in subparagraphs (a) to (d) above and in the establishment and maintenance of ex-situ conservation facilities in developing countries.

*Adopted at the Earth Summit of Rio de Janeiro in 1992.

IUCN TECHNICAL GUIDELINES ON THE MANAGEMENT OF *EX SITU* POPULATIONS FOR CONSERVATION*

PREAMBLE

IUCN affirms that a goal of conservation is the maintenance of existing genetic diversity and viable populations of all taxa in the wild in order to maintain biological interactions, ecological processess and functions. Conservation managers and decision-makers should adopt a realistic and integrated approach to conservation implementation. The threats to biodiversity *in situ* continue to expand, and taxa have to survive in increasingly human-modified environments. Threats, which include habitat loss, climate change, unsustainable use, and invasive and pathogenic organisms, can be difficult to control. The reality of the current situation is that it will not be possible to ensure the survival of an increasing number of threatened taxa without effectively using a diverse range of complementary conservation approaches and techniques including, for some taxa, increasing the role and practical use of *ex-situ* techniques.

If the decision to bring a taxon under *ex-situ* management is left until extinction is imminent, it is frequently too late to effectively implement, thus risking permanent loss of the taxon. Moreover, *ex situ* conservation should be considered as a tool to ensure the survival of the wild population. *Ex situ* management should be considered only as an alternative to the imperative of *in situ* management in exceptional circumstances, and effective integration between *in situ* and *ex situ* approaches should be sought whereever possible.

The decision to implement an *ex situ* conservation programme as part of a formalised conservation management or recovery plan and the specific design of and prescription for such and *ex-situ* programme will depend on the Taxon's circumstances and conservation needs. A taxon-specific conservation plan may involve a range of *ex-situ* objectives, including short-medium-and long-term maintenance of *ex situ* stocks. This can utlise a variety of techniques including reproduction propagation, germplasm banking, applied reserach, reinforcement of existing populations and re-introduction into the wild or controlled environments. The objectives and overall purpose shold be clearly stated and agreed among organisations participating in the programme, and other relevant stakeholders including landowners and users of the taxon involved. In order to maximise their full

potential in conservation, *ex situ* facilities and their co-operative networks shold adopt the guidelines defined by the Convention on Biological Diversity (CBD), the International Agenda for Botanic Gardens in Conservation, Center for Plant Conservation and the World Zoo Conservation Strategy, along with other guidelines, strategies, and relevant legislative requirements at national and regional levels. IUCN recognizes the considerable set of resources committed worldwide to *ex situ* facilities. The effective utilisation of these resources represents an essential component of conservation strategies at all levels.

VISION

To maintain present biodiversity levels through all available and effective means including, where appropriate, *ex situ* propagation, translocation and other *ex situ* methodologies.

GOAL

Those responsible for managing *ex situ* plant and animal populations and facilities will use all resources and means at their disposal to maximise the conservation and utilitarian values of these populations, including :

1) Increasing public and political awareness and understanding of important conservation issues and the significance of extinction;

2) Co-ordinated genetic and demographic population management of threatened taxa ·

3) Re-introduction and support to wild populations;

4) Habitat restoration and management;

5) Long-term gene and biomaterial banking;

6) Institutional strengthening and professional capacity building;

7) Appropriate benefit sharing;

8) Reserach on biological and ecological questions relevant to *in situ* conservation; and

9) Fundraising to support all of the above.

Ex-situ agencies and institutions must follow national and international obligations with regard to access and benefit sharing (as outlined in the CBD) and other legally binding instruments such as CITES, to ensure full collaboration with all range States. Prioritiy shold be given to the *ex situ* management of threatened taxa (according to the latest IUCN Red list Categories) and threatened populations

of economic or social/cultural importance. Ex situ programmes are often best situated close to within the ecogeographic range of target Taxa and where possible within the range State. Nevertheless a role for international and extra regional support for *ex situ* conservation is also recognised. The option of locating the ex situ programme outside the taxa's natural range should be considered if the taxa is threatened by natural catastrophes, political and social disruptions, or if further germplasm banking, propagation, reserach, isolation or reintroduction facilities are required and cannot be feasibly established. In all cases, *ex situ* populations should be managed in ways that minimize the loss of capacity for expression of natural behaviours and loss of ability to later again thrive in natural habitats.

TECHNICAL GUIDELINES

The basis for responsible *ex situ* population management in support of conservation is founded on benefits for both threatened taxa and associated habitats.

The primary objective of maintaining *ex situ* populations is to help support the conservation of a threatened taxon, its genetic diversity, and its habitat, Ex situ programme should give added value to other complementary programmes for conservation.

Although there will be taxa-specific exceptions due to unique life histories, the decision to initiate *ex situ* programmes should be based on one or more of the appropriate IUCN Red List Criteria, including :

1. When the taxa/population is prone to effects of human activities or stochastic events or

2. When the taxa/population is likely to become Critically Endangered, Extinct in the Wild, or Extinct in a very short time. Additional criteria may need to be considered in some cases where taxa or populations of cultural importance, and significant economic or scientific importance, are threatened. All Critically Endangered and Extinct in the Wild taxa should be subject to ex situ management to ensure recovery of wild populations.

Ex situ conservation should be initiated only when an understanding of the target taxon's biology and *ex situ* management and storage needs are at a level where there is a reasonable probability that successful enhancement of species conservation can be achieved; or where the development of such protocols could be achieved within the time frame of the taxon's required conservation management, ideally before the taxa becomes threatened in the wild. *Ex situ* institutions are strongly urged to develop *ex situ* protocols prior to any

forthcoming *ex situ* management. Consideration must be given to institutional viability before embarking on a long term ex situ project.

For these threatened taxa for which husbandry and/ or cultivation protocols do not exist, surrogates of closely related taxa can serve important functions, for example in research and the development of protocols, conservation biology research, staff training, public education and fundraising.

While some *ex situ* populations may have been established prior to the ratification of the CBD, all ex situ and in situ populations should be managed in an integrated, multidisciplinary manner, and where possible, in accordance with the principles and provisions of the CBD.

Extreme and desperate situations, where taxa/populations are in imminent risk of extinction, must be dealt with on an emergency basis. This action must be implemented with the full consent and support of the range State.

All *ex situ* populations must be managed so as to reduce risk of loss through natural catastrophe, disease or political upheaval. Safeguards include effective quarantine procedures, disease and pathogen monitoring, and duplication of stored germplasm samples in different locations and provision of emergency power supplies to support collection needs (e.g. climate control for long term germplasm repositories).

All *ex situ* pupulations should be managed so as to redufe the risk of invasive escape from propagation, display and reserch facilitis. Taxa should be assessed as to their invasive potential and appropriate controls taken to avoid escape and subsequent naturalisation.

The management of *ex situ* populations must minimise any deleterious effects of *ex situ* management, such as loss of genetic diversity, artifical selection, pathogen transfer and hybridisation, in the interst of maintaining the genetic integrity and viability of such material. Particular attention should be paid to initial sampling techniques, which should be designed to capture as mush wild genetic variability as practicable. *Ex situ* practitioners should adhere to, and further develop, any taxon-or region-specific record keeping and genetic management guidelines produced by *ex situ* management agencies.

Those responsible for managing *ex situ* populations and facilities should seek both to increase public awareness, concern and suport for biodiversity, and

to support the implementation of conservation management, through education, fundraising and professional capacity building programmes, and by supporting direct action in situ.

Where appropriate, data and the results of research derived from ex situ collections and *ex situ* methodologies should be made freely available to ongoing in-country manangement programmes concerned with supporting conservation of *in situ* populations, their habitats, and the ecosystems and landscapes in which they occur.

NB. Ex situ conservation is defined here, as in the CBD, as "the conservation of components of biological diversity outside their natural habitats". Ex situ collections include whole plant or animal collections, zoological parks and botanic gardens, wildlife research facilities, and germplasm collections of wild and domesticated taxa (zygotes, gametes and somatic tissue).

*Approved at the 14th Meeting of the Programme Committee of Council, Gland Switzerland, 10 December, 2002.

IUCN POLICY STATEMENT ON STATE GIFTS OF ANIMALS *

IUCN recognizes the long-standing tradition among governments and heads of state of giving or exchanging live animals, especially those of large and rare species, as tokens of esteem and for other reasons. Increased restriction on the transfer of animals under a wide range of national and international laws for species conservation and for veterinary health reasons have reduced, but not completely stopped, transfer as state gifts of animals of species under threat of extinction.

State gifts of living animals of threatened species, such as those recognized by IUCN as Rare, Vulnerable, or Endangered, should only made or accepted if they can be completely compatible with ongoing conservation programmes for the species involved, including captive breeding programmes. Such captive breeding programmes should conform with IUCN Policy Statement on Captive Breeding, 4 September, 1987.

Further, as a matter of trust and leadership in conservation, all transfers of animals as state gifts should adhere to national laws of the parties involved, as well as complying witht the requirements of international conservation conventions and, in particular, of CITES, the Convention on International Trade in Endangered Species of Wild Fauna and Flora. For CITES Appendix I species (and EEC Council Regulation 3626/82 Annex C1 species) the procedure laid down in Article III of CITES should be followed. in particular with regard to import permits and advice of the scientific authorities concerned.

*Approved by the 27th Meeting of IUCN Council, Gland Switzerland, 14 June 1989.

IUCN GUIDELINES FOR RE-INTRODUCTIONS*

INTRODUCTION

These policy guidelines have been drafted by the Re-introduction Specialist Group of the IUCN's Species Survival Commissions, in response to the increasing occurence of re-introduction projects worldwide, and cosequently, to the growing need for specific policy guidelines to help ensure that the re-introduction achieve their intended conservation benefit, and do not cause adverse side-effects of greater impact. Although IUCN developed a Position Statement on the Translocation of living Organisms in 1987, more detailed guidelines were felt to be essential in providing more comprehensive coverage of the various factors involved in re-introduction exercises.

These Guidelines are intended to act as a guide for procedures useful to reintrocution programmes and do not represent an inflexible code of conduct. Many of the points are more relevant to re-introduction using captive-bred individuals than to translocations of Wild Species. Others are especially relevant to globally endangered species with limited numbers of founders. Each re-introduction proposal should be rigorously reviewed on its individual merits. It should be noted that re-introduction is always a very lengthy, complex and expensive process.

Re-introductions or translocations of species for short-term, sporting or commercial purposes - where ther is not intention to establish a viable population-are a different issue and beyond the scope of these guidelines. These include fising and hunting activities.

This document has been written to encompass the full range of plant and animal taxa and is therefore general. It will be regularly revised. Handbooks for re-introducing individual groups of animals and plants will be developed in future.

CONTEXT

The increasing number of re-introductions and translocations led to the establishment of the IUCN Species Survival Commission's Re-introduction Specilist Group. A Priority of the Group has been to update IUCN's 1987 Position Statement on the Translocation of Living Organisms, in consulation with IUCN's other Commissions.

*Approved by 41st Meeting of Council, May 1995.

It is important that the Guidelines are implemented in the context of IUCN's broader policies pertaibable management of natural resources. The philosophy for environmental conservation bodies is stated in key documents such as "Caring for the Earth" and the "Global Biodiversity Strategy", which cover the broad themes of the need for approaches with community involvement and participation in sustainable natural resource conservation, an overall enhanced quality of human life and the need to conserve and, where necessary, restore ecosystems with regard to the latter, the re-introduction of a species is one specific instance of restoration of a species where, in general, only this species is missing. Full restoration of any array of plant and animal species has rarely been tried to date.

Restoration of single species of plants and animals is becoming more frequent around the world. Some succed, many fail. As this form of ecological management is in-creasingly common, it is a priority for the Species Survival Commission's Re-introduction Specialist Group to develop guidelines so that re-introductions are both justifiable and likely to succeed, and that the conservation world can learn from each initiatative, whether successful or not. It is hoped that these Guidelines, based on extensive review of case-histories and wide consultation across a range of disciplines will introduce more higher into the concepts, design, feasibility and implementation of re-introduction despite the wide diversity of species and conditions involved.

Thus, the priority has been develop guidelines that are of direct, practical assistance to those planning, approving carrying out re-introductions. The primary audience of these Guidelines is, therefore, the practitioners (usually managers or scientists), rather than decision-makers in governments, Guidelines directed towards the latter group would inevitably have to go into greater depth on legal and policy issuses.

1. Definition of Terms

(a) "Re-introduction" : an attempt to establish a species[2] in an area which was once part of its historical range, but from which it has been extirpated or become extinct[3]. (Re-establishment" is a synonym, but implies that the re-introduction has been successful).

(b) "Translocation" : deliberate and mediated movement of wild individuals to an existing population of conspecifies.

(c) "Re-enforcement/Suplementation" : addition of individuals to an existing population.

(d) "Conservation/Benign

Introductions" : an attempt to establish a species, for the purpose of conservation, outside its re-corded distribution but within an apropriate habitat and eco-geographical area. This is a feasible conservation tool only when there is no remaining area left within a species historic range.

2. *Aims and Objectives of Re-introduction*

(a) Aims : The principal aim of any re-introduction should be to establish a viable, free-ranging population in the wild, of a species, subspecies or race, which has become globally or locally extict, or extirpated, in the wild. It should be re-introduced within the species former natural habitat and range and should require minimal long-term management.

(b) Objectives : The objective of a re-introduction may include to enhance the long-term survival of a species; to re-establish a keystone species (in the ecological or cultural) in an ecosystem; to maintain and/or restore natural biodiversity; to provide long-term economic benefits to the local and/or national economy; to promote conservation awareness, or a combination of these.

3. *Multidisciplinary Approach*

A re-introduction requires a multidisciplinary approach involving a team of person drawn from a variety of backgrounds. As well as government personnel, they may include persons from governmental natural resource management agencies, non-governmental organizations, zoos (and private animal breeders) and/or botanic gardens, with a full range of suitable expertise. Team leaders should be responsible for coordination between the various bodies and provision should be made for publicity and public education about the project.

4. *Pre-Project Activities*

4a. *Biological*

(i) Feasibility study and background reserach

An assessment should be made of the taxonomic status of individuals to be re-introduced. They should preferably be of the same subspecies or race as those which were extirpated, unless adequate numbers are not available. An investigation of historical information about the loss and fate of individuals from the re-introduction area, as well as molecular genetic studies, should be undertaken in case of doubt as to individuals' taxonomic status. A study of genetic variation within and between populations of this and related taxa can also be helpful. Special care is needed

when the population has long extinct.

Detailed studies should be made of the status and biology of wild populations (if they exist) to determine the species' critical needs. For animals, this would include descriptions of habitat preferences, intraspecific variations, social behaviour, group composition, home range size, shelter and food requirements, foraging and feeding behaviour, predators and diseases. For migratory species, studies should include the potential migratory areas. For plants, it would include biotic and abiotic habitat requirements, dispersal mechanisms, reproductive biology, symbiotic relationship (e.g. with mycorrhizae, pollinators), insect pests and diseases. Overall, a firm knowledge of the natural history of the species in question is crucial to the entire re-introduction scheme.

* The species, if any, that has filled the void created by the loss of the species concerned, should be determined; an understanding of the effect the re-introduced species will have on the ecosystem is important for ascertaining the success of the re-introduced population.

* The built-up of the released population should be modelled under arious sets of conditions, in order to specify the optimal number and composition of individuals to be released per year and the numbers of years necessary to promote establshment of a viable population.

* A population and Habitat Viability Analysis will aid in identifying significant environmental and population variables and assessing their potential interactions, which would guide long-term population management.

(ii) Previous re-introductions

* Through reserach into previous re-introduction of the same similar species and wide-ranging contacts with persons having relevant expertise should be conducted prior to and while developing the re-introduction protocol.

(iii) Choice of relelase site and type

* The site should be within the historic range of the species. For an initial re-enforcement there should be few remnant wild individuals. For a re-introduction, there should be no remnant population to prevent disease spread, social disruption and introduction, of alien gens. In some circumstances, a re-introduction or re-enforcement may have to be made into an area which is fenced or otherwise delimited, but is should be within the species former natural habitat and range.

* A conservation/benign introduction should be undertaken only

as a last resort when no opportunities for re-introduction into the original site or range exist and only when a significant contribution to the conservation of the species will result.

* The re-introduction area should have assured long-term protection (whether formal or otherwise).

(iv) Evaluation of re-introduction site

* Availability of suitable habitat : re-introductions should only take place where the habitat and landscape requirements of the species are satisfied, and likely to be sustained for the foreseeable future. The possibility of natural habitat change since extirpation must be considered. Likewise, a change in the legal/political or cultural environment since the species extirpation needs to be ascertained and evaluated as a possible constraint. The area should of the re-introduced population and support a viable (self-sustaining) population in the long run.

* Identification and elimination, or re-duction to a sufficient level. of previous causes of decline : could include disease; over-hunting; over-collection; pollution; poisoning, competition with or predation by introduced species; habitat loss; adverse effects of earlier reserach or management programmes; competion with domestic livestock, which may be seasonal.

* Where the release site has undergone substantial degratation caused by human activity, a habitat restoration programme should be initiated before the re-introduction is carried out.

(v) Availability of suitable release stock

* It is desirable that souce animals come from wild populations. If there is a choice of wild populations to supply founder stoc for translocation, the source population should ideally be closely related genetically to the original native stock and show similar ecological characteristics (morphology, physiology, behaviour, habitat preference) to the original sub-population.

* Removal of individuals for re-introduction must not endanger the captive stock population or the wild source population. Stock must be guaranteed available on a regular and predicable basis, meeting specifications of the project protocol.

* Individuals should only be removed from a wild population after the effect of translocation on the donor populations have been assessed, and after it is guaranteed that these effet will not be negative.

* If captive or artifically propagated stock is to be used, it must be from a population which has been soundly managed both demographically and genetically, according to the principles of contemporary conservation biology.

* Re-introductions should not be carried out merely because captive stocks exist, not ready as a means of disposing of surplus stock.

* Prospective release stock, including stock that is a gift between governments, must be subjected to a through veterinary screening process before shipment from original source. Any animals found to be infected or which test positive for non-endemic or contagious pathogens with a potential impact on populations levels, must be removed from the consignment, and the uninfected, negative remainder must be placed in strict quarantine for a suitable period before retest. If clear after retesting, the animals may be placed for shipment.

* Since infection with serious disease can be acquired during shipment, especially if this is intercontinental, great care must be taken to minimise this risk.

* Stock must meet all health regulations prescribed by the vetrinary authorities of the receipient country and adequate provisions must be made for quarantine if necessary.

(vi) Release of captive stock

* Most species of mammals and birds rely heavily on indivual experience and learning as juveniles for their survival; they should be given the opportunity to acquire the necessary information to enable survival in the wild through training in their captive environment; a captive bred individual's propability for survival should approximate that of a wild counterpart.

* Care should be taken to ensure that potentially dangerous captive-bred animals (such as large carnivores or primates) are not so confident in the presence of humans that they might be a danger to local inhabitant and/or their livestock.

4b Socio-Economic and Legal Requirements

* Re-introductions are generally long-term projects that require the commitment of long-term financial and political support.

* Socio-economic studies should be made to assess impacts, costs and benefits of the re-introduction programme to local human population.

* A through assessment of

attitudes of local people to the proposed project is necessary to ensure long-term protection of the re-introduced population, especially if the cause of species decline was due to human factors (e.g. over-hunting, over-collection, loss or alteration of habitat). The programme should be fully understood, accepted and supported by local communities.

* Where the security of the re-introduced population is at risk from human activities, measures should be taken to minimise these in the re-introduction area. If these measures are inadequate, the re-introduction should be abandoned or alternative release areas sought.

* The policy of the country to re-introducton and to the species concerned should be assessed. This might include checking existing provincial, national and international legislation and regulation, and provision of new measures and required permits as necessary.

* Re-introductio must take place with the full permision and involvement of all relevant government, agencies of the recipient or host country. this is particularly important in re-introductions in border areas, or involving more than one state or when a re-introduced population can expand into other states, provinces or teritories.

* If the species poses potential risk to life or property, thes risks should be minimised and adequate provision made for compensation where necessary, where all other soloutions fail, removal or destruction of the released individual should be considered in the case of migratory mobile species, provisions should be made for crossing of international/state boundaries.

5 Planning, preparation and Release Stages

* Approval of relevant government agencies and land owners, and coordination with national and international conservation organizations

* Construction of a multidisciplinary team with access to expert technical advice for all phases of the programe.

* Identification of short-and long-term success indicators and prediction of programme duration, in the context of agreed aims and objectives.

* Securing adequate funding for all porogramme phases.

* Design of pre-and post-release monitoring programme so that each re-introduction is a carefully designed experiment, with the capability to test methodology with scientifically collected data. Monitoring the health of individuals

as well as the survival is important; intervention may be necessary if the situation proves unforeseeably favourable.

* Appropriate health and genetic screening of release stock, including stock that is gift between governments. Health screening of closely related species in the re-introduction area.

* If release stock is wild-caught, care must be taken to ensure that (a) the stock is free from infectious or contagious pathogens and parasites before shipment and (b) the stock will not be exposed to vectors of disease agents within may be present at the release site (and absent at the source site) and to which it may have no acquired immunity.

* If vaccination prior to release, against local endemic or epidemic diseases of wild stock or domestic livestock at the release site, is deemed appropriate, this must be carried out during the "Preparation stage" so as to allow sufficient time for the development of the required immunity.

* Appropriate veternary or horticultural measures as required to ensure health of released stock throughout the programme. This is to include adequate quarantine arrangement, especially where founder stock travels far or crosses international boundaries to the release site.

* Development of transport plans for delivery of stock to the country and site of re-introduction, with special emphasis on ways to minimise stress on the individuals during transport.

* Determination of release strategy (acclimatization of release stock to release area; behavioural traning - including hunting and feeding; group composition, number, release patterns and techniques; timing).

* Establishment of policies on interventions (see below).

* Development of conservation education for long-term support, professional training of individuals involved in the long-term programme; public relations through the mass media and a local community; involvement where possible of local people in the programme.

* The welfare of animals for release is of paramount concern through all these stages.

6. Post-Release Activities

* Post-release monitoring is required of all (or a sample of) individuals. This most vital aspect may be by direct (e.g. tagging, telemetry), or indirect (e.g.

spoor, informants) methods as suitable.

* Demographic, ecological and behavioural studies of released stock must be undertaken.

* Study of processes of long-term adaptation by individuals and the population.

* Collection and investigation of mortalities.

* Interventions (e.g. supplemental feeding; veterinary aid; horticultural aid) when necessary.

* Decisions for revision, rescheduling; or discontinuation of programme where necessary.

* Habitat protection or restoration to continue where necessary.

* Continuing public relations activities including education and mass media cover-age.

* Evaluation of cost-effectiveness and success of re-introduction techniques.

* Regular publication in scientific and popular literature.

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1. Guidelines for determining procedures for disposal of speciees confiscated in trade are being developed seprately by IUCN.
2. The taxonomic unit referred to throughtout the documents its species: it may be a lower taxonomic unit (e.g. sub-species or race) as long as it can be unambiguously defined.
3. A taxon is Extinct when there is no reasonable doubt that the last individual has died.

LIST OF ANIMALS

(Mammals, Birds, Reptiles and Amphibians)

UNDER SCHEDULE - I & SCHEDULE - II OF THE WILD LIFE (PROTECTION) ACT, 1972

SCHEDULES

SCHEDULE - I

(See sections 2, 8, 9, 11, 40, 43, 48, 51, 61 and 62)

Part I

MAMMALS

[1]{1. Andaman wild pig *(Sus andamanensis)}*

[2]{1A. Bharal *(Ovis nahura)}*

[2]{1B. Binturong *(Arctictis binturong)}*

2. Black buck *(Antelope cervicapra).*

3. Brow-antlered deer or thamin *(Cerous eldi).*

[3]{3A. Himalayan brown bear *(Ursus arctos)}*

[3]{3B. Capped langur *(Presbytis pileatus)}*

4. Caracal *(Felis caracal).*

[2]{4A. Catacean spp.}

5. Cheetah *(Acinonyx jubatus).*

[1]{5A. Chinese pangolin *(manis pentadactyla)}*

[1](5B. Chinkara or Indian gazelle *(Gazella gazella bennetti)}*

6. Clouded leopard *(Neofelis nebulossa).*

[2]{6A. Crab-eating macaque *(Macaca irus umbrosa)}*

[3]{6B. Deserat cat *(Felis libyca)}*

[3]{6C. Desert fox *(Vulpes bucapus)}*

7. Dugong *(Dugong dungon)}*

[2]{7A. Ermine *(Mustela erminea)}*

8. Fishing cat *(Felis viverrina).*

[1]{8A. Four-horned antelope *(Tetraceros quadricornis)}*

[3]{8D. Gangetic dolphin *(Platanista gengetica)}*

{8E. Gaur or Indian bison *(Bos gaurus}*

9. Golden cat *(Felis temmincki).*

10. Golden langur *(Presbytis geei).*

[3](10A. Giant squirrel *(Ratufa macroura)}*

[3]{10B. Himalayan ibex *(Capra ibex)}*

[3]{10C. Himalayan tahr *(Hemitragus jemlahicus)}*

11. Hispid hare *(Caprolagus hispidus).*

[2](11A. Hog badger *(Arctonyx colaris}*

12. Hoolock *(Hylobates hoolock).*

[1]{12B. Indian elephant *(Elephas maximus)}*

13. Indian lion *(Panthera leo persica)*

14. Indian Wild Ass *(Equus hemionus khur).*

[1]{15. Indian Wolf *(Canis lupus pallipes)*

16. Kashmir Stag *(Cervus elaphus hanglu)*

[2]{16A. Leaf monkey *(Presbytis phayrei)}*

[2]{16B. Leopard or panther *(Panthera pardus)}*

17. Leopard cat *(Felis bengalensis)*

18. Lesser or Red panda *(Ailurus fulgens)*

19. Lion-tailed macaque *(Macaca silenus)*

20. Loris *(Loris tardigradus)*

[1]{20A. Little Indian porpoise *(Neomeris phocaenoides)}*

21. Lynx *(Felis lynx isabellinus)*

22. Malabar civet *(Viverra megaspila)*

[1d]{22A. Malay or sun bear *(Helarclos malayanus)}*

23. Marbled cat *(Felis marmorata)*

24. Markhor *(Capra falconeri)*

[1]{24A. Mouse Deer *(Tragulus meminna)}*

25. Musk deer *(Moschus moschiferus)*

[1]{25A. Nilgiri Langur *(Presbytis johni)}*

[1]{25B. Nilgiri tahr *(Hemitragus hylocruis)}*

26. Nyan or great Tibetan sheep *(Ovis ammon hodgsoni)*

27. Pallas's cat *(Felis mamul)*

28. Pangolin *(Manis crassicaudata)*

29. Pygmy hog *(Sus salvanius)*

[2]{29A. Ratel *(Mellivora capensis)}*

30. Rhinoceros *(Rhinoceros unicornis)*

31. Rusty spotted cat *(Felis rubiginosa)*

[1]{31A. Serow *(Capricornis sumatraensis)}*

[1]{31B. Clawless otter *(Aonyx cinerea)}*

[1]{31C. Sloth bear *(Melasursims)}*

32. Slow Loris *(Nycticebus coucang)*.

[2]{32A. Small Travancore flying seuirrel *(Petinomys fuscopapillus)}*

35. Snow leopard *(Panther uncia)*

[1]{33A. Snub-fin dolphin *(Orcaella breverastris)}*

34. Spotted linsang *(Prionodon pardicolor)*

35. Swamp deer *(all sub-species of Cervus duvanceli)*

36. Takin or Mishmi Takin *(Budorcas taxicolor)*

[1]{36A. Tibetan antelope or chiru *(Panthelops hodgsoni)}*

[2]{36B. Tibetan fox *(Vulpes ferrilatus)}*

37. Tibetan Gazelle *(Procapra picticaudata)*

38. Tibetan Wild Ass *(Equus hemionus kiang)*

39. Tiger *(Panthera tigris)*

40. Urial or Shapu *(Ovis vignei)*

41. Wild Buffalo *(Bubalus bubalis)*

{41A. Wild Yak *(Bos grunniens)}*

[3]{41B. Tibetan wolf *(Canis lupus chanco)}*

[5]{42. Wroughton's free tailed bat *(Otomops wroughtoni)*

[5]{43. Salim Ali's fruit bat *(Latidens salimalii)*

Part II

AMPHIBIANS AND REPTILES

[1]{1. Agra Monitor Lizard *{Varanus griseus (Daudin)}*

[3]{1B. Audithia turtle *(Pelochelys bibroni)*

[3]{1C. Barred, oval, or yellow monitor lizard *(Varanus flavescens)}*

[3]{1D. Crocodiles (including the estuarine or saltwater crocodile) (*Crocodilus porosus and Crocodilus polustris)}*

[3]{1E. Terrapin *(Batagur baska)}*

[3]{1F. Eastern hill terrapin *(Melanochelys tricarinata)}*

2. Gharial *(Gravialis gangeticus)*

[4]{3. Ganges soft-shelled turtle *(Trionyx gangeticus)}*

[3]{3A. Golden gecko *(Caloductyloides aureus)}*

[4]4. Green sea turtle *(Chelonia mydas)*

[4]5. Hawksbill turtle *(Eretmochelys imbricata imbricata)*

[4]7. Indian egg-eating snake *(Elachistodon westermanni)*

[4]8. Indian soft-shelled turtle *(Lissemys punctata)*

[4]9. Indian tent turtle *(Kachuga tecta tecta)*

[3]9A. Kerala Forest Terrapin *(Hoesemys sylratica)*

[4]10. Large Bengal Monitor Lizard *(Varanus bengalensis)*

[4]11. Leathery turtle *(Dermochelys cariacea)*

[4]12. Loggerhead turtle *(Caretta caretta)*

[4]13. Oliveback loggerhead turtle *(Lepidochelys olivacea)*

[4]14. Peacock-marked soft-shelled turtle *(Trionyx hurum)*

[1]{14A. Pythons *(Genus python)}*

[3]{14B. Sail terrapin *(Kachuga kachuga)}*

[3]{14C. Spotted black terrapin *(Geoclemys hamiltoni)*

[1]{17A. Water Lizard (Varanus salvator)

Part III

BIRDS

[4]{1. Andaman teal *(Anas gibberifrons albogularis)}*

[1]{1A. Assam bamboo partridge *(Bambusicola fytchii)*

[4]{1B. Bazas *(Aviceda jerdoni and Aviceda leuphotes)}*

[4]{1C. Bengal florican *(Eupodotis bengalesis)}*

[1]{1D. Black-necked crane *(Grus Nigriocallis)*

[1]{1E. Bold pheasants *(ithaginis cruentus tibetanus, l.c. kuseri)}*

4. Cheer pheasant *(Catreus wallichii)*

[2]{2A. Eastern white stork *(Ciconia ciconia boyciana)}*

[4]{2B. Forest spotted owlet *(Athenc blewitti)}*

[3]{2C. Frogmouth *(Genus batrachostomus)*

3. Great Indian bustard *(Choriotis nigriceps)*

4. Great Indian hornbill *(Buceros bicornis)*

[2]{4A. Hawks *(fam, Accipitridae)*

4B. Hooded Crane *(Grus monacha)*

4C. Hornbills *(Ptilonemus tickelli austeni, Aceros nipalensis, Rhyticeros undulatus ticelmrsti)*

4D. Houbara bustard *(Chlamydotis undulata)*

4E. Humes bar-backed pheasant *(Syrmaticus humine)*

4F. Indian pied hornbill *(Anthracoceros malabaricus)}*

5. Jerdon's Courser *(Cursorius bitorguatus)*

6. Lammergeier (Gypaetus barbatus)

7. Large falcons *(Falco peregrinus, F. biarmicus, F. chicquera Chicquera)*

[4]{7A. Large whistling teal *(Anatidae)}*

[3]{7B. Lesser florican *(Sypheotides indica)}*

[3]{7C. Monal pheasants *(Lophophorus impeyanus, L. sclateri)}*

8. Mountain quail *(Ophrysia superciliosa)*

9. Narcondam hornbill *(Rhyticeros (undulatus) narcondami)}*

10. Nicobar megapode *(Megapodius freycinet)*

[4]{10A. Nicobar pigeon *(Caloenas nicobarica pelewensis)}*

[2]{10B. Osprey or Fish eating eagle *(Pandion haliactus)*

10C. Peacock pheasant *(Polyplectrou bicalcaratum)}*

11. Peafowl *(Pavo cristatus)*

12. Pink headed duck *(rhodonessa caryophyllacea)*

13. Scalater's Monal *(Lophophorus sclateri)*

14. Siberian White crane *(Grus leucogeranus)*

[4]{14B. Tibetan Snow cock *(Tetraogallus tibetanus)}*

15. Tragopan Pheasants *(Tragopan melanocephalus, Tragopan blythii, T. satya, T. temmincki)*

16. White bellied Sea Eagle *(Haliaetus leucogaster)*

17. White-earned Pheasant *(Crossoptilon crossoptilon)*

[4]{17A. White spoonbill *(Platalea leucorodia)}*

18. White winged Wood Duck *(Cairina scutalata)*

19. Swiftlets *(Collocalia unicolor and Collacalia fusiphaga)*

4{20. Hill myna *(Gracula religiosa intermedia, Gracula religiosn peninsularis, Gracula religiosa indica and Gracula religiosa andamanesis)*

4{21 Tibetan ear pheasant *(Crossoptilon harmani)*

4{22. Kalij pheasant *(Lophurs leucomelana)*

4{23. Lord Derby's parakeet *(Psittacula derbyana)*

4{24. Vultures *(Gyps indicus, Gyps bengalensis, Gyps tenuirostris)*

4{25. White bellied hereon *(Ardea insignis)*

SCHEDULES

SCHEDULE - II

(See Secs. 2, 8, 9, 11, 40, 41, 43, 48, 51, 61 and 62)

Part I

[4]{1A. Assamese macaque *(Macaca assamensis)*

2. Bengal porcupine *(Atherurus merourus assamensis)*

[4]{3A. Bonnet macaque *(Macaca radiata)}*

[3]{3C. Cetaean species *(other than those listed in Schedule I and Schedule II Part II)}*

[4]{4A. Common langur *(Preshytis entellus)}*

7. Ferret badgers *(Melogale moschata, Melogale Personata)*

11. Himalayan crestless porcupine *(Hystrix hodgsoni)*

[3]{11A. Himalayan newt or salamander *(Tyletotirton verrucosus)}*

16. Pig-tailed macaque *(Macaca nemestrina)*

[1]{17A. Rhesus macaque *(Macaca mulatta)}*

19. Stump-tailed macaque *(Macaca speciosa)*

22. Wild dog or Dhole *(Cuon alpinus)*

1{24. Chameleon *(Chameleo calcaratus)*

25. Spiny-tailed lizard or sanda *(Uromastix hardwickii)*

Part II

Beetles

[3]{1A. Civets (all species ofViverridae except Malabar civet)

[3]{1B. Common fox *(Vulpes bengalensis)*

[3]{1C. Flying squirrels (all species of the genus Bulopetes, petaurisata, Belomys and Eupetaurus)}

[1]{1D. Giant squirrels *(Ratufa macroura, Ratufa indica and Ratufa bicolor).*

3{2. Himalayan Brown Bear *(Ursus arctos)*

2{2A. Himalayan black bear *(Selenarctos thibetanus)*

3{2B. Jackal *(Canis aureus)*

3{2C. Jungle cat *(Felis chaus)*

3{2D. Mamots *(Marmota bobak himalayan, Marmota caudata)*

3{2E. Martens *(Martes foina intermedia, Martes flavigula, Martes gwatkinsii)}*

1{4. Others *(Luthra, Luthra perspicillata)}*

3{4A. Pole cats *(Vormela peregusna, Mustela putorius)}*

2{4B. Red fox *(Vulpes vulpes, Vulpes montana, Vulpes griffithi, Vulpes pusilla)}*

1{5. Sperm whale *(Physeter macrocephalus)}*

{7. (Weasels *(Mustela sibirica, Mustela kathian, Mustela altaica)}*

8. {Checked keelback *(Xanochrophis piscator)*

9. Dhaman or rat snake *(Ptyas mucosus)*

10. Dog-faced water snake *(Cerberus rhynchops)*

11. Indian cobras (all sub-species belonging to genus Naja)

12. King Cobra *(Ophiophagus hannah)*

13. Olivaceous keelback *(Artretium schistosum)*

14. Russel's Viper *(Vipera ruselli)*

15. Varanus species (excluding yellow monitor lizard)

7{16. Mongooses *(All species of genus Herpestes)*

7{17. Grey jungle fowl *(Gallus sonnerati)*

Laboratory for Conservation of Endangered Species (LaCONES)

In order to make use of biotechnological intervention for the conservation of endangered animals (lions, tigers etc.), it was decided in 1998 to undertake the Project of Laboratory for Conservation of Endangered Species (LaCONES) with the collaboration of three parties, e.g. the Department of Biotechnology (DBT), Central Zoo Authority (CZA) and the Government of Andhra Pradesh. The genesis of establishment of LaCONES, however, goes back to 1993 when certain attempts were made to take out the genetic material out of the country which were stalled by Ministry of Environment & Forests. It was at this stage that the Ministry of Environment & Forests carried out an exercise to locate a suitable institute to undertake DNA characterization and cryo-preservation of the samples. Centre for Cellular & Molecular Biology (CCMB), Hyderabad, a centre of excellence under the (CSIR) Council of Scientific & Industrial Research, was identified by the Ministry for carrying out this work.

The objectives of setting up the Project are as under :

1. **Monitoring of Genetic variation by modern techniques such as DNA fingerprinting :**

   In order to understand distribution of genetic variation among populations and the relationship among individuals within the population. Further, these techniques can be used in the area of wildlife forensic.

2. **Establishment of cell/gene resource bank :**

   By developing methods for cryo-preservation of cells and semen, eggs and embryos of endangered species. These cells preserved under appropriate conditions could be used in the future for various purposes including cloning.

3. **Semen analylsis :**

   In order to study the seminal profile for selecting animals for breeding programme.

4. **Determination of ovulation :**

   To achieve success in artificial insemination as well as captive breeding.

5. **Artificial insemination (AI) :**

   Although well established in case of domestic animals, this technique needs to be standardized for use in wild animals.

   The main thrust will be on non-surgical AI which is ideal for zoo conditions. Other options will be intrauterine insemination flowing laparoscopy / laparotomy.

6. ***In vitro fertilization* (IVF) and embryo transfer :**

   Involves fusion of spermatozoon with oocyte carried out in vitro and the transfer of the resulting embryo to the true or surrogate mother, or

its cryo-preservation for future.

7. **Cloning :**

This technology would be developed only for those species, which are highly endangered or in case of an already extinct animal like the Cheetah.

Centre for Cellular & Molecular Biologoy (CCMB) has agreed to undertake analysis of samples of wild animals like blood, bones or any other biological material in matter of court cases, scientific projects etc. The CCMB would charge Rs. 3000/- for analysis of each sample. Getting the biological samples analysed within the country in an institution under CSIR would also ensure that no biopiracy of such materials takes place.

Zoo may avail this facility. The persons who should be contacted for the purpose are following :

Dr. Lalji Singh
Director
Centre for Cellular & Molecular Biology (CCMB),
Uppal Road,
Hyderabad - 500 007

or

Dr. S. Shivaji
Dy. Director
Centre for Cellular & Molecular Biology (CCMB),
Uppal Road,
Hyderabad - 500 007

E-mail : lalji@ccmb.ap.nic.in
shivaji@ccmb.apl.nic.in
Phones : 040-27160789
Fax : 27160252, 27160591
27160311

* Directive issued to the Chief Wildlife Warden of all the States vide letter no. 26-6/99 CZA (Vol.-II) dt. 26/9/2001.

NATIONAL ZOO ANIMAL HEALTH CO-ORDINATED PROJECT SPONSORED BY CENTRAL ZOO AUTHORITY

With a view to provide specialized services, the Central Zoo Authority has entered into MoU with six Veterinary Institutes / Universities for diagnosis of diseases under National Zoo Animal Health Coordinated Programme. The Zoos may get in touch with the following centers in carrying out diagnosies of diseases infecting wild animals in their zoos.

S. No.	Name of the Coordinating Institution/University	City/State	Zone
1.	Dean Faculty of Veterinary & Animal Husbandry Orissa University of Agriculture & Technology	Bhubaneswar, Orissa	EAST
2.	Coordinator Wildlife Health Veterinary College Gujarat Agricultural University	Anand, Gujarat	WEST
3.	Principal Scientist & In-charge, Centre for Wildlife- Conservation Management & Disease Surveillance Indian Veterinary Reserach Institute, Izatnagar	Bareilly, Uttar Pradesh	NORTH
4.	Dean, College of Veterinary Science Assam Agriculture University, Khanpara	Guwahati, Assam	NORTH EAST
5.	Director of Research Sher-e-Kashmir University of Agricultural & Technology, Railway Road.	Jammu, J & K	NORTH
6.	Project Coordinator, Department of Wildlife Sciences Tamil Nadu University of Veterinary Sciences	Chennai, Tamil Nadu	SOUTH

LIST OF IMPORTANT ZOOS

(Zoos have been classified as per Recognition of Zoo Rules as amended in 2004)

LARGE ZOOS

ANDHRA PRADESH

1. Indira Gandhi Zoological Park
   Visakhapatnam
   Andhra Pradesh - 530 040
   Tele(O) : 0891-2552081
   Fax No. : 0891-2552081

2. Nehru Zoological Park
   Forest Department
   Hyderabad
   Andhra Pradesh - 500 264
   Tele. (O) : 040-24477355
   Fax NO. : 040-24473253

ASSAM

3. Assam State Zoo Cum Botanical Garden
   Assam State Zoo Divison
   R.G. Baruach Road, Guwahati
   Assam - 781 005
   Tele (O) : 0361-2201363
   Tele (R) : 0361-2203331
   Fax No. : 031-2263633

BIHAR

4. Sanjay Gandhi Biological Park
   Patna
   Bihar - 800 001
   Tele (O) : 0612-2223455
   Tele (R) : 0612-2222664
   2226140 (RH)
   Fax No. : 0612-2223455

GUJARAT

5. Sakkarbaug zoo
   Outside majevadi Gate,
   Junagarh
   Gujarat - 362 001
   Tele (O) : 0285-2660235
   Tele (R) : 0285-2631067
   Fax No. : 0285-2632900
   E-mail : cfwild@vsnl.com
   cfwildad1@sancharnet.in

6. Kamla Nehru Zoological Garden
   Kankaria,
   Ahmedabad
   Gujarat - 380 008
   Tele (O) : 079-25460971
   Fax No. : 079-25350926
   E-mail : ahmedabadzoo@icenet.net

KARNATAKA

7. Bannerghatta Zoological Garden
   National Park
   Bangalore
   Karnataka - 560 083
   Tele (O) : 080-7828540
   Tele (R) : 080-7828572
   Fax No. : 080-7828400, 8429366 (DCF)
   E-mail : bannerghatta@vsnl.net

8. Sri Chamarajendra Zoological Gardens
   Indira Nagar,
   Mysore - 570 010
   Karnataka
   Tele (O) : 0821-2520302, 2440752
   Tele (R) : 0821-2485293, 2092666
   Mob. : 0821-3184691

KERALA

9. Thiruvananthapuram Zoo
Zoological Gardens
Department of Museums and zoos
Thiruvananthapuram City
Kerala - 695 033
Tele (O) : 0471-2316275
Tele (R) : 0471-2316828
Fax No. : 0471-2316275
E-mail : museumzoo@sancharnet.in

MAHARASHTRA

10. Rajiv Gandhi Zoological Park & Wildlife Research Centre
Pune Satara Road,
Katraj
Pune, Maharashtra - 411 046
Tele (O) : 020-4367712
Tele (R) : 020-4368221
Fax No. : 020-5501104
E-mail : punezoo@vsnl.net

ORISSA

11. Nandankanan Zoological park
Mayur Bhawan, Janapath,
251, Saheed Nagar,
Bhubaneshwar
Orissa-751 007
Tele (O) : 0674-2545840
Tele (R) : 0674-2402510
Fax NO. : 0674-2520850/2466075

PUNJAB

12. Mahendra Chaudhary Zoological Park
Chattbir,
SCO No. 169-70, Sector 8-C,
Madhya Marg, Chandigarh,
Punjab-160 008
Tele (O) : 0172-2795612
Tele (R) : 9814462074
Fax No. : 0172-2798612

TAMILNADU

13. Arignar Anna Zoological Park,
Vandalur,
Chennai-600 048
Tele (O) : 044-22750741, 22751089
Tele (R) : 044-22390052
Fax No. : 044-22750741
E-mail : aazp@hotmail.com
aazp@vsnl.com

14. Madras Crocodile Bank Trust/
Centre for Herpetology, Post Bag 4,
Mamallapuram
Tamil Nadu - 603 104
Tele (O) : 04114-2272447
Tele (R) :
Fax No. : 04114-2272958/2242511
E-mail : mcbtindia@vsnl.net

TRIPURA

15. Sepahijala Zoological Park
C/o Wildlife Warden
Agartala
Tripura - 799 103
Tele (O) : 0381-2361225, 2361227
Tele (R) : 0381-2216213
Fax NO. : 03814-225253

UTTAR PRADESH

16. Lucknow Zoological Park
Hazratganj
Lucknow
Uttar Pradesh - 226 001
Tele (O) : 0522-2239588
Tele (R) : 0522-2238550
Fax No. : 0500-2239588
E-mail : lucknowzoo@yahoo.com

17. Kanpur Zoological Park
Allen Forest, Azad Nagar
Kanpur - 208 002
Uttar Pradesh
Tele (O) : 0512- 2560257
Fax No. : 0512-2560257

WEST BENGAL

18. Alipore Zoological Garden
Alipore
Kolkata
West Bengal - 700 027
Tele (O) : 033-24791150, 24399391
Tele (R) : 033-24391257
Fax No. : 033-24791150, 24399391
E-mail : calzoo@onlysmart.com

MEDIUM ZOOS

ANDHRA PRADESH

1. Sri Venkateswara Zoological Park
Pubipatla Post
Tirupati
Andhra Pradesh - 517 505
Tele (O) : 0877-2280980 (CF)
Tele (R) : 0877-2230876, (CF)
2230197
Fax No. : 0877-2248029/2231887
E-mail : tirupatizoo@yahoo.co.in

GUJARAT

2. Indroda Natura Park
Geer Foundation
Sector 9, Gandhi Nagar
Gujarat - 382 009
Tele (O) : 079-23221285, 23241128
Tele (R) : 079-23223891
Fax No. : 079-23241128,23221385
E-mail : qeer@quj.nic.in

3. Sayaji Baug Zoo
Municipal Corporation
Sayaji Bagh Zoo Officer
Vadodra
Gujarat - 390 018
Tele (O) : 0265-2784079
Tele (R) : 0265-2794974
Fax No. : 0265-2433060

KERALA

4. State Museum & Zoo
Superintendent's Quarters
Thrissur
Kerala - 680 020
Tele (O) : 0487-2333056

MADHYA PRADESH

5. Van Vihar National Park
Tatya Tope Nagar
PB No. 348, Bhopal
Madhya Pradesh - 462 003
Tele (O) : 0755-2770774
Tele (R) : 0755-2550755/2550752
Fax No. : 0755-2770774
E-mail : dirvvnp@sancharnet.in

6. Gandhi Zoological Park
Gwalior
Madhya Pradesh - 474 001
Tele (O) : 0751-2438344, 2326252
Fax No. : 0751-2326252, 2324996
E-mail : zoogwl@sancharnet.in

MAHARASHTRA

7. Veermata Jijabai Bhosale Udyan & Zoo,
Dr. Ambedkar Road
Byculla, Mumbai - 400 027
Maharashtra
Tele (O) : 022-23725799, 23723578
Tele (R) : 022-23724057
Fax No. : 022-23759821

MANIPUR

8. Manipur Zoological Garden
Govt. of Manipur
O/o Chief Conservator of Forests
Wildlife, Imphal
Manipur - 795 001
Tele (O) : 0387-2312703
Tele (R) : 0385-2310973

RAJASTHAN

9. Jaipur Zoo, Museum Road
Ramniwas Bagh,
Jaipur
Rajasthan - 302 004
Tele (O) : 0141-2617319
Fax No. : 0141-2617319/2227832

WEST BENGAL

10. Calcutta Snake Park
Conservation Centre and Laboratory
31, Hindustan Park, Calcutta
West Bengal - 700 029
Tele (O) : 033-24632425
Tele (R) : 033-25383741

SMALL ZOOS

1. Andaman & Nicobar Islands
I/C Mini Zoo, Haddo, Port Blair
Andaman & Nicobar Islands - 744 102
Tele (O) : 03192-232816/255349
Tele (R) : 03192-254740
E-mail : cwlw@cal3.vsnl.net.in
cwlw@vsnl.com

ARUNACHAL PRADESH

2. Biological Park
Itanagar Wildlife Sanctuary Division
Naharalgur
Arunchal Pradesh - 791 110
Tele (O) : 0360-2203533/2203534
Tele (R) : 0360-2203534
Fax No. : 0360-2212501
CCF : 0360-2212006

GOA

3. Bondla Zoo
Dept. of Wildlife & Ecotourism
Junta House, 3rd floor
Panaji
Goa - 430 401
Tele (O) : 0832-2312793, 222901
Tele (R) : 0832-2313089
Fax No. : 0832-2224747
E-mail : wildlife@goatelecom.com

GUJARAT

4. Sundervam Nature Disvovery Centre
Jodhpur Tekra, S.M. Road,
Ahmedabad
Gujarat - 380 015
Tele (O) : 079-26923148/26921838/
26858002
Tele (R) : 079-26750707
Fax No. : 079-26858010

HARYANA

5. Rohtak Zoo
Govt. of Haryana
72, Jasbir Colony, Sheela By-Pass
Rohtak, Haryana
Tele (O) : 0172-66931
Tele (R) : 0172-75357

HIMACHAL PRADESH

6. Himalayan Nature Park (Kufri)
Himachal Pradesh Forest Department
Wildlife Division
Shimla-171 002, HImachal Pradesh
Tele (O) : 0177-2623993
Tele (R) : 0177-2623415
Fax No. : 0177-2620151/2624192

JHARKHAND

7. Jawaharlal Nehru Biological Park
Sector-IV, Bokaro Steel City
Jharkhand - 827 004
Tele (O) : 06542-231839/297239
Tele (R) : 06542-232046
Fax No. : 06542-240185/246821
E-mail : bsp.la@rmo.spril.in

8. Bhagwan Birsa Biological Park
Doranda GPO, P.B. No. 41
Chakla, Ormanjhi, Ranchi
Jharkhand - 834 002
Tele (O) : 0651-2576531
2301045
Fax No. : 0651-2503655

9. Tata Steel Zoological Park
Jubilee Park, Jamshedpur,
Jharkhand - 831 001
Tele (O) : 0657-2424086
Tele (R) : 0657-2230787
Fax No. : 0657-2431918
E-mail : tatazoo@rediffmail.com

KARNATAKA

10. Tiger & Lion Safari, Thyarekoppa
Wildlife Division
Shimoga
Karnataka - 577 201
Tele (O) : 08182-222983
Tele (R) : 08182-274983
Fax No. : 08182-22283

MADHYA PRADESH

11. Kamala Nehru Prani Sanghrahalay Zoo
Indore Zoo,
Indore, Navlakha
Madhya Pradesh - 452 001
Tele (O) : 0731-2700972/2400972
Fax No. : 0731-2434489/2531166
E-mail :

MAHARASHTRA

12. Mahatma Gandhi Rashtriya Udyan Zoo
Indrabuvan, Punyshlok Appasaheb
Warad Path, Railway lines
Solapur Municipal Corporation
Solapur
Maharashtra - 413 001
Tele (O) : 0217-2627231-38/2730973
Fax No. : 0217-273477
E-mail : sorsmogaq@sancharnet.in

13. Aurangabad Municipal Zoo
Sidharth Garden
Near Central Bus Stand
Municipal Corporation
Aurangabad
Maharashtra - 431 001
Tele (O) : 0240-2331956, 2331213
Tele (R) : 0240-2311052
Fax No. : 0240-2331213

14. Nisargakavi Bahinabai Choudhary
Pimpri Chinchwad Municipal Corp.,
Sambhaji Nagar, G-Block,
Chinchwad,
Pune-411 019
Tele (O) : 020-776036
Fax No. : 020-779999

MIZORAM

15. Aizawl Zoo
Anmingdailova Colony, Aizawl
Mizoram - 796 001
Tele (O) : 0398-
Tele (R) : 0389-2345494/2340235

ORISSA

16. Indira Gandhi Park Zoo & Deer Park
Town service Department
Roukela Steel Plant
Sector-IV, Roukela
Orissa - 769 002
Tele (O) : 0635-235/233

MEGHALAYA

17. Lady Hydari Park, Animal land
Khasi Hills Wildlife Division
Shilong, Meghalaya - 793 001
Tele (O) : 0364-226181/226460

RAJASTHAN

18. Bikaner Zoo
Public Park, Bikaner
Rajasthan - 334 001
Tele (O) : 0151-2527901

19. Udaipur Zoo
Rajasthan Forest Department
Bari Road, Udaipur
Rajasthan - 313 001
Tele (O) : 0294-2453686
Tele (R) : 0294-2525172
Fax No. : 0294-2523076/2560264

20. Jodhpur Zoo
Umned Park, High Court Road
Jodhpur
Rajasthan - 342 001
Tele (O) : 0291-2635429

TAMIL NADU

21. Chennai Snake Park Trust
Rajbhavan Post
Guindy, Chennai
Tamil Nadu-600 022
Tele (O) : 044-2353623
E-mail : cspt1972@md5.vsnl.net.in

22. Guindy Children's park
259, Annasalai, DMS Campus
Teynampet, Annasalai
Chennai - 600 006
Tamil Nadu
Tele (O) : 044-24321471
Fax No. : 044-2421401

23. V.O.C. Park Mini Zoo
Coimbatore Corporation
Nehru Stadium, Coimbatore
Tamil Nadu - 641 001
Tele (O) : 0422-2303613/2390261
Tele (R) : 0422-2318462/2390261
Fax No. : 0422-2390167-2398702
E-mail : cpecorp@vsnl.com

UTTARANCHAL

24. Pt. Govind Ballabh Pant High Altitude Zoo
Nainital Forest Division
P.O. Tallital
Nainital
Uttranchal - 263 002
Tele (O) : 05942-237927
Tele (R) : 0542-236230/
Mobile : 9412084469
Fax No. : 05942-236469
E-mail : nainitalzoo@rediff.com

WEST BENGAL

25. Marble Palace Zoo
46, Muktaram Babu Street
Calcutta
West Bengal - 7
Tele (O) : 033-22399542
Tele (R) : 033- 22393310

26. Padmaja Naidu Himalayan Zoological Park
Jawaharlal Parabat (West)
Darjeeling
West Bengal - 734 101
Tele (O) : 0354-2254250, 2253709 (C)
Tele (R) : 0354-2252250
Fax No. : 0354-2252522
E-mail : pnhzp@yahoo.com
pnhzp@sify.com