Masterplanning Zoo Education

Report of the First South Asian Zoo Educator Course

(7 - 12 August 2000, Kathmandu, Nepal )

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Zoo Outreach Organisation

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Inspired by the Central Zoo Education Department
International Zoo Educator Association (IZE)
Asian Regional Network of IZE (ARNIZE)

Hosted by the Central Zoo
King Mahendra Trust for Nature Conservation
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Introductory material
Background

The First South Asian Zoo Educator Workshop

The First South Asian Zoo Educator Workshop was unique in many ways.
- It was the first regional zoo training workshop to be conducted for South Asian Zoos.
- It was the first time ever perhaps that a zoo education workshop has been attached to a zoo directors’ conference and a CBSG meeting.
- It was the first time so many senior level zoo personnel have participated in a zoo education event!
- It was also the first zoo educator workshop to come directly from the series of International Zoo Educator Workshops conceived by the International Zoo Educator Association and organised by Phillip Coffey, former Director of Zoo Education at Jersey Wildlife Preservation Trust.
- It was the first time such a workshop is held using only people from the region as resource persons and trainers.

In the above list of "firsts" we mentioned a series of "International Zoo Educator Workshops" which were initially conceived at one of the biannual conferences of the International Zoo Educator Association. In fact, it was Mr. M. A. Parthasarathy, then Chairman of the IUCN commission of Education and Training, an Indian and a South Asian, who commented at this meeting that tropical countries had the highest need for education and the least facilities to carry it out -- including training.

From that time, at different meetings in Melbourne, Washington, D.C., Copenhagen and Toronto, the need for a Zoo Educator Training course was discussed.

In 1987 a Workshop was held at the Jersey Wildlife Preservation Trust to brainstorm if, how, when and where such a course could be conducted. Zoo personnel in many different tropical countries were invited to tell about their problems and potential. In the end, there was almost no choice -- an international training course seemed absolutely necessary.

The Jersey Wildlife Preservation Trust agreed to organise the first, and later, the second course. Phillip Coffey, former Director of Zoo Education at Jersey Wildlife Preservation Trust ran the training with a dedication and sensitivity that made him a hero in the eyes of all participants. Phillip had been one of the IZE Board members, along with Jan Hatley (now sadly deceased) who pushed hard for the course and raised most of the money for it.

It was decided ultimately not to continue the course at Jersey but to take it "on the road" -- to hold the course in some of the countries of high biodiversity where participants of the first two courses had come. It was hoped that the participants could organise a course for their own country or region.

As I was fortunate enough to be involved in the planning meeting and both courses as Phillip Coffee's assistant, I tried very hard to organise the course in India but it was simply not possible. Finally, it came together in this course held at the Central Zoo in Nepal. Also, another course very similar to this one in some ways, is planned soon in Singapore ... so Phillip Coffey's hard work has been justified and his fond dream realised. Ironically, Phillip is no more a zoo educator, but a school teacher in the Jersey school system. He is no less happy about these courses however.

We hope that participants in these courses inspired by IZE and catalyzed by ARNIZE will take what they learn back home and organise training in their own country.
In most instances, a so called "developing country" having its first workshop would invite experts from western countries as resource persons. In this workshop, however, the resource persons are all indigenous. Five countries with zoos have gathered here and can teach one another what they know and what they need to know. They can talk about their problems and potential. Often times we bring foreign expertise into a country before it has developed its own identity fully. This is a big mistake. Every country and culture has its own "personality" and this, more than anything, should be the determining factor in how its institutions evolve.

In the process of communicating with zoos under the auspices of the Asian Regional Network of the International Zoo Educator Association, it became clear that South Asia had a great deal going on in zoo education which needed reinforcing and conveying to the rest of the world. It is not that there is nothing to learn from the rest of the world, but as a result of this workshop, South Asia can relate to other zoos more as a peer than as a supplicant.

This could happen because of the great miracle of transformation of the Central Zoo, which has evolved from a small, old, rather shabby zoo to a trend-setting regional force. This writer is from America but all my zoo experience is in India — therefore, I claim to be indigenous too. The zoo education department here is on a par with almost any in the world, and far beyond those of this region. The Friends of the Zoo is the most successful of any in South Asia.

I refer you to the recommendations given in the Conclusion of the Progress Report of the foreign Master Plan Team. Every suggestion has been fulfilled by the Central Zoo, some of them with the organisation of this and the preceding workshops.

As plans for the education event evolved, it seemed a good idea — since so many people from these countries were coming together — to have a Regional CBSG meeting at the same time. Then it seemed like a good idea to have a zoo directors' vets' meeting to discuss the possibility of South Asia having its own regional association, along with SEAZA and ARAZPA. So — with so many directors attending, we could not insult them by "training" them and what started as "training" became a "workshop" in which all participants will be teaching one another. A handbook of educational techniques from South Asia will be brought out following the workshop.

The next education workshop or training in South Asia may well have external experts as resource persons, but the confidence gained by the first one being a regional affair from the "get go" will be invaluable.

We would like to thank all the zoos, conservation and welfare organisations from USA, UK, and Europe who contributed financially to this workshop as well as to the production of this Report. Many might have questioned the wisdom of an indigenous panel of resource persons but not one of our donors did so. We have every confidence that the workshop itself and its results will justify their confidence in us.

Sally Walker, Convenor, ARNIZE
Asian Regional Network of International Zoo Educators
Evolution of the International Zoo Educator Training Course

1989 -- Investigatory and planning workshop, Jersey Wildlife Preservation Trust, C.I.

1991 -- 1st course
JWPT

1993 -- 2nd course
JWPT

2000 -- 4th course
Central Zoo, Nepal

Part 1: Introductory material
History and Background
### Zoos and Breeding Centres of South Asia (about 280)

<table>
<thead>
<tr>
<th>Country</th>
<th>Zoo names where feasible</th>
<th>Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>About 250 zoos of all sizes</td>
<td>Central Zoo Authority, state and municipal governments, private authorities</td>
</tr>
<tr>
<td>Pakistan</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Bawalpur Zoo*</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td>Hyderabad Zoo*</td>
<td>Government</td>
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<td></td>
<td>Lahore Zoo*</td>
<td>Government</td>
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<td></td>
<td>Karachi Zoo*</td>
<td>Government</td>
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<tr>
<td></td>
<td>Karachi Safari Park*</td>
<td>Government</td>
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<tr>
<td></td>
<td>Islamabad Zoo*</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td>Clifton Aquarium*</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td>Jallore Park*</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td>Lohibheer Wildlife Park*</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td>22 breeding centres</td>
<td>Government</td>
</tr>
<tr>
<td></td>
<td>Jungle Kingdom</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Landhi Korangi Zoo, Karachi</td>
<td>Private</td>
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<tr>
<td></td>
<td>3 - 6 Private Zoos Sindh Province</td>
<td>Private</td>
</tr>
<tr>
<td></td>
<td>Murray Wildlife Park</td>
<td>Private</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Dehiwala Zoo</td>
<td>National Zoological Gardens Authority</td>
</tr>
<tr>
<td></td>
<td>Pinnewala Elephant Orphanage</td>
<td>National Zoological Gardens Authority</td>
</tr>
<tr>
<td></td>
<td>Pinnewala Zoo (new - coming up)</td>
<td>National Zoological Gardens Authority</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Dakha Zoo</td>
<td>Government of Bangladesh</td>
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<tr>
<td></td>
<td>rangpur Zoo</td>
<td>Government of Bangladesh</td>
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<tr>
<td></td>
<td>Chittagong Zoo;</td>
<td>Local authority</td>
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<tr>
<td></td>
<td>Rajshahi Zoo</td>
<td>Local authority</td>
</tr>
<tr>
<td></td>
<td>Comilla Zoo</td>
<td>Local authority</td>
</tr>
<tr>
<td></td>
<td>Khulna Zoo</td>
<td>Army owned</td>
</tr>
<tr>
<td>Nepal</td>
<td>Central Zoo (the national zoo)</td>
<td>King Mahendra Trust for Nature Conservation</td>
</tr>
<tr>
<td></td>
<td>Nepal Ganj (small park with a few animals)</td>
<td>City</td>
</tr>
<tr>
<td></td>
<td>Hetaunda (small park with a few animals)</td>
<td>City</td>
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<tr>
<td></td>
<td>Elephant Breeding Centre</td>
<td>Government wildlife authority</td>
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<tr>
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<td>Ganjrai Breeding Centre</td>
<td>Government wildlife authority</td>
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<tr>
<td></td>
<td>Musk Deer farm</td>
<td>Uncertain</td>
</tr>
</tbody>
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Part 1: Introductory material
South Asia

In South Asia zoological gardens and parks in their various forms are not often associated with important subjects like biodiversity, conservation, research and education. In most countries of South Asia, if there is a zoo, it may be small and shabby. Sometimes it is hard to imagine some of the zoos in South Asia making a positive impact on wildlife. Indeed, most people think these zoos are a drain on wildlife, when in fact, most zoos stopped taking animals from the wild (except in rescue situations) several years ago. Many zoos in South Asia are, in fact, changing and the rest of them can do with the right input. For example,

- The old Kathmandu Zoo now has a whole new administration, a Master Plan for renovation, a Master Plan for Education with an Education Officer, an Education Department, a Friends of the Zoo with more than 5000 members, a full-time volunteer coordinator, cooperative arrangements with local industry, and dozens and dozens of activities in schools, clubs, and businesses.

- The Lahore Zoo in Pakistan has an Education Department with a full-time Education Officer. The Islamabad Zoo recently invited experts from the Netherlands to advise them on a complete face lift? The Karachi Zoo has an open Safari Park some distance away and there is a new kind of Safari Park in Rawalpindi.

- The Colombo Zoo (officially called the National Zoological Gardens of Sri Lanka) is under renovation with a high profile committee and has a full-time Education Officer. There is zoo legislation in Sri Lanka, a National Zoological Gardens Act. The zoo administration of Sri Lanka is constructing a new 100-acre zoo near Pinnewala designed by South Asian landscape architect who worked 8 years with one of the best zoo design firms in the world.

- India has perhaps the strongest zoo legislation in the world with a unique central co-ordinating body, the Central Zoo Authority, which inspects, recommends changes, provides funding for improvement, recognises or derecognises zoos, closes zoos which can't improve. Some Indian zoos are very large and well-designed. Three or four zoos have a post of education officer and some conduct regular educational activities. India also has a "Centre for Excellence" whose responsibility is to design and provide, assist and advise zoos and protected areas on how to produce high quality conservation education.

- There are now six zoos in Bangladesh, whose directors are usually veterinary doctors. There is a one-year course in Zoo and Lab Animal Management at the Veterinary College.

- In South Asia SSC, IUCN Conservation Breeding Specialist Group is represented by a 9-year old, 400-member national network in India (CBSG, India), a three-year old CBSG, Sri Lanka and a one-year old CBSG, Nepal. These networks have conducted several very useful workshops involving hundreds of field biologists and adding greatly to the store of knowledge of the biodiversity of those countries.

- There is a relatively new network just formed for the entire South Asian Region called CBSG, South Asia. Among its many objectives, CBSG, South Asia aims to create a regional zoo conservation identity by networking zoos, field biologists, population biologists, wildlife managers so that they might communicate, cooperate and collaborate to save small populations in the wild by using the many new conservation tools developed by CBSG, SSC, IUCN.

There is a South Asian Zoo Association for Regional Cooperation SAZARC which was formed in 2000 at the time of the Zoo Educator Course.
Zoos in South Asia have woken up and want to join the global zoo movement which day by day comes closer to achieving what zoos should be doing ... acting as a support [not a substitute] for conservation.

In a meeting of the Global Biodiversity Forum for South and Southeast Asia held 24 – 26 October 1999 in Colombo, Sri Lanka, one of the five workshops concerned National Biodiversity Strategies and Action Plans (NBSAPs). Participants from both South and Southeast Asia reported on the progress of their countries in creating new strategies or adapting existing strategies, plans or programmes for conservation and sustainable use of biological diversity (Article 6). Many excellent recommendations, comments and notes were recorded, some of them related directly to the subject areas of public awareness, species and zoos.

Many of these subject areas, issues and recommendations can be implemented to a great extent through zoological gardens. Many of them are part and parcel of the modern zoo. A Table on the following page lists the recommendations and how zoos can be used to achieve these objectives.

Zoological gardens are or can be a useful tool in the conservation scenario. All over the world zoos are increasingly turning their attention to serious conservation programmes and activities. In South Asia, five of the seven countries have zoos. Bhutan has a breeding centre but it is not known whether it is open to the public or not. India has the maximum number of zoos with 250; Pakistan is next with 5. Nepal, Sri Lanka and Bangladesh all have one zoo, although Sri Lanka is constructing a new one. The common factor for all these countries and their zoos — whether they have one or 250 — is the need for a systematic approach to public education. While many people question the utility of zoos in conservation of wildlife, no one can argue that zoos have the potential to fill a very useful role in educating the public. Zoos have something no other institution has — live animals for people to see.

Not every zoo can be conservation relevant in terms of breeding programmes, but every zoo — no matter how small and underfunded — can be conservation education relevant if they have even one person on their staff or perhaps a trusted voluntary worker who is conversant with education techniques and has a will to use the animals in his care for education.

The South Asian Zoo Educator Course was not the first step in zoo and conservation education in South Asia but it was certainly the first time zoo educators (whether they were Directors, Veterinarians or Education Officers) came together as South Asians with a common purpose of improving zoo education in this biologically diverse and important part of the world.
Table: Recommendations of GBF, S&SEA, 1999, Colombo related directly or indirectly to the subject areas of zoos and zoo education

<table>
<thead>
<tr>
<th>Subject area</th>
<th>Recommendations/notations</th>
<th>Zoos role in implementation</th>
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</table>
| Funding            | ... government funding in the region is on the wane and that NBSAPs must  
a) find "innovative financing”,  
b) involve private sector more actively, engaging business both as donors & key players.  
c) Attempt changes in behaviour and reorientation of existing programmes (such as governmental programmes) as compensation for funding deficiencies.  
It was noted in this subject area that species have an inherent ability to capture public attention and can be a useful in communications and fund raising. | a) zoos provide links between people and wild animals which can lead to interest and support for field conservation programmes and small project funding, such as surveys.  
b) many zoos engineer support from the private sector for species and habitats at risk  
c) government programmes covering protected areas and zoos can be tapped for smaller, species based biodiversity projects  
Zoos display living animals and can capture the attention and affection of the public for wildlife and nature like no other institution. |
| Priority setting   | Noted that ... the following could be useful action tools.  
a) definition of bioregions and “hotspots” and  
b) identification of those most in need of conservation action.  
c) Criteria which can be used for selection include: endemic species; endangered and rare species; level of threat; accessibility; and security;  
d) global and national lists of threatened species (Red Lists) can be particularly useful and important | a) zoo education programmes (signage, lectures, handouts, guidebooks, study sheets, etc. relate information about bioregions and hot spots to species with live animals which can be seen by visitors.  
b) Zoos can provide conservation action for small populations as well as building public support for conservation.  
c) Zoo education programmes routinely teach about endemicity, endangerment, etc.  
d) Red Lists and Red Books are dramatic and can be used in zoo graphics to identify and explain aspects of threatened species. |
| Communications     | a) much more energy and resources need to be put into communicating and raising awareness on the substance of strategies and action plans  
c) with appropriate materials for different levels. | a) when you conduct any activity in a zoo – even putting up a signboard – you reach thousands of people a day  
b) Strategic plans and action plans can be expressed in lay terms and made interesting surely to high school and college students as well as educated adults.  
c) Zoos are experts in developing materials for different age levels. |
| General-Education  | a) NBSAPs be popularised with specific materials tailored for each target group  
b) Materials should be prepared in local languages, including those of ethnic minorities.  
c) use should be made of existing institutions such as zoos, museums and botanical gardens wherever possible to communicate biodiversity concerns to the public.  
d) the role and substance of NBSAPs be included in education curriculum | a/a  
a/a  
a/a  
d) Zoos all over the world are developing education programmes which will compliment the standard or unified education curriculum in their city, state or country. Professional zoo educators can help in converting NBSAPs into interesting, meaningful, and comprehensible units which would be appreciated by students and included in education curriculums. |
Agenda of the Presentations and Exercises of the First South Asian Zoo Education Workshop
7 - 12 August 2000

DAY 0  
SUNDAY - 6 Aug -- Arrival of Zoo Ed Participants and registration.  
WWF-Nepal

DAY 1  
MONDAY - 7 Aug -- Theme: WHY Zoo Education
Inauguration of Zoo Education Workshop  
Opening statement -- Why Zoo Education -- Dr. U.S. Seal, Chm, CBSG, SSC, IUCN  
Welcome & introduction KMTNC/Central Zoo -- Dr. Prahalad Yonzon, Trustee, KMTNC  
How Zoo Education can help Official Wildlife Agencies -- Dr. T. M. Maskey, DG, DNPWC  
Role of WWF in Conservation education -- Dr. C.P. Gurung, CR, WWF-Nepal  
Role of IUCN in Conservation education -- Dr. B.D. Pandey, Acting CR, IUCN-Nepal  
Dolphin Status and Conservation -- Prof. Dr. T. K. Shrestha, T.U., Nepal  
Red Panda status and Conservation -- Dr. Prahalad Yonzon, Trustee, KMTNC  
KMTNC overall activities -- Arup Rajoria, Director, KMTNC-Terai program  
Zoo Design as Zoo Educator -- Adit Pal, Landscape Architect  
Evolution and development of zoos -- Sally Walker  
Education in South Asian Zoos -- Participants presentations -- 15-20 minutes each  
Masterplanning Zoo Education: Central Zoo case study -- Ang Phuri  
Public Participation component of Education Masterplan -- Geeta Shrestha  
Central Zoo Visit -- Dr. B.K.Jha

DAY 2  
TUESDAY - 8 Aug -- Theme for Day: WHAT is your message?
Introduction: WHAT can you teach in the zoo? -- Sally Walker  
Conservation of Biodiversity -- Dr. M.K.Chalise, KU  
Endangered Species: examples and case studies -- IUCN representative  
Teaching about invertebrates in the zoo -- Dr. B. A. Daniel, Entomologist  
The Amphibian Crisis - how to get the message across -- Sanjay Molor  
Animal Welfare message in Zoo Education -- Sally Walker  
Rhino and Elephant: Conservation Crisis -- Dr. Tirtha Maskey  
Environmental Education (EE) -- introduction -- Meena Raghavan  
Teaching CE/EE using the zoo as a resource -- School teacher (Shuvatara)  
Linking CE/EE in zoo to local school curriculum-- with participants showing examples  
of CE/EE curriculum from their zoo. Discussion -- Meena, Ang, Geeta, and the teacher  
Continue EE discussion in context with Zoo Education Master Plan  
Finish Education in South Asian Zoos -- Participants

DAY 3  
WEDNESDAY - 9 Aug -- Theme for Day: WHO is your audience?
WHO is your educator and WHERE & WHEN do you conduct education
Introduction -- overview -- Sally Walker  
Know your audience: visitor surveys; targeting different levels and types of visitors -- Meena Raghavan  
Bhanubhakta School CE activities with the reference of Essay Competition at Godavary  
Teacher of Bhanu Bhakta School
Case study; Video show and discussion  
Preparing a presentation for different types of audience -- Meena Raghavan  
School Role in EE -- Teacher of Mount Kailash School  
Teachers and Schools: [another perspective] -- Meena Raghavan  
WHERE & WHEN: Educating by using special “days”, events, etc. -- Sally Walker  
Public relations -- Media -- introduction (20 minutes), Press point of view  
Interactive discussion with participants telling problems with press and emergencies.  
Assignment: write a press release about a controversial event in your zoo.
DAY 4  THURSDAY - 10 Aug -- Theme for day: HOW to organize your education program or plan. Mechanisms; Special focus

Introduction -- Sally Walker
HOW to educate : use interpretation -- Meena Raghavan
Organising a programme using Special events and Special Species -- Sally Walker
In the zoo: Keeper talks; Touch tables; Environmental enrichment devices; zoo trail (using book developed by Central Zoo) -- Dr. Jha and other Central Zoo staff
Conservation education program In relation to Bird Conservation -- H.S. Baral
Gharial threats and conservation -- N. Poudyal, Senior Ecologist/ G. Upadhyaya, DNPWC
How to be creative & Designing a program around a Species or Special event -- Sally Walker
Designing cage labels and brochures -- Meena Raghavan
Hands on practice session : Participants design an exhibit label or a brochure; report / show and explain their label before tea -- Ang, Geetha, Meena, Sally helping
Design a touch table. Two groups of participants work up a touch table & prepare a 5-minute talk on their touch table -- Ang, Meena, Geetha
Special presentation from Lahore Zoo: setting up an education program and discussion -- Arshad Toosey and Uzma Khan.

DAY 5  FRIDAY, 11 Aug -- Theme for day: HOW, cont.
Budgeting and fundraising, etc.

Introduction to theme -- Sally Walker
Fund raising from local sources in relation to Czoo, Kathmandu -- R.K. Shreshta, Czoo
Marketing strategy in relation to crane conservation -- R.Suwal, Lumbini Sarus Crane Sanctuary
Fundraising from foreign organisations and other sources outside the region -- Sally Walker
Marketing strategy in relation to conservation activities -- ECCA representative
Interaction with Zoo and Conservation Community and NGOs for obtaining things for the zoo -- Zoo educators, LSC, BCN and ECCA representative
Budgeting for Education -- Sally Walker
Proposal writing -- Sally, Ang and Geetha
Zoo Education Master plan review and review assignment of task -- Ang Phuri & Sally
Develop a Master Plan for your Zoo -- Participants with help from Resource Person
Tea break
Continue developing Master Plan. If complete, start writing Proposal including all budget items (Presentation of Report tomorrow morning)

DAY 6  SATURDAY, 12 Aug -- Final Reports; Goodbye
Overview - introduction
Participants Reports : Master Plan for their Zoo -- Participants
Fill out evaluation forms for course -- Participants
Valedictory
End of course dinner and Good-bye speeches. Farewell dinner by IUCN
Participants

PERSONAL OBJECTIVES OF PARTICIPANTS IN THE FIRST SOUTH ASIAN ZOO EDUCATOR COURSE, KATHMANDU

Ganesh Dubey, Veterinary Officer, Maitri Baag Zoo, Bhilai, Madhya Pradesh, India

I want to develop an education plan to teach school children to stop buying "cage birds" parrots into their homes. I'd like to know how to proceed with this project so that it is really effective to communicate with children.

Mr. S. Gunasena, Director, Department of National Zoological Gardens, Dehiwala, Colombo, Sri Lanka

I have two zoos, one old (Colombo) and one under construction (Pinewala). I want to learn zoo education techniques for both the old zoo and to develop along with the new zoo.

Humayun Taher, Madras Croc Bank Trust, Chennai, India

I want to conduct crocodile shows using young crocodiles for children. Kids often want to touch and even hold baby crocodiles and this can be a peak experience for them and made an indelible impression on them. I would like to know how to go about this without getting into difficulty with animal welfare organisations. I also want to make audio-visual shows about reptiles and to learn how to find out what would most interest the public.

Dr. N.C. Roy, Deputy Curator, Rangpur Zoo, Bangladesh

I want to learn about educational projects from other zoos. I want to increase awareness for our visitors by making effective signage in local language as well as English and learn to arrange keepers training.

Amitava Das, Coordinator, ZOO Education, Bangladesh

I want to assess the suitability of designs of animal houses for the animals and make them up to date with graphics also. I want to train the caretaker of his zoo in modern techniques and give my zoo a modern outlook in every way, including education. I want to learn many things about conservation and to build up a common commitment for the sub continent.

Dr. Md. Serizul Islam, Curator, Dhaka Zoological Gardens, Dakha, Bangladesh

The Dhaka Zoological Gardens has not had an Education Office since its inception and the only way we have to make visitors aware about wildlife is through signboards placed in some places placed inside the zoo.

Dr. Shital Kumar Nath, Curator, Chittagong Zoo, Bangladesh

Now, when school or college children visit the zoo, some officers are engaged to guide them and to let them know about the things which they want to know. There are, however, more ways to inform the common people, which I want to learn from this meeting and I hope these could be arranged in future.

Dr. M. Shahidullah, Deputy Curator, Dhaka Zoo, Bangladesh

Dhaka Zoological garden does not have a zoo Education Officer. After finishing this workshop we will be trying to create a zoo education officer's post and do the best for zoo education, "Friends of Zoo", Eco-
We will also arrange training of school and college students awareness and educational program on conservation of wildlife. I want to learn something which will help to gear up the people of Bangladesh in awareness of wildlife.

Pradeep Shrivastav, Gwalior Zoo, Gwalior, India

I want to learn to make good signs for rural visitors, provide resource materials for visitors from other parts of the country i.e. Andhra Pradesh, Karnataka etc.

Dr. M.A. Salam, Director, J.N.B. Park, Bokaro, India

I want to develop an education plan for the visitors and school children to encourage them to avoid public "Bear & Monkey Shows". I want to get help in developing an effective method to discourage such type of shows in my state.

Uzma Khan, Education Officer, Lahore Zoo, Pakistan

I’d like to learn some new techniques for teaching about amphibian conservation in the zoo and also in schools and colleges.

I want to conduct training of school teachers and children, create or acquire video film shows on wildlife, learn to organise street theatre, snake shows and training of volunteers for educating the visitor. I also want to learn staff training, how to create sign boards, find the means to develop an audio guide on each enclosure.

Dr. V. Kalaiarasan, Director, Chennai Snake Park Trust, Tamil Nadu, India

I'm searching for a very good architect for better designing of enclosures especially for my zoo.

exchange more ideas to other zoos and particularly about education project of central zoo would be a great help.

Sanjay Molur, Sr. Programme Officer, Zoo Outreach Organisation, Coimbatore, India

Mr. Mansoor Qazi, Director, Karachi Zoological Gardens, Pakistan

R.K. Sahu, Zoo Superintendent, Kamla Nehru Zoological Garden, Ahmedabad, India

I want to change the whole concept of my zoo especially old enclosures that have a lot of concrete and iron with poor exhibits. We will also arrange training of school and college students awareness and educational program on conservation of wildlife. I want to learn something which will help to gear up the people of Bangladesh in awareness of wildlife.

Part 1: Introductory material

Participants, organisers and hosts
I want to learn more about how other South Asian zoos run their education programmes and how they raise funds for them.

Dr. Madhav Ghimere, Veterinary Officer, Central Zoo

I want to share anything that our zoo has done in Education that is useful to other zoos and also to learn from them, adding to our own expertise.

Geetha Shreshta, Friends of the Zoo Coordinator, Central Zoo, KMTNC, Kathmandu, Nepal

I want to learn techniques for breeding and educating the public about endangered birds.

Dr. B. K. Jha, Veterinary Officer, Central Zoo, Kathmandu, Nepal

I want to learn more signage techniques and how to give public presentations. I also want to share views and exchange ideas with other regional zoos

Dr. B. A. Daniel, Entomologist, Zoo Outreach Organisation, Coimbatore

I want better cooperation among zoos for education and other subjects. We should share ideas and information.

Dr. Arshad Toosey, Director, Lahore Zoo, Pakistan

I want to fill up the communication gap and promote conservation in South Asia in a better way.

Dr. Jayanthi Alakoon, Addl. Director/Vety. Officer, National Zoological Gardens, Colombo, Sri Lanka

I want to learn some techniques for spreading information about invertebrates across a wider range of the public. Zoos are probably one of the best ways. Also we are running different networks to promote conservation and I find lots of communication gap between conservation and scientific communities. I hope to learn some new ideas from education lectures about how we can

Ang Phuri Sherpa, Education Officer, Central Zoo, Kathmandu, Nepal

South Asian Zoos should become a consolidated force as a region in the world to work towards the three C's of conservation, Communication, Cooperation and Coordination. We

Participants, organisers and hosts
U. S. Seal, Chairman, Conservation Breeding specialist Group delivers Inaugural address to Zoo Educator Training Workshop

Dr. U. S. Seal is Chairman of the most active specialist group of IUCN's 110 specialist groups of IUCN. Seal has been lobbying for several years for more effective conservation messages using current information generated by field biologists and zoo managers in the special kind of workshops that the Conservation Breeding Specialist Group hosts.

CBSG is also the largest specialist group with nearly 1000 members in more than 40 countries of the world. CBSG has created a different kind of conservation consciousness by bringing together all stakeholders and experts in the conservation scenario. In a CBSG workshop you might find, in addition to field biologists, zoo managers, and academics, several social workers, demographers, climate change experts, geologists, taxonomists, anthropologists, etc. Every workshop is different but all have one common factor -- the best possible scientific information brought to a common forum at the time.

CBSG's major workshops are called Population and Habitat Viability Assessment Workshops and Conservation Assessment and Management Plan Workshops. The former (PHVA) dealing with a single species in minute detail to find out the probability of extinction and create a high probability of survival for the species. The latter (CAMP) deals with a wide range of species in a given taxon group, country, region, or specialist area (such as confiscated animals) and -- always in a participatory group setting -- assesses these species for their conservation value according to IUCN Red List criteria.

The Workshop produces a Report that is full of information about species and populations from the most knowledgeable people in the world. Any zoo educator would find a wealth of fascinating facts about wildlife and its conservation in the CBSG Reports and other literature.

CBSG now makes a special effort to insure that an educationist is a member of the workshop team so that the all important recommendations for public awareness and education of policy makers will be professionally conceived.

While commenting on the remarkable configuration of events which had occurred at Central Zoo with the South Asian zoo and wildlife professionals that week, he encouraged zoo educators among them to exploit current news and highlight current conservation trends in their public programmes.

Referring to Dr. William Conway's seminar Keynote Address at the recent World Zoo Organisation annual conference in Pretoria the previous year, Seal also encouraged Zoo Educators to include policy makers and politicians (who can make decisions and bring about change) in their target groups.

Part 1: Introductory material

Inauguration -- Dr. U. S. Seal
THE CHANGING ROLE OF ZOOS IN THE 21st CENTURY

William Conway

What is happening outside zoos?

If you knew that wildlife is declining so fast that the end of animal acquisitions for zoos is in sight, as a zoo director what would you do? How would this affect your zoo's capital improvement plans? Its education programs? Its conservation efforts?

In a general way, we all do know that human populations are increasing and that wildlife is disappearing. But, we also hear that many things are getting better. Outside Africa and India, human life expectancies have dramatically increased and large numbers of people are much better fed and cared for today than fifty years ago. Even population growth is slowing. To many of us, most environmental problems appear solvable. But what are the facts insofar as wildlife, hence zoos, are concerned?

Twenty-five percent of all birds have been driven to extinction in the last 200 years. Eleven percent of the remaining birds, 18% of the mammals, 5% of the fish and 8% of terrestrial plants are now seriously threatened with extinction (Barbault and Sastrapradja, 1995). Almost all big animals are in trouble; storks and cranes, pythons and crocodiles, great apes (in fact, most of the primates), elephants and rhinos. Ninety percent of the black rhinos have been killed in the past eighteen years and one third of the world's 266 turtle species are now threatened with extinction.

More to the point is the plight of tropical forests. Most terrestrial species are found in such forests but only about 7.5 million km2 of tropical evergreen forests remain. If their deforestation continues at the same rate as it did between 1979 and 1989, the last tropical forest tree will fall in 2045, but the rate is increasing (Terborgh, 1999). Moreover, tropical forest wildlife is under much more pressure than even these figures suggest. The bushmeat harvest in the Brazilian Amazon is now estimated at 67,000 to 164,000 metric tons per year and this kill is dwarfed by that in the tropical forests of Africa, now more than one million metric tons each year (Robinson et al 1999). Field scientists are reporting a new phenomenon—the "empty forest" (Redford, 1992).

At the same time, we are besieged by reports of acid rain, decreases in tropical forest rainfall, ozone depletion, global warming, coral bleaching, phytoplankton blooms, cancer epizootics in fishes and such extraordinary declines as the dramatic worldwide loss of amphibians (Myers, 1999).

Our growing herds and flocks of domestic animals have become a plague to wildlife, devastating habitat and spreading disease—anthrax, rinderpest, distemper. Bovine tuberculosis has spread from domestic cattle to wild buffalo, thence to lions, cheetahs, kudus and baboons here in South Africa while it threatens wood bison in Canada.

Over forty percent of Earth's total terrestrial photosynthetic productivity is now being appropriated by people (Vitousek et al., 1989), who also consume 25-35% of the primary productivity of the ecosystems of the continental shelves (Roberts, 1997) and use 54% of all run-off in rivers, lakes and other accessible sources of fresh water (Postel et al, 1996).

Along with the assault of our domestic animals upon the land and its wildlife, we are casually distributing an unremitting stream of wild exotics, ranging from European boars in California to red deer in Argentina—to say nothing of what has happened in the famously disastrous situations in New Zealand, Hawaii and Australia. The destructive effect of alien species of plants and animals wins a place second only to man's in the U.S. (Eisenbrink, 1999; Kaiser, 1999; Stone, 1999).

In California's San Francisco Bay, for example, an average of one new species has been established every 36 weeks since 1850, every 24 weeks since 1970, and every 12 weeks in the last decade.

Although it is true that the rate of human population growth has slowed, nearly one billion people are being added to the population every 12-13 years, far more in real numbers than 50 years ago; the compounding effect of a smaller rate on a larger base. This is occurring mostly in countries where Earth's biodiversity is greatest.

The life expectancy of wildlife is not better than 50 years ago. It is incomparably worse. Nevertheless, not one national government on Earth has made preservation of its environment a top priority. Only major environmental catastrophes seem likely to win humanity's attention and loss of species will rarely qualify as catastrophic.

Only 4% to 6% of the terrestrial realm and 0.5% of the marine realm are under any sort of wildlife protection (Fresson, 1998). For most people, wildlife conservation is a luxury and no great scientific breakthrough can be expected to stop extinction simply. No immunization, quarantine or wonder drug.

Species-specific requirements of big predators are especially sobering. For example, a female jaguar in Peru requires a minimum of 20 kms2 for herself and her cubs while a pair of harpy eagles needs about 50 kms2. The two million hectare Manu Reserve system supports only 10 families (60 individuals) of giant otter (Terborgh, 1999). A single Indian tiger, requires a standing herd of about 700 axis deer to produce sufficient food on an annual basis (U. Karanth, pers. comm.).

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* Keynote for the Annual Conference of the World Zoo Organization, Pretoria, South Africa, 19 October 1999
** Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, New York 10460 USA

Part 1: Introductory material

Challenge for zoos -- Bill Conway's seminal keynote
**What does this mean for zoos?**

Jack Welch, CEO of General Electric, has observed: "When the rate of change on the outside exceeds the rate of change on the inside, the end is in sight". In the outside world of wildlife and nature, which we represent to our hundreds of millions of visitors, the rate of change far exceeds the internal zoo response. Like so much of nature, zoos also face extinction—unless they are able to change. Despite the good work of our WZO planning task force, zoos have been overtaken by the speed of wildlife extinction. To survive and fulfill their obligations to society, they must become proactive conservation organizations, not living museums, and they must do it now.

**What is happening on the inside? Zoo disconnects.**

Inside the zoo world there are marvelous new exhibits, fascinating breeding successes, improved education programs, better curatorial management and veterinary treatment, and much more, but also an alarming series of disconnects; of zoo priorities unrelated to the priorities of wildlife, unresponsive to change—ultimately unrelated to the future of zoos.

How many of us have focused our education efforts on those people in the strongest positions to affect the future of the wildlife we exhibit? For the most part, we target our conservation education on children and other non-decision-makers in a process too slow or too far away to address the extinction crisis in which we now live. Our efforts to inform law-makers and government authorities are usually low-key or non-existent. Our campaigns are more likely to be for a new gorilla exhibit than for the existence of gorillas at all.

In fact, some zoo people feel that conservation messages might give their visitors a "negative experience"; that only positive messages should be provided—an idea reminiscent of the auto industry's old arguments against seatbelts! Almost all of us participate in the "professional conservation conspiracy", hiding from our patrons and donors how bad things really are for fear that they will withdraw their support in the face of a seemingly hopeless cause. But conservation action is not negative, nothing could be more positive or more exciting. The WCS donors and trustees that actually get out to see what is happening to nature are our strongest supporters. Wildlife conservation is destined to be among the main adventures as well as challenges of the 21st Century. Our heroes will save wonderful wild creatures and beautiful wild places against the odds. And if these heroes are not recognized as such, it will be our fault.

Zoos seldom participate in species or habitat restoration. In the U.S., organizations such as the National Audubon Society, the International Crane Foundation and the Peregrine Fund are re-establishing uak, tern and puffin colonies, cranes, eagles, falcons and even small island birds—not zoos. Where we have acted, as in the restoration of the California condor, black-footed ferrets, Wyoming toads and the long-ago American bison reintroductions; our potentials are clear. But the fact is that our current propagation programs for vanishing species are usually too small and sub-divided to provide either the number of animals or the scientific samples needed for sound maintenance, restoration or research.

Most of us contribute little financial support to in situ wildlife conservation programs, either to research, education or training. Few of us operate parks or reserves or participate in their management and founding. In 1992, less than 325 in-situ conservation projects were being supported by AZA zoos, 85% by the Wildlife Conservation Society. Today, however, the number exceeds 650, only about 50% by WCS. If this trend continues, I believe that zoos could become the primary non-governmental field conservation organizations. Yet, zoos seldom act collectively to address national or international conservation issues. Few zoo biologists are experienced with the fundamental ecological problems that must be addressed in reserve management and few zoos are the main places our public turns to for wildlife information, beyond the baby-bird-out-of-the-nest variety. We need to train a new breed of zoo people.

How did such disconnects come about? Quite naturally, of course. Most zoos were created as educational and cultural institutions for their local communities and were meant to help convey the gifts of biological literacy and enjoyable recreation. Saving wildlife was not much in the minds of their founders. But even today most of our conservation education efforts are leisurely, uninvoking and indirect, not significantly different from museums exhibiting fossils. We seldom teach the unsettling facts of population biology and even more rarely relate it to our visitors' own behavior. Such "conservation" as zoos attempt is mostly a passive and generalized advocacy, not directly affecting issues or locations. But that was then.

This is now. Then, the conservation crisis was not anticipated, perhaps understandably. Now, it can not be ignored, not understandably.

**How can we modify our vision?**

The prospects for humanity, and for wildlife, depend upon stopping habitat destruction and human population growth at a sustainable level where people can still attain a rewarding and desirable quality of life and where the beauty and diversity of life itself is cared for and nurtured. The immensity of the challenge is highlighted by E. O. Wilson's estimate that it would take two more planets Earth to support the current global population in a life style now common in North America.

Nevertheless, we can not address the future from a foundation of pessimism. What kind of world might informed biologists allow themselves to hope for? What kind of zoo vision? Current estimates suggest that human numbers will level-off during the next 50 years at about 8.8 billion. Unduly optimistic or not, I propose that WZO embrace a vision of the future wherein human effects upon the environment have been tempered and considerable wildlife remains; certainly not as rich or abundant as today's wildlife but with substantial diversity and biomass and numbers of more or less wild ecosystems—and that zoos work to make this vision become reality.

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Part 1: Introductory material

Challenge for zoos — Bill Conway's seminal keynote
We will have to sustain smaller than normally viable wildlife populations in reserves and parks—and living with us, as a part of human-dominated landscapes, lives and livelihoods. Zoos must help save fragments both ex situ and in situ (Conway, 1999).

Thus the 21st Century zoo must be redesigned as a hedge against biotic impoverishment; a time machine buying continuance for faltering wildlife populations; a corridor of care between parks and reserves; and, more than ever, humanity’s primary introduction to wildlife, promoter of environmental literacy and recruiting center for conservationists.

The room available to wildlife in nature’s remnants will be too small to long sustain viable populations of creatures which require big spaces without help, to say nothing of migratory forms whose specialized resources for the seasons of their lives are far apart. The dominant creatures will have to be managed on a species by species basis, with the main focus upon the “landscape species” whose broader ecological needs help define the ecological systems we will seek to sustain (Lambeck, 1997; Robinson, 1999, Conway, 1999). Their requirements will provide the matrix for the biological and cultural advocacy essential for the survival of the thousands of smaller niches necessary to the lesser creatures that share parts of their landscape.

Such a concept requires expert and unswerving population management of big predators and larger landscape species whose size and needs could carry the seeds of destruction for their newly restricted ecosystems. It will require monitoring at zoo levels of intensity; the curatorial and veterinary management that today is lavished only on zoo animals in SSPs and EEPs.

The arts and sciences of translocation, reintroduction and habitat restoration will have to be further developed in a species-specific way, and by organizations accustomed to dealing with multi-species problems and free of political special interests; by zoos—if they can grow up to it.

In this connection, much of what has been said about reintroduction of captive-bred animals into the “wild” is less and less relevant. Future opportunities will be as much “introduction” as “reintroduction”, for available habitats may be greatly altered, lacking their original complements of predators and plants as well as the same dangers or the same resources.

Fundamentally, the saving of wildlife is a social process burdened with widely disjunct cultural values. Ultimately, it depends less upon “how?” than upon “why?” The existence and charisma of living animals themselves are the best answers. It is a special role for zoo education.

What changes must zoos and aquariums make?

All this is fine for generalities, I suppose, but what about specifics? How can zoos and aquariums respond to such a vision? What changes must they consider? Three seem self-evident:

First, because wildlife habitats are disappearing, most zoo animals will have to be collectively managed in closed populations, so zoo programs must be planned, above all, to sustain long-term viable populations. SSPs and EEPs must be expanded. (The average SSP is now only 143 specimens.) And this also means that, except for zoo relationships with parks and reserves, other zoo priorities must be secondary. The next break-through exhibits may be given over to the propagation of endangered species, perhaps with zoo-goers on a pay-per-view basis, their support going to the protection of parks and reserves. The “Noah’s Ark paradigm” will, inevitably, come back into its own as we seek to save animal “seeds” for habitat restoration and partner with reserves and other kinds of conservation programs.

Second, maintenance of high species diversity in zoo collections creates diseconomies of scale because of the need for many costly species-specific protocols. Thus collection planning must focus more on specialization with animals having compatible requirements, and far more upon international collaboration.

Third, to sustain interbreeding populations of the species they exhibit and contribute to the survival of under-sized park populations, zoos will have to make a larger commitment to the sciences of applied ecology, assisted reproduction and population management. Nevertheless, to propose captive propagation as a primary solution to the loss of major habitats and wildlife biomass is to trivialize conservation science and the knowledge we have of it—a topical treatment for a tumor.

Some zoos are responding to these concerns. The Denver Zoo, and several others, have built conservation contribution machines where visitors may give cash towards the preservation of chosen species. Modified parking meters have long been used by various collections to generate support for rain forest preservation. Perhaps charging a conservation percentage at zoo entrances is an appropriate option. New York’s Bronx Zoo has opened a major complex entirely focused upon Congo Basin conservation wherein the exhibit admission fees may be voted toward the cost of specific Congo conservation projects. It is expected to generate nearly $1 million each year.

The acquisition of “zoo reserves” by coalitions of zoos has been proposed (Conway, 1998) as a way of protecting more habitat, providing local incentives for conservation and also providing for monitored off-takes for zoo exhibits. It may work best with small, short-generation species, as a constructive alternative to costly breeding programs.

Beyond the direct implications of the extinction crisis for zoo collections is the zoo’s potential roles in directly saving nature. Two loom large:

Part 1: Introductory material

Challenge for zoos – Bill Conway’s seminal keynote
1. Reaching and advising major decision-makers, and all the others we can, about the nature of biological limitations and specific conservation issues.

2. Directly helping to sustain wildlife in nature—or what must pass for nature—in the years ahead. Helping to sustain wildlands, reserves and species, especially those which have lost their habitats, is our greatest potential service to society. More than 115 parks and reserves protecting about 61 million ha. have resulted from WCS's in situ conservation efforts.

Surely it is time for every new wild animal exhibit to answer three central questions positively: If this exhibit were not built, would wildlife be hurt, helped or unaffected? Will it provide for the continuity of its inhabitants? Will it contribute to species preservation in nature?

A zoo exhibit's contribution to conservation may be financial, scientific, educational or through propagation—but it may no longer ignore the extinction crisis. It is past time for zoos to stop arguing that exciting children in the New York or Tokyo about the plight of gorillas in Cameroon or Congo is responsive conservation. It is too indirect, too slow, too far away and too unlikely to affect the real issues.

Today's exhibit techniques allow us to present wildlife situations as never before, visualize places our visitors could never go, bring nature into our zoos in real time, interpret the beauty and ecology of the creatures we see at any magnification, and offer animal population simulations under any scenario—if we can sustain the animals. Otherwise all this becomes paleontological.

Where else should zoos be focusing? We pay too little attention to 3rd World zoos located on the front lines of the Earth's most biodiverse habitats. Seventeen of the 20 largest cities on earth will soon be located in the 3rd World. Their zoos are struggling to survive. We must help them to make a difference where it counts, where the wildlife is.

And it is essential to take advantage of the extraordinary opportunities in communication presented by the Internet. By this I do not mean inter-zoo communication alone, as important as that surely is, but communication with conservation decision-makers; with people in or near wildlife areas and current dilemmas who need information, whether they know it or not. The admirable networking of CBSG in this regard deserves stronger zoo support. Indeed, the work of the Specialist Group already provides the international zoo community with much of whatever positive voice it has. Unless WZO itself is able to coordinate its actions and programs globally, it will not only be ineffective in international conservation but also in winning the support needed for the growth and continuance of zoos.

Thus the Zoo's vision for the 21st Century should be to become proactive wildlife conservation care-givers and intellectual resources; to step out beyond our fences by aiding parks and reserves; to sustain animals which have lost their habitats and conduct campaigns to restore them—and to provide from our collections as many key species as possible to be the stimulus and centerpiece of conservation efforts around the world.

Such commitments must come to be recognized as of a different order than those we make in humanity's other preservation efforts. We need make little sacrifice to save art, literature and music—no long term commitment to a future that might really affect our individual pieces of the economic pie. But to save nature we must sacrifice the opportunities to consume or destroy it. And instant gratification for its saviors is rare.

Far more than most of the art and literature of our time—to say nothing of our more trivial entertainments—wildlife science, education and preservation resonate with moral purpose and importance, with wholesome aims and prospective significance. Inevitably, this makes the contemplation of wildlife conservation uncomfortable.

To become proactive conservation organizations, engines of conservation, is a powerful and inspiring role for zoos in the next century. "But", as one of my colleagues put it, "zoos and aquariums were not designed to be conservation organizations". The question is, can they be?

References


Part 1: Introductory material

Challenge for zoos -- Bill Conway's seminal keynote
SWOT EXERCISE

A SWOT exercise is a very useful tool for assessing the strengths, weaknesses, opportunities and threats of your organisation, a project, a programme, a group or whatever point of discussion you need. The way you do it is:

You put a large “plus” + onto butcher’s paper and in each quadrant put your headings: Strengths, Weaknesses, Opportunities and Threats of the point of discussion. Participants are guided through the exercise by a facilitator and requested to “brainstorm” by freely suggesting characteristics which immediately occur to them under these four topics.

If there are other propositions, you can do separate SWOT Exercises for them. Sometimes people in a group have a lot of trouble thinking about Threats, so you can divide the “Threats” quadrant into two parts, e.g. What might happen to us if we 1) do this or 2) don’t do this thing?

There are interesting cross-cultural matters that surface. People in some cultures think of “Threats” as criticism - eg in Thailand there was no hope of filling in the quadrant. Professional services responsible for wildlife might think that people will think they are not doing their job if they admit there are any threats left! Threats can take non-traditional forms: for the tiger/lion question a threat might be “People in authority might think zoos can’t or won’t help out in a crisis” or “The Indian Humane Society might take over if we don’t take them” or whatever, - but Threats is a concept that does imply “danger”. Facilitators should be careful and sensitive to the group.

If the workshop participants are a bit “wooden” or shy in a SWOT Exercise, it’s sometimes useful to use the Six “Thinking Hats” routine of Edward de Bono’s. People figuratively wear one of six coloured hats, each one of which has a certain thinking quality. They all have to be “worn” and the participants have to say what hat they are wearing when they are making a point. It’s a bit of fun and can draw folks out a bit.

“The purpose of the six thinking hats is to unscramble thinking so that a thinker is able to use one thinking mode at a time - instead of trying to do everything at once. The best analogy is colour printing. Each colour is printed separately and in the end they all come together”

The essence of each hat is -

- WHITE: “virgin” while, pure facts, figures and information,
RED - "seeing red", emotions and feelings, also hunches and intuition;
BLACK devil's advocate, negative judgement, why it will not work;
YELLOW - sunshine, brightness and optimism, positive, constructive, opportunity;
GREEN fertile, creative, plants springing from seeds, movement, provocation;
BLUE cool and control, orchestra conductor, thinking about thinking;

You write up the game rules, and people have to say what hat they are using eg "I want to make a yellow hat remark".

These techniques will help "break the ice" of a frozen SWOT.

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<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<td>Opportunities</td>
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**SWOT for South Asian zoos**

A SWOT exercise was conducted at the First South Asian Zoo Educator Course on 9 August 2000 led by Sri Ang Phurp Sherpa of Central Zoo and Meena Raghunath of Centre for Environmental Education.

The topic or target of the SWOT was "Environmental Education in South Asia". Participants in working groups for each of four countries listed the following Strengths, Weaknesses, Opportunities and Threats for their country.

**SWOT for India**

- Strengths
  - Professional expertise available
  - Networking available (ARNIZE)
  - Legislation
  - Concept of environment through education in all levels
  - Afforestation
  - Prevention of poaching/killing
  - Prevention of wrong myths

- Weaknesses
  - Outbreak of diseases
  - Religion

- Resources
  - Trained personnel, non-availability of
  - Corruption/bribery
  - Lack of political will
  - No employment opportunities
  - Organisational problems

Part 1: Introductory material
-- Disturbance through tourism
-- Fixed notion in public mind

**Opportunities**
-- Presence of several NPs, WLSs and zoos
-- Conservation of biodiversity
-- Preventing deforestation
-- Unemployment, availability of man power
-- Resources - minimal requirement
-- Tourist activities
-- Media favour

**Threats**
-- Developmental activities will be stopped (eg. Narmada)
-- Over awareness
-- Education system
-- Population explosion
-- NGOs (animal rights activists)
-- Camps (fire)
-- Non-vegetarian/ medical values
-- False animal lovers
-- Present climate/ diseases
-- Media

**SWOT for Bangladesh**

**Strengths**
-- Lecture room available
-- Resource personnel available
-- More credibility visitor to visitor
-- Existing facilities
-- Minimum resources required
-- Extended education force

**Weakness**
-- Non-availability of equipments
-- Non-availability of funds
-- Tools
-- Lack of planning
-- Need to be trained
-- Cannot control what message they are giving
-- Culture not accustomed to volunteerism
-- Lack of dependability
-- Time from zoo staff
-- System – no post of education officer

**Opportunities**
-- Increased access to people in all sections of community
-- Opportunities to contact different NGOs and sources
-- Increased access to important people in community
-- Increased access to resources
-- Policy support (India)

**Threats**
-- Management interference from authority
-- Local politics interfere with management
-- Non-availability of trained volunteer
-- Not easy to get volunteers
-- Volunteer expectations too high
-- Wrong behaviour due to lack of training
-- Want to impress other visitors by being in an enclosure
-- Legal implications
-- Local politics interfere with management

**SWOT for Pakistan**

**Strengths**
-- Live animals
-- Large numbers of visitors – education and sponsor attraction
-- Central location of zoos
-- Self-financing
-- Bio artifacts
-- Zoo keepers/ vets
-- Education programmes (Lahore Zoo)

**Weakness**
-- Human resource
-- Lack of interest
-- Proper volunteers
-- Government set up
-- Funds
-- Lack of coordination between govt. and NGOs
-- Survey (needs)
-- Non-availability of education centre
-- Climate

**Opportunities**
-- Sponsors/ multinational companies
-- Legal hurdles

**Threats**
-- Undesirable activities of volunteers
-- Unwillingness towards EE
-- Illiteracy
-- Financial support
Part 2

Why Zoos for Education?
WHY Zoos for Education?

because . . .

- Zoos provide multiple opportunities to educate a great variety of people of all ages and levels.
- Zoos reach hundreds of millions of people all over the world offering an excellent opportunity for education and unequalled potential to heighten public and political awareness of the importance of nature conservation.
- Zoos attract many more visitors than most natural history museums, botanical gardens, and other comparable nature-oriented institutions.
- Living Animals are the great and unique feature of zoos and form the very basis of zoo education. It is only in zoos that one can see certain animals alive and in a simulated natural habitat.
- People all over the world go to zoos during their free time and of their own free will.
- Many diverse groups of people visit zoos, including groups of all ages, educational levels, different social, ethnic, and cultural backgrounds visit zoos. This diversity is seldom seen in other cultural, educational, or nature-oriented institutions and provides an extra dimension to the education potential of zoos.
- The world total of zoo visitors is around 620 million. Asian zoos have the some of the highest number of visitors per zoo of any in the world. More than 50% of world zoo visitation takes place in Asia.
- The total zoo public forms the target group for informal education in or by the zoo (that is, education which is not connected with the curricula of formal educational institutions).
- Consumers of media — press, radio and television — and media persons themselves are a vast target group for which innovative zoo education programmes can be a fascinating subject.
- Investing in zoo educational projects is of value to governments, nature conservation and animal welfare organizations.
- Education is compatible with Recreation.
- Formal education groups such as schools visit the zoo specifically for education purposes.
- Zoo-based biological and conservation education in formal teaching curricula stresses the importance of wild animals, their habitats, and ecosystems which leads to the insight that life on earth forms one great system.
- Direct contact between students & zoo teachers enables an intensive and interactive manner of education.
- A Variety of Biological Themes Can be Explained by Zoo Education. Research and Conservation of Endangered Species are but two.
- Zoo education has become a separate discipline and science with man resources throughout the world which an enthusiastic zoo educator can tap.
All zoos are potentially perfect places to educate the public about all aspects of animal, ecological and environmental issues.
Why Zoos?

- Zoos are the only place for the general public to encounter wildlife in "safe" situations and at reasonable cost.

- Zoos maintain a collection of living animals from different parts of the country, sometimes from other parts of the world as well. In a single day, one can see animals of different kinds, and possibly get an idea about their habitats.

- About 60,000,000 (one-tenth of the human race) visit zoos somewhere or other in the world each year. 5,000,000 people visit zoos every year in India. Zoos are thus among the greatest opportunities for conservation education.

- Zoos are suitable places for animals whose numbers have reduced drastically in the wild, and help in captive breeding of animals.

- Zoos offer the opportunity for scientific study of animals. Many university students of zoology and veterinary science use zoos as their "laboratory" or a place where they can carry out practical research or field studies. Scientists doing behavioural studies of animals visit zoos to study the captive animals.

- Zoos offer individual animals protection from poachers and other problems. In the wild, animals face threats such as hunting, poaching, loss of habitat and pollution of air, water, etc. Inside zoos, the animals are safe from these threats.
Functions of a Zoo
Today nearly every country and all important cities have a zoological garden that fulfills the following requirements:

Representation of a country's heritage
A zoological garden is the most suitable place where endangered animals are protected and thus we can save our heritage and national wealth which have no equal either in money or material.

Amusement and Recreation
The common idea about a zoological garden is that it is a place where you can pass your leisure hours teasing monkeys and apes, riding elephant or camel, laughing at the awkward gait of a Giraffe or Kangaroo, watching the majestic movement of the king of beasts, astonishing at the speed of the deer, unsurpassable beauty of birds of paradise, pheasants, the chattering of love birds, the charming and dreadful fangs of the King Cobra, and many other heart-beating sceneries and activities. This era of science has made man a mechanical device and the struggle of supremacy is increasing with the passage of days.

Sparing time for recreation and amusement is a must to keep the brain and body healthy as a zoological garden provides the cheapest and the best from of recreation and amusement by displaying animals at their nearest ecology.

Conservation
Some wild animals are declining in numbers and the danger of their actually becoming extinct looms large. Pere David's Deer, the American bison, the Przewalsky's horse, Arabian oryx, Mountain zebra, Okapi etc. are few such examples of which timely zoo conservation action has aided in their conservation.

Brown Bear at Karachi Zoo, Pakistan

Education and Research
For the public in general and scientists in particular, a Zoological Garden is an institution of research where wild animals can be studied from close quarters. Research in behaviorism and treatment of wild animals have been successfully carried out first on animals and then on human-beings. A large number of medicines have been evolved this way.

Karachi Zoo
The Karachi Zoo established 1878, occupies a total area of 33 acres with 110 cages or enclosures and four ponds. The zoo has a total of 166 mammals, 436 birds, and 214 Reptiles, altogether 843 individuals of 92 species.

The Karachi Safari Park, Karachi Municipal Corportation was founded in 1970 and occupies a...
total of 407 acres. There are a total of 17 mammal species (353 individuals), 9 bird species (242) totaling 595 animals.

Karachi Safari Park

swamp and pond measuring about 10 acres. 100 birds are expected to be exhibited when the desired number is obtained.

It is in the Safari Park where major work for conservation of the indigenous and exotic animals is being in process during last 4 years. We had major success in breeding of mammals. The success has been mainly due to keeping animals in ideal ecological habitat species-wise in spacious enclosures, by giving them the right food in right quantity and giving them proper veterinary supervision. The births during last five years are as follows:- i) Mammals—454; ii) Birds—425; iii) Reptiles—128.

The Safari area measure 147 acres out of which 44 acres will house Twenty Major African Species. "Others" including important Asian Fauna, will be exhibited in 90 acres consisting of 30 species and 1000 animals. The lake will have as many species as are available for

Part 2: Why Zoos for Education?
Nilgai ranging over open plains at the Karachi Safari Park

Lions at Karachi Zoo

Karachi Zoo has a handsome leopard

Part 2: Why Zoos for Education?
The Department of National Zoological Gardens

The main objective of the Department of National Zoological Gardens is to collect and maintain live animals in order for the purpose of conservation, education, entertainment and research. National Zoological gardens (NZG) was established in 1936 at Dehiwala. The Elephant Orphanage at Pinnawala also brought under the Department of National Zoological Gardens in 1984.

The Total strength of the staff of the NZG including Pinnawala Orphanage is

289. During the period 1994-1999 the number of training programmes and worshops were conducted by the NZG were 15 and the number trained were 300. Also eleven persons have been trained abroad during 1994-1999.

Education Programme
Zoo education programmes for school children was reorganized in 1999 and 70 programmes have been conducted with the participation of 5000 students. Also 100 students have been assisted with school projects in 1999 under the new education system. As the NZG

Penguins have created a frenzy of excitement in visitors. Attractive graphics teach visitors about these peculiar animals

Part 2: Why Zoos for Education?

National Zoo, Sri Lanka
carried out its education programmes under so many limitations, a fully-equipped education centre has been constructed in 1999 and it is now open to the public.

**Modernization of Cages**
Most of the animals' cages at the Dehiwala Zoo are very old and outdated. Therefore the NZG has taken action to alter them to suit modern open zoo concepts. During the period between 1995 and 1999, eighteen such enclosures have been constructed. Five are now under construction. A face-lift has been given to the Dehiwala Zoo by adding ponds, water falls and lawns etc. in 1998 and 1999.

**Animal Breeding**
A breeding centre for the Dehiwala Zoo was constructed in 1999 and is now in operation.

**“Friends of the Zoo” Organization**
“Friends of the Zoo” a volunteer organization working under the NZG has been re-organized in 1998 and its members are now taking part actively, in zoo development activities by conducting ‘Sramadanas’ periodically and organizing social activities such as educational tours and picnics.
ZOOS CONDUCT RESEARCH -- Madras Crocodile Bank Trust

The Madras Crocodile Bank (MCBI) was started in 1976, at a time when crocodiles in India were nearing extinction and would have disappeared unless conservationists came forward to help. The aim was to make a breeding centre from where surplus animals could be released back into their wild habitat as well as serve as a refuge where large stocks could be maintained till conditions improved in the wild. At the Crocodile Bank's inauguration, there were twenty-five crocodiles. Almost 25 years later we produced over eight thousand, several of which were introduced back into the wild. The breeding programme has been extremely successful.

One of the main activities of the Crocodile Bank is to carry out research on the reptiles of India, particularly crocodiles for breeding and stocking purposes. Controlled temperature experiments on the eggs of the Mugger Crocodile (Crocodylus palustris) show that varying the temperature aid in producing preferred sex of the hatchlings. This is an important discovery as the male-female ratio can now be regulated. Also, instead of the usual one clutch of eggs, many crocodiles lay two clutches per season. These are some of the many findings that have come out of the Crocodile Bank's research programme.

The Crocodile Bank also breeds water monitor lizards and carries out field studies in other reptiles and amphibians. It has started a breeding and research programme on turtles since it recognizes that 26 species of Indian turtles are endangered. Some species like the Cane Turtle of Kerala and Tamil Nadu may survive only through captive breeding programmes. The Crocodile Bank is helping in this effort.

The idea behind the Crocodile Bank is not only to produce more crocodiles through captive breeding, but also to spread environmental awareness through this generally disliked and unpopular animals. Through signboards and contact with people who work here, tourists learn about the fascinating and complex world of animals, and the importance of preserving it, naturally with particular emphasis on the crocodilian families.

The Crocodile Bank also publishes a scientific journal Hamadryad. Its staff regularly contributes papers and articles for publication in popular scientific journals, magazines and newspapers. It is hoped that this will help us to reach across the country with the message of the need for reptilian conservation in India.

The Crocodile Bank is located on a major tourist route, en-route to the temple town of Mahabalipuram in Tamil Nadu state of south India. As a result of the location, we receive almost 5 lakh (500,000) visitors every year. These include school students, research scholars and the general public. The Crocodile Bank educational activities are directed towards catering to interaction with and education of all the different categories of visitors to the park. It has been found that the majority of visitors at the Crocodile Bank are visiting merely as a pleasant excursion, rather than for serious study of the animals. In view of this it is important for us to try and first cultivate in them, an interest for these animals and then try and get across the message of conservation and the role of crocodiles in the environment. For this purpose, we are using large, well placed signboards detailing crocodilian behaviour, as well as direct interaction with the visitors by going out and talking with them, etc.

There are several media used for educational activities at the Crocodile Bank. Some of them are,

- **Signboards:**
  a) Large, conveniently placed signboards which detail crocodile behavior and general habits.
  b) Within the enclosures, boards highlighting the species, their specific habits, food preferences, breeding details and range.

- **Liaison with visitors:**
  At the Crocodile Bank the personal touch is brought into play and visitors are shown around the park, while the staff point out interesting sights to see, such as the nests of the animals, young animals which may be in the enclosures, etc. At the same time, the staff will also attempt to put the message of conservation and preservation of the environment across.

- **Interaction with School children:**
  This is perhaps the most important way to educate people.

- **Audio-visual aids:**
  The Crocodile bank has developed and started an audio-visual programme for educational activities, particularly directed at schools.

- **Nature Camps for school children:**
  This activity has been carried on, for several years. School children are invited to stay at the park for two to three days and, in the course of this stay, they are brought into close contact with the reptiles and shown...
their behaviour, their feeding and breeding habits, etc.

**Writings:**
Our staff regularly contribute articles and papers to various magazines.

**Films:**
The Madras Crocodile Bank has also produced several short documentary films on subjects such as snake bite, rats, crocodiles and turtles and on the Treasured Islands (Andamans) with both English and Hindi commentary.

Signboards placed around the Madras Crocodile Bank:
-- Appearances can be Deceptive. Crocodiles are more closely related to birds than to lizards

-- Crocodiles often bask with their mouths open. This probably helps them to keep cool

-- Natural Predators of Juvenile Crocodiles in the Wild, Birds, Mongoose, Monitor Lizards, Civet Cats, Adult Male Crocodiles, Egg Stealing (Man), Poaching (Man)

-- Breeding Ecology and Parental Care in the Mugger Crocodile (*Crocodylus palustris*)

--- List of the Crocodile species of the world
--- Pictures of crocodile skin products such as shoes, briefcases, belts, etc. with message “Don’t buy products made from their skins; you are contributing to their destruction.
--- Crocodiles can Jump! Stay away from the walls of the enclosures While this board is primarily aimed at dissuading people from leaning into the enclosures and from sitting on the walls, it also serves the purpose in that it informs and educates the visitors about the ability of the crocodiles to jump.
--- List of bird species found at the Madras Crocodile Bank
A Total list of 48 bird species from the premises of the Madras Crocodile Bank have been catalogued.
--- Why are crocodile populations declining? Pollution of major waterways through industrial affluents and chemicals.
Hunting and poaching for crocodile skins to supply the still flourishing clandestine trade and eggs to supply the Chinese kitchens which sell these items. The fact that crocodiles are not at all popular animals and are greatly feared have also contributed to their destruction. Habitat destruction and loss of undisturbed areas for the animals to live also play a major role.
--- Alligators can stay under water for more than 6 hours at a time without coming up for breath!
--- Small saltwater crocodiles can run as fast as 30 miles (48 Kilometers) per hour

Part 2: Why Zoos for Education?
Layout of signboards in the enclosures at the Madras Crocodile Bank:

Picture of the reptile in this enclosure

Name and Scientific Name

Status in the wild (Endangered/Critically Endangered)

Description of the reptile

Habitat where it is found

Size to which it is known to grow

Food details (in the wild)

Breeding (nest type, clutch size and incubation period)

Conservation efforts

The text is presented in both English as well as the local regional language i.e. Tamil. Although the majority of visitors are Tamil speaking, there is also a good number of non-Tamil speaking visitors visiting the Madras Crocodile Bank.

Name: Mugger or Marsh Crocodile
Scientific Name: Crocodylus palustris
Status in the wild: Vulnerable
Habitat where it is found: Swamp, lakes, wetlands
Distribution: India and Sri Lanka
Description: It grows up to 4 m and feeds on fish, birds, and mammals. It attacks man. Eggs are laid in holes in sand banks at the beginning of the rainy season. Incubation is around 40 days and young are about 250 mm in length.

Liaison with visitors: the personal touch is brought into play and visitors are shown around the park by Rom Whitaker himself.

Part 2: Why Zoos for Education?

Madras Crocodile Bank
ZOOS HAVE ANIMALS -- Dhaka Zoo, Bangladesh

The Dhaka Zoo was opened to the public in 1974. It is under the administrative control of the Livestock and Fisheries Department, Government of Bangladesh. The Zoo area consists of 213 acres of beautifully vegetated area not far from the city with two natural lakes in the zoo.

There are many, many animals (2465 birds, 1210 mammals, and 143 reptiles of 187 species. There are more than 200 employees to care for them including eight technical staff trained in a Zoo and Lab Animal Management course offered by the Agricultural University near Dhaka, Bangladesh, although a small country, is the eighth most populous country in the world. There is not much tourism so that most of the visitors to the zoo are from Bangladesh itself.

The rhinos, which were procured from the Parks Department in Nepal in 1991, have a very large, spacious enclosure and visitors can see the rhinos against a backdrop of a vegetation in another direction. Rhinos are protected from visitors by dry moats surrounding the enclosure. The zoo also has a very large hippo enclosure and elephant enclosure. All these large ungulate enclosures have very spacious bathing pools.

There are six other zoos in Bangladesh.

1. Dhaka Zoo, Mirpur, Dhaka, Bangladesh (213 acres)
2. Rangpur Zoo, c/o Dy. Curator, Livestock Department, Rangpur, Bangladesh (15-20 acres)
3. Chittagong Zoo, City Corporation, Chittagong, Bangladesh (about 35 acres)
4. Rajshahi Zoo, City Corporation, Rajshahi, Bangladesh
5. Jahanabad Zoo, (Army), Jahanabad Cantonment, Khuna, Bangladesh
6. Comilla Zoo, District Authority, Dist. Comilla, Bangladesh

Dhaka Zoo is the largest zoo in Bangladesh and supplies animals to the other zoos in the country.

Part 2: Why Zoos for Education?
Hippos having their lunch

A lion lying around

Large walk-through aviary at Dhaka Zoo

Part 2: Why Zoos for Education?

Dhaka Zoo, Bangladesh
Part 3

Where & when for Zoo Education?
WHERE & WHEN
for Zoo Education?

WHERE
GOOD ZOO, BAD ZOO, SMALL ZOO, LARGE ZOO -- any zoo, if it is transparent and plans well, can serve a conservation purpose by educating the public, no matter how small or shabby.

Inside the zoo
-- animal exhibits, visitors' centre, interpretation centre, hall or theatre, wayside exhibits and signage, printed matter,

Outside the zoo
-- schools, orphanages, army, colleges, clubs, any public gathering, exhibitions, fairs, special events, media (t.v., radio appearances), etc.

WHEN
Daily
hourly
lunch time
feeding time

Weekends
school programmes
family programmes
recreation oriented

School holidays
special programmes for different age groups
zoo school
overnight camping in or near zoo
outings to wildlife sanctuaries

Religious holidays
Day after Id draws large crowds
Christmas

Special days
World Environment Day
Tree day
World Animal Day
World Forestry Day

All the time ...
There is no time not appropriate for education ... in the zoo

Everyday is zoo education day.
Treasure Walk
The zoo is a "gold mine" of information on wild animals and their behaviour so the Central Zoo named their students zoo guidebook "Treasure Walk".

Participants of the Educator Training Workshop were each given a copy of "Treasure Walk" and asked to fill it out as they were taken on a tour through the zoo.

It was entertaining to see a group of zoo directors, veterinarians and education officers agonising over the same booklet as students from the local schools.

After the visit participants were asked to comment on the booklet.

Dr. Srivastav and Dr. Salam examine the Central Zoo Treasure Walk booklet (above)

Students and course participants answer questions in their zoo booklets.

Where & when for Zoo Education?
This Treasure Walk is a guided Discovery Activity designed for School Children of age range 9-14 years. The aim of this Activity is to familiarise students with simple Zoological terms and Adaptation features of different wild animals of the Central Zoo. Students can find the Worksheet answers by directly observing the Zoo animal’s appearance, Behaviour and Adaptations. The Treasure Walk Activity is divided into 4 parts with some key words (Educational Themes) to be learnt. Each part may take about 15-20 minutes to complete. Follow the instructions provided in each part. The Answer Sheet is provided at the end of this Worksheet/Booklet. Please do not look at it before you finish all parts of the Treasure Walk.

Before starting the Treasure Walk, please remember the "Zoo Codes of Conduct."

Zoo Codes of Conduct

PLEASE DO NOT Feed the Animals: All the Zoo Animals have a carefully regulated Zoo diet. Please DO NOT feed snacks such as Biscuits, Peanuts, Chocolates, etc. as they are very bad for our Animal’s health.

PLEASE DO NOT Disturb, Torment or Fool with the Animals: Excessive taunting is very bad for our Animal’s health.

PLEASE DO NOT Stick or Throw anything into the Animal Cages: Objects stuck or thrown into the cages cause harm to our Animals.

PLEASE DO NOT Litter: Throw away all Trash, Garbage and Rubbish into the various rubbish bins around the Zoo.

(Note: Because we are making many changes at the Central Zoo, some animals may have been moved to their new enclosures. Please ask one of the Zoo Staff where they may be found.)

Namaste! My name is "Kanchhi" and I am a Rhinoceros here at the Central Zoo. Please, join me on a TREASURE WALK through the Zoo. FOLLOW THE CLUES - Read the Signs and fill in the Answers to the Questions.

Now, Let Us Start the Treasure Walk
CENTRAL ZOO TREASURE WALK

Unfortunately, because of heavy human use of chemical pesticides and pollution many of these wetland areas have become uninhabitable for the Sarus Crane. Based on these environmental problems, the Sarus Crane has become an ......................... species.

The next round Exhibit contains a very special bird: Nepal’s National Bird. Which bird is it? .......................... They have very colourful feathers. How many colours can you count? .......................... The Impeyan Pheasant is an example of an Endangered Species. Illegal hunting for their beautiful ......................... is the main threat to this bird.

Pheasants are well represented in the Himalayas. They have well-developed bills and legs for pecking and scratching on the ground. Male plumage usually ....................... sometimes spectacular; females are mostly drab. They usually feed during the morning and late afternoons.

This round Exhibit contains another Endangered Species. Can you identify it? (Hint: its name has the initials S.................. P.......................). This bird has very beautiful silver feathers. Unfortunately, Poachers continue to kill this bird for their beautiful feathers to make hats and robes. Do you think there are many or very few of these birds left in the wild? ..........................

The next group of small Exhibits belongs to the Songbirds. Listen to all of the different sounds these birds make. They use their feet for ......................... on the tree branches. Continuing on to the next round section, you will see the Sarus Crane, Common Crane and Demoiselle Crane. Cranes are long legged, long necked birds with long, broad wings and short tails. They resemble Storks but their bills are ......................... than the length of head. They fly with outstretched neck, head and feet. Cranes call when flying (Storks are usually silent): there is a powerful trumpet call.

The last round Exhibit are Reptiles and Wild Water Birds. Reptiles are animals with bodies covered by dry scaly skin. Reptiles are also Cold-blooded, which means their body temperature varies with the outside temperature. Can you identify the 2 Reptiles in this Exhibit? .......................... Though they are close cousins, the Gharial Crocodile and the Chinese Alligator look a little different. Can you identify some of these differences?

Gharial Crocodile  .................................. Teeth:..................................
Chinese Alligator  .................................. Teeth:..................................

Also in this round Exhibit are several species of wild water birds. Geese and ducks are plump water birds with ......................... feet. They swim and dive well and are swift fliers. Most of the ducks are migratory which means they migrate from one place to another especially during the Winter Season.
Central Zoo Treasure Walk

Educational Themes:

PART THREE

Animal Classes (Birds, Mammals, Reptiles)
Cold/Warm Blooded
Bird Diversity
Endangered Species
Exotic

Start: From the Peafowl Exhibit.

The first Exhibit in this section is of the Peafowl. Peafowls are very spectacular animals to look because their bodies are covered with very colourful..........................

The Peafowl is a Bird. Birds are the only animals in the world whose bodies are covered with feathers. Feathers come in all shapes, sizes and colours. The male Peafowl called a Peacock, has long colourful tail feathers that it fans out and shakes to attract females, called........................ for mating.

Inside of this enclosure, you will see the Lion tailed Macaque. This animal is not native to Nepal. It was brought from India. The first round bird enclosure Exhibits a number of different kinds of Exotic Domestic Chickens and Turkeys. If means, they are all not native to..........................

The next round Exhibit shows different kinds of riverine birds like Spoonbill, Black Headed Ibis, and Storks. Their main Habitat is near the water in fields and on the edges of streams and rivers. Storks are heavy birds with.............................. legs and necks. Bills are much longer than the length of the head. During a fight, the head and neck are held straight out. Hissing and clapping of Mandibles are characteristic sounds.

This Exhibit also has two species of Scavenger animals. A Scavenger animal eats dead animals, called Carcass. Scavenger animals are an important part of the ecosystem because they are able to convert decaying plant and animal matter into useful nutrients. Can you identify 2 Scavenger animals in this Exhibit?..........................

In the corner, you will see the open enclosure of Sarus Crane, the tallest flying bird in the world. Can you guess their height?..........................

It lives in the wetland areas of the Western Terai and Northern India.

Where & when for Zoo Education?
START: From the Asiatic Lion Exhibit.

The first Exhibit in this section belongs to the Asiatic Lion. The Asiatic Lion is a ferocious nighttime hunter. Groups of Lions, called

...........................................will hunt together. One member of the Pride drives the prey towards the others lying in ambush. One adult male Lion may eat up to 40 kgs of meat in a single meal! Animals that only eat meat are called Carnivores. The animal known as the “King of the Jungle” are only found in the Gir Forest of India. It means they are an

..................................................species of Nepal.

After this Exhibit you will see the Common Langur family.

The next Exhibit belongs to the heaviest Snake in Asia, the Asiatic Rock Python. The Python is a Reptile. Reptiles are Cold-blooded and have lungs for breathing air. Can you think of 3 other examples of Reptiles?

............................................. If you look carefully you may notice the Python sticks its forked tongue out of its mouth. It uses its tongue to smell and sense its environment. The Python’s tongue is just one example of a special Adaptation. Adaptations are features and skills nature provides all living things to help them better survive in the wild. Can you name another adaptation the Python has and what it uses it for?

Adaptation: Tongue Use: smelling and sensing the air

Adaptation: ...........................................

Use: ..................................................

Continuing on, you arrive at the newly built Aquarium Exhibit. This Exhibit houses many different species of Fish. Fish, like Reptiles, are animals with bodies covered by scales and are Cold-blooded.
However, unlike Reptiles, Fish live in water and have gills to help them breathe underwater. As you can see, Fish come in all different shapes, sizes and colours.

The next section belongs to the Blue Rock Pigeons. The Pigeon is a Bird. Birds are the only animals in the world whose bodies are covered with feathers. Feathers come in all shapes, sizes and colours. Birds are also Warm-blooded and have wings. Can all birds fly? Can you identify 2 Birds that cannot fly? and . Can you identify one Mammal that can fly?

Continuing on you will arrive at the female Blue Bull Exhibit and the Souvenir Shop. The next Exhibit is Francois Langur. It is a gift from the Government of China and an Exotic species of Nepal. The Francois Langur is also an Endangered Species. This means that there are . Francois Langurs left in the wild. The main distinctive feature of this animal is that it has 2 colour stripes on the face from mouth to ear.

The next Exhibit belongs to the Male Blue Bull. The Blue Bull is one of the largest Antelope of Nepal. It can survive for long periods without water. Hindus consider the Blue Bull as and so it is protected by religion.

The last Exhibit in this section belongs to the Giant Land Turtles. What kind of skin do the Turtles have? Do you think they are Warm-blooded or Cold-blooded? Thus Turtles are an example of the Animal Class.

Congratulations
You have completed the Central Zoo Treasure Walk.

Hope You Enjoyed the Treasure Walk!
PART ONE

- Webbed
- Swimming
- Large beak with pouch
- Wing
- For catching fish, for flying
- Long snout, tail
- For catching fish, for changing direction
- River, lakes and ponds
- Antlers
- No
- Horns
- No
- Open grass land and forest
- Trees
- Forest
- Yes
- Sleeping or resting
- Night
- Day
- Hair
- Mountain, grassland, forest
- Move
- Day
- Night
- Nocturnal
- Swinging on the ropes
- Picking up food, peeling
- Climbing on the branches, food etc
- Barking
- Antlers
- Quills
- Under the ground
- Males
- Horns
- Black
- Cow, cat, dog, goat etc
- Wild
- Carrion, meat and bones
- Scavenger animal
- Vulture

PART TWO

- Biggest
- Endangered
- Fruit, honey, insects
- Crops, livestock
- Herbivorous
- Omnivorous
- Very few
- Grass and bamboo shoot
- Dry, scaly skin
- Turtles, snakes and crocodiles
- No
- Milk
- Kosiyapuu wildlife reserve
- Endangered
- Carnivorous
- Tigers, black and yellow stripes, and bigger than leopards
- Leopards
- Leopards: Black and yellow spots and smaller than tigers
- Trunk
- Feeding, picking up objects, drinking, bathing
- Tusks
- Endangered
- Food
- Chest
- Yes
- Due to habitat loss and illegal poaching
- Tail
- Lion
- Tree

PART THREE

- Plumage
- Peahens
- Nepal
- Long
- White backed vulture
- And Xing vulture
- Average 5.5 ft
- Endangered
- Impeyan pheasant (Danohe)
- Nine
- Feathers
- Colourful
- Silver pheasant
- Very few
- Ferching
- Shorter
- Gharial and alligator
- Long and skinny
- Fourth tooth in jaw
- Points upward
- Shorter and wider
- All teeth point downward
- Webbed

PART FOUR

- Pride
- Exotic
- Turtles, crocodiles, lizards
- Adaptation: patterned skin use: camouflage
- Breathe
- No
- Penguin, ostrich
- Bat
- Very few
- White
- Cow
- Scaly skin
- Cold-blooded
- Reptile

Answer List
## WHEN? . . . Special Days appropriate for zoos

Any day is a good day to go to the zoo and any and every day is a Zoo Education Day. Some of these “days” seem very far fetched, but the idea is that in the zoo... for the Zoo Education Programme, something should be happening EVERY DAY!

<table>
<thead>
<tr>
<th>Month</th>
<th>Festival</th>
<th>What can be done</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1 4:30th</td>
<td>Animal Welfare Fortnight</td>
<td>India – Animal Welfare Board of India declared event. Zoos can conduct special programmes promoting kind treatment of all animals and in particular addressing their own problems of visitor teasing and feeding of zoo animals.</td>
</tr>
<tr>
<td>January 24th</td>
<td>Chinese New Year</td>
<td>China – Chinese New Year is known all over the world for its beautiful and fanciful dragon dances and costumes. This holiday could be particularly fun for non-Chinese school children, both to learn about the culture of other countries as well as to create the costumes and celebrate dragon dances!</td>
</tr>
<tr>
<td>February 14th</td>
<td>Valentine’s Day</td>
<td>Valentine’s Day is increasingly popular in Asian countries. The zoo could offer free entry to the first ten visitors bringing a Valentine; or, conduct a variety of contests having to do with making a wild animal with your Valentine and highlighting romance among the animals in the zoo.</td>
</tr>
<tr>
<td>March 21st</td>
<td>World Forestry Day</td>
<td>World Forestry Day is a natural event for the zoo. Tree planting ceremonies, both inside and out of the zoo, sponsored by the zoo are always good ideas. Educating the visitors that day with a special focus about the ecosystems and forests where the animals live would also be most appropriate.</td>
</tr>
<tr>
<td>March 22nd</td>
<td>World Water Day</td>
<td>Water is one of the basic natural elements of life. The zoo should celebrate such days and use them to focus their educational activities around this most important necessity of life. Programmes emphasizing the need to conserve water would be most effective on this day. Try putting signs up around your drinking fountains about World Water Day and the threats we are facing as a world population that our water supply will become even more polluted and scarce.</td>
</tr>
<tr>
<td>April 1st</td>
<td>April Fool’s day</td>
<td>Only a very brave zoo would try this one. Announce a contest that anyone who comes to the zoo gate and makes a fool of the ticket collector or gatekeeper, gets free entry. These people have to be in on the joke so they can be ready and make sure too many people don’t make fools of them.</td>
</tr>
<tr>
<td>April 7th</td>
<td>World Health Day</td>
<td>World Health Day is a good day to have a medical Camp for zoo keepers, testing for T.B. and zoonoses. Educating about zoonoses also for the general public would be useful. Many people don’t know that they can catch diseases from their domestic animals, or that they could spread disease by throwing their leftover food in the zoo enclosures or even the forests.</td>
</tr>
<tr>
<td>April 22nd</td>
<td>World Earth Day/Water resources Day</td>
<td>Earth Day and Water Resources Day provide a wealth of opportunities to educate about environmental problems.</td>
</tr>
<tr>
<td>June 5th</td>
<td>World Environment Day</td>
<td>Same with World Environment Day. You can plan a “Clean up, Paint up, Fix up” our zoo programme. Public function with speeches and drama about environmental problems, with painting and essay contests about the environment are always successful and draw a good press.</td>
</tr>
<tr>
<td>June 18th</td>
<td>International Picnic Day</td>
<td>People love to picnic in the zoo. Sometimes this causes problems and some zoos have banned open food in the zoo. If your zoo allows it, however, invite people in general to bring their picnic baskets to the zoo on International Picnic Day and try to get a soft drink company to provide free cola.</td>
</tr>
<tr>
<td>June 1st week</td>
<td>International Volunteer Week</td>
<td>What could be a more appropriate time to honour your volunteers or friends of the zoo. The zoo could use the opportunity to induct more volunteers, to hold special volunteer training and to select and give a prize to the BEST volunteer.</td>
</tr>
<tr>
<td>July 1st</td>
<td>Vanamahotsava Day</td>
<td>(Tree day – traditional and religious) Many Indians celebrate Vanamahotsava Day by planting a tree. Variations are organizing protective devices for newly planted trees so they don’t get knocked down by people or eaten by animals.</td>
</tr>
<tr>
<td>August 6th</td>
<td>Friendship day</td>
<td>A great day to become a Friend of the Zoo</td>
</tr>
<tr>
<td>August 13th</td>
<td>International Left-hander’s day</td>
<td>Offer all left-handed people a discount on entry. But how do you check? Well, give a small prize to all left-handed school children that come to the zoo. Don’t announce it in advance!</td>
</tr>
<tr>
<td>Aug 26</td>
<td>Raksha Bandhan</td>
<td>Raksha bandhan is a religious occasion in Hindu culture. On this day sisters tie a “rakhee” to their brother’s wrist, which symbolizes brotherly and sisterly love, “taking care” of and gratitude for a sibling. Zoos can make animal and plant rakhee’s to symbolise the natural organisms of our world and our commitment to their conservation.</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td></td>
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<tr>
<td>-----------</td>
<td>----------------------------------------------------------------------------------</td>
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<tr>
<td>Sept 16-18th</td>
<td>Clean up the World campaign</td>
<td></td>
</tr>
<tr>
<td></td>
<td>This is another great day to clean up the zoo.</td>
<td></td>
</tr>
<tr>
<td>Sept 27th</td>
<td>World Tourism Day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Many of the zoos’ visitors could be considered as &quot;tourists&quot;, both local as well</td>
<td></td>
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<tr>
<td></td>
<td>as national and international. You could prepare a small handout welcoming tourists from out of town in particular to the zoo on World Tourism Day.</td>
<td></td>
</tr>
<tr>
<td>October 5th</td>
<td>World Habitat Day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Habitats are what hold animals and without habitats neither we or the animals were be able to survive. Take advantage of the day by teaching more about habitats of the animals.</td>
<td></td>
</tr>
<tr>
<td>October 16th</td>
<td>Wildlife Week (India)</td>
<td></td>
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<tr>
<td></td>
<td>Wildlife Week is a very popular special day in India. Many functions and events are conducted and many of them take place in the country’s zoos. Painting and essay competitions, prize awarding ceremonies with dignitaries like Forest Ministers in attendance. It is a wonderful “week” for zoos.</td>
<td></td>
</tr>
<tr>
<td>October 16th</td>
<td>World Food Day</td>
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<tr>
<td></td>
<td>Use this day to teach your visitors about what animals eat and what trouble the zoo goes to in finding them substitutes if the real thing is not possible to procure. Our environment is very much linked with food – without environmental protection, we just won’t have any food. Certain animals are pollinators – bees, other insects, bats, birds – and if they are declining then our food source is also declining, as well as the plant diversity of the earth.</td>
<td></td>
</tr>
<tr>
<td>Nov 1st</td>
<td>World Ecology Week</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching environment and ecology in the zoo is a wonderful way to illustrate the principles of ecology with live animals as symbols of different types of ecosystems.</td>
<td></td>
</tr>
<tr>
<td>Nov 21st</td>
<td>WWF Conservation Day</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Many zoos collaborate with World Wide fund for nature which has declared a Conservation Day. Use this day to invite WWF to your zoo and also to highlight the real purpose of the zoo, e.g. conservation.</td>
<td></td>
</tr>
<tr>
<td>Nov 24th</td>
<td>World Biodiversity Conservation Day</td>
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<tr>
<td></td>
<td>Same goes for World Biodiversity Conservation Day. Use this day to highlight the great diversity of animal and plant life – in the world as well as right in your zoo. Give small creatures, such as invertebrates, which make up 93% of the Earth’s diversity some attention for a change!</td>
<td></td>
</tr>
<tr>
<td>Dec 2nd</td>
<td>Zoo Week (India only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zoo Week was declared by the 1989 Conference of Indian Zoo Directors. During this week some zoos used to celebrate by highlighting the role and importance of zoos in conserving wildlife and teaching people about nature.</td>
<td></td>
</tr>
<tr>
<td>Dec 3rd</td>
<td>World Conservation Day</td>
<td></td>
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<tr>
<td></td>
<td>Same as above.</td>
<td></td>
</tr>
</tbody>
</table>

**Other special “days” – ANY day is a potentially “special day” at the zoo**

- **Animal births and Animal birthdays**
  - Have a birthday party for your animal. Ask school kids to make birthday cards and give a prize for the best one. Hold a function and invite a researcher to give a talk about the biology and status of that species in the wild. Have a drawing competition featuring these animals.

- **Opening ceremonies for new enclosures**
  - Most of the time these ceremonies are simply occasions when politicians and other dignitaries use the opportunity to promote themselves. Try making these days into events which will teach the crowd that gathers to watch the function to really know about that animal.

- **Release of animals into new enclosures**
  - Any day...

- **Inauguration of renovation programme for the zoo**
  - Any day...

- **There are so many more**
  - Any day...
Make religious and cultural festivals "zoo days" -- Raksha bandhan

Rakhees are part of Indian culture. Rakhee's are associated with the religious occasion of Raksha bandhan. Normally tied by a sister to her brother's wrist, the rakhee symbolises brotherly and sisterly love, "taking care" and gratitude for a sibling.

Zoo Outreach Organisation makes animal and plant rakhee's to symbolise the natural organisms of our world and our commitment to their conservation. We have taken these around the world and they seem to charm everyone.

Your zoo can make animal rakhee's for kids and use them in many, many ways -- to educate about a particular animal, to give as consolation prize to all the painting competition contestants who did not win first place, to identify school groups, in a ceremony where kids "commit" to ... taking care of their environment, conservation of endangered species, good behaviour in the zoo ... any number of things. You could even have a contest to design Rakhees for the zoo.

Zoo Outreach Organisation silkscreens them on handmade paper scraps from our ZOOS' PRINT covers using our own screen printing unit. You can make them with identical designs on both sides, with the front and back of the animal, or with an animal on one side and a conservation (or behaviour) message on the other.

Endangered

Fold here. Put a piece of pretty twine in the middle and paste the two pieces together. Then tie the rakhi.

Part 3: Where & When for Education

Special days
Part 4

How? Techniques for Zoo Education
HOW? Techniques for Zoo Education

MASTERPLANNING -- the first step

SPECIAL FOCUS
Species
Events
Themes
Ecosystems/habitat

MECHANISMS

Interpreters - professional, keepers, volunteers
Signage / exhibits / displays
Enclosure or animal exhibit design
Publications
Activity sheets
School programmes
Media
Special activities
Special exhibits
Friends of the Zoo
Zoo Clubs

MONEY
Government grants
Municipal fund raising
Local funding
International funding
Some Elements of Zoo Education / Interpretation
Report of a brainstorming session at the South Asian Zoo Educator Course led by Meena Ragunath

When visitors go to the zoo, they need more than straight "education" -- they require Interpretation.

Interpretation involves "getting the message across", being understood, aiming for a wide scope of understanding, of "explanation" of the material as opposed to simply conveying factual material. Interpretation brings in different perspectives as it often caters to a wider and more diverse audience. In situations which require interpretation, the educator must "tailor-make" the message.

The object of interpretation is helping people understand what is akin to a "new language" for them. When people visit a zoo, their experience of wild animals is probably nil to negative. They are accustomed to relating to animals that they own or can control and which are useful to them in their daily lives. Wild animals in zoos are much more complex that this with a variety of often controversial concepts attached to them. Moreover, the zoo is a multi-sensory experience where ladies (in South Asia at least) are observed with handkerchiefs over their noses when they enter the carnivore section or the honey badger or civet exhibit. Interpretation involves explaining that the "bad smell" of the binturong is "perfume" to a civet of the opposite sex!

In "interpreting" the animals for visitors the zoo educator tries to put themke in context ... of zoo animals being ambassadors for their wild relatives, and relating this to them.

What should be taught? A description of the animal and a bit about its anatomy is important, just in case it doesn't show itself and also to convey how organisms reflect the demands of their environment by adapting over the long term. Also important is to correct misconceptions and misinformation, for example, about animal behaviour. Many people think tigers are vicious brutes that particularly want to make a meal of a human being. The zoo educator can explain that tigers normally avoid human beings and the few which become "man-eaters" do so for very specific reasons. Various types of "bad" behaviour by animals, such as crop lifting, can also be related to the phenomenon of shrinking habitat in which animals have less areas to live.

The conservation status of the animal is important but equally so is relating the status to the habitat of the species and the threats it faces which have driven it into its current conservation status. In this way, the educator create an educational atmosphere for making important connections -- between people's actions and the environment. In the zoo we want to make people ask "what can I do" ... then we have succeeded in our mission.

How to interpret? Interpretation in the non-formal atmosphere of a non-structured learning situation, such as exists in a zoo or a museum, permits educators to use a variety of teaching devices. Some of them are:

<table>
<thead>
<tr>
<th>Touch</th>
<th>-- touching and feeling and handling fur, bones, teeth, artifacts ... even live animals in some situations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performing arts</td>
<td>-- drama, play-acting</td>
</tr>
<tr>
<td>Audio effects</td>
<td>-- animal sounds, forest sounds, weather effects, etc.</td>
</tr>
<tr>
<td>Talks</td>
<td>-- about any aspect of the animals and the institution -- even its inner workings, ...</td>
</tr>
<tr>
<td>Games</td>
<td>-- Environmental games, animal games</td>
</tr>
<tr>
<td>Better exhibits</td>
<td>-- Exhibits which contain features of natural habitat and other items to which educators can relate a variety of messages</td>
</tr>
<tr>
<td>Competitions</td>
<td>-- Painting, drawing, essay, sports related to animal actions (running, jumping, making noise, etc.)</td>
</tr>
<tr>
<td>Interactive questions</td>
<td>-- drawing visitors out, getting them to answer their own questions</td>
</tr>
<tr>
<td>Print materials</td>
<td>-- (pamphlet, handbook, take-homes) -- to get people to think --</td>
</tr>
<tr>
<td>Audio-visuals</td>
<td>-- videos, slide shows</td>
</tr>
<tr>
<td>Multi-media</td>
<td>-- computer games</td>
</tr>
<tr>
<td>Kiosks</td>
<td>-- including touch tables, themed displays,</td>
</tr>
<tr>
<td>Way-side exhibits</td>
<td>-- signs, interactive exhibits, demonstration boxes</td>
</tr>
</tbody>
</table>

Part 4: How? Techniques for Zoo Education

Interpretation
Focused observations -- pointing out elements of an animal or enclosure
Interpretation centres -- buildings devoted to interpretation using dioramas, posters, taxidermy models, etc.
Outreach programmes -- to places which are not normally associated with zoo education or teaching...
hospitals, old folks homes, jails, orphanages, civic groups, etc.

Some principles of good interpretation

Good interpreters “Tailor—make” their material to the situation
Material should be, of course, correct
Material should be Interesting — it should be specific using even narrow subjects, such as “Amazing facts”
Material should contain a Conservation message
Good interpreters use jargon to communicate better
Language should fit the audience
Good interpretative presentations “keep it short and simple”
Too many messages in one presentation is not good
Good interpreters should “Communicate” as opposed to “lecture”
<table>
<thead>
<tr>
<th>EDUCATION VIS A VIS INTERPRETATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUCATION</td>
</tr>
<tr>
<td>CHARACTERISTICS OF</td>
</tr>
<tr>
<td>FORMAL EDUCATION</td>
</tr>
<tr>
<td>* participants generally involuntary.</td>
</tr>
<tr>
<td>* homogeneity among groups, e.g. 7th Standard school children from Krishna School</td>
</tr>
<tr>
<td>* moderately - to - highly structured programmes</td>
</tr>
<tr>
<td>* identifiable goals and objectives common to each class member / teacher</td>
</tr>
<tr>
<td>* extrinsically motivated</td>
</tr>
</tbody>
</table>
What is a good presentation?

Presentations are about communication with the audience. Communication can be achieved only when there is comprehensibility, either through direct speech, use of aids such as demonstration cards, blackboard, flip chart or objects.

There is much more to communication and comprehensibility. Speaking the same language obviously facilitates communication but one's accent may not be comprehensible to certain audiences. The use of jargon may not always be grammatically correct but it can also put an audience at ease and take the formality out of a presentation.

Part of communication involves the presenter's body language -- is he or she "wooden" or communicating distance as with keeping arms crossed in front. Standing up with nothing in front of them, and moving around makes the presenter seem friendlier and more personal. Making eye contact with the audience, moving from one person to another and sweeping the audience also helps in communication.

Presenters with a positive approach, even if the subject is not so positive, get through to their audience better than a droopy, glum speaker. The voice should be projected clearly without mumbling or making asides that are cannot be understood.

A good presenter should try to relate to the audience. If the audience is not too large, a good introduction to a talk is to ask each member to introduce himself. Another way is to ask the audience questions. Using a flip chart is an excellent tool for presentations as people can see what was said two steps before. If you are asking them questions, they can see their own thoughts forming part of the lecture on the flip chart. A good presenter can probably pull or at least seem to pull his own lecture from an audience over the course of a presentation.
Being creative should act as a stimulant. People will wake up and remember new material if presented in an innovative manner, so creativity is a most effective means of making a presentation effective. Trying new things on the audience that are not expected, use of humour and making the presentation fun are tools which relax your audience and make them less hesitant to get involved in a dialogue but also help make it memorable.

None of this comes easy and perhaps the most effective presentor is a confident one. Therefore, practice, practice, practice is the key to good presentations. Even if you have notes or slides, knowing what is coming next and being thoroughly familiar with your material give the audience confidence in YOU, and what you say.

Tools
Using complementary aids to help you with your presentation is fine but the same principles apply -- be familiar with your tools -- know how to operate equipment -- from the slide projector or LCD to the pointer. You can't always count on an institution having an LCD or slide projector if you are presenting outside, and even if you are at home base, the power can fail and generator can let you down -- be prepared for this with back-up tools or strategy (such as a wholly interactive discussion) if possible.

The content of a presentation should be comprehensive, but not more than 20 minutes for a zoo audience. Academics can tolerate and will even appreciate a longer talk but be sure it is of the appropriate length. Use data sparingly and powerfully if speaking to laypersons. Vary your approach. Describe problems and request suggestions for actions which would address them.

The organisation of your presentation is also very important. You should structure it carefully so that it
a) engages interest
b) conveys information and
c) builds up to a strong conclusion.

These principles are the means to good presentations:
    Sequencing -- or order, so that the presentation follows a logical train of thought
    Structure -- so that the presentation seems a unified entity
    Strong conclusion -- so that the audience walks away with a clear idea of the objective of the presentor.

An effective presentor has an objective and tries to achieve that goal with his audience.
Touch tables

Resource person Meena Ragunathan led a brainstorming session on Touch Tables and what the table monitor or educator should talk about.

When the item is a tiger skin it was suggested that the table monitor could describe tiger behaviour, different body parts (and how they relate to behaviour). Body parts can also be related to Trade issues. Status of the tiger can be related again to Trade issues.

People watching can be asked questions to stimulate them to ask - "have you ever seen a tiger in the wild?"; "are you afraid of tigers?"; "do you think tigers all are man-eaters?". The point of a touch table is, of course, touching. Encourage visitors to touch the items but in a respectful and careful manner.

Interpreters can be one or several. If crowds are unruly it is good to have one person to watch the table and the other to demonstrate.

If you have varied items such as antlers, eggs, snake skin, you might try and find a common theme. Perhaps the items represent different animal groups, e.g. bird, mammal, reptile.

Participants of the workshop watched a demonstration of a Touch Table in the zoo and then went back to the classroom where two tables of items have been prepared for them to interpret.

The class divided into two working groups and brainstormed what approaches could be taken with 1) the tiger skin and 2) assorted artifacts such as eggs, bones, antlers, etc.
Uzma Khan of Lahore Zoo was selected as the Interpreter. She gave an interesting presentation focusing on trade of tiger parts. After her presentation, participants playing the part of visitors were encouraged to "give her a hard time".

Kalairasan of Chennai Snake Park obliged by heckling her.

Dubey of Bhopal Zoo was selected as interpreter for the assorted artifacts table and did a good job of describing them.

Touch tables are excellent educational techniques as they can be set up on the crudest of tables and furnished with items that most zoos have lying around.

Interpreters have to face all kinds of visitors, including rude ones and need to know what to do...
Posters as Educational Tools

An elaborate poster relating cranes with Buddhism from Lumbani Crane Foundation

Poster made from a child's painting, undoubtedly from a painting competition during an educational event.

Black and white line drawing intended to be coloured by children is also a good subject for an educational poster.

Pakistani variation of "Put yourself in their place" poster which has been reproduced all over South Asia

Part 4: How? Techniques for Zoo Education
Signage exercise

After a presentation from Sally Walker on creativity in signage and from Meena Raghunathan on structure of signage, participants used material they had been given over the course of the various lectures and exercises to create a sign for their zoo.

Central Zoo sign on Black Buck in Nepali language

Participants hard at work on their signage assignment.

Part 4: How 7 Techniques for Zoo Education
Rhesus Macaque (Macaca mulatta)

This Macaque is found in Nepal, India, Burma, Pakistan, Bangladesh, Sri Lanka, Thailand and China. They live in habitats ranging from sea level to elevations of 2,500 m. The Rhesus Macaque is a medium-sized primate with robust limbs and a squat, thick body. The face is brown and pink colored which becomes reddish during the estrus/heat period. They are omnivorous diet consisting of fruits, grains, seeds, leaves and sometimes insects, they usually feed on the ground and eat fast eaters, they have well developed pouches in their throat. They are special adoptions for feeding. Rhesus Macaque are also used as research animals. In many laboratories and institutions, they have common blood groups like humans in Rhesus factor. It is sacred to Hindu religion.

Facts
Life Span: 22 years
Age: 2-3 years
Gestation Period: 150 - 180 days
Breeding Season: October to March
Litter Size: One Baby

Dr. R. K. Sahu, Ahmedabad Zoo and Dr. Mansoor Qazi, Karachi Zoo and Safari Park partnered to create a nice sign on Rhesus macaque.
Common Leopard

Local Name: Chita
English Name: Common Leopard
Scientific Name: Panthera pardus

Description: The Leopard is the most beautiful animal among the big cats. It has distinctive black spots all over its body which helps it to camouflage. Some of the Leopards are born black. Male measures between 1.5 - 3.5 m long. The females are slightly lesser in weight and size.

Range: Hilly areas of Nepal Terai, India, Bangladesh, Burma and Sri Lanka
Habitat: Dwell in dense forests and jungles. Arboreal in nature
Reproductive Habit: Gestation Period 3 - 3.5 m, litter number varies from 2-3 kittens.
Conservation Status: Endangered

Dr. Islam of Dakha Zoo and Dr. Nath of Chittagong Zoo created an attractive graphic on the leopard. Meena Rangunathan evaluates their work.
Name: *Lion Tailed Macaque*
Local Name: Karung Korungoo
Scientific Name: *Macaca silenus*

**Monkey with a Lion Tail**
Found only in dense forests of Western Ghats of India. Has a black coat and long gray hair on its face falling from temples to cheeks. Feed on different kinds of plants, fruits and also insects. Highly social animals and found in troops of 20 - 30. They are becoming rare and threatened species due to deforestation now.

<table>
<thead>
<tr>
<th>Average Weight: 6-9 Kg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of the body: 20 - 24 inches</td>
</tr>
<tr>
<td>Length of the tail: 10-15 inches</td>
</tr>
<tr>
<td>Maturity: 4 years</td>
</tr>
<tr>
<td>Gestation Period: 170 days</td>
</tr>
</tbody>
</table>

**IT IS ENDANGERED PLEASE HELP TO CONSERVE IT**

Dr. Jayanthi Alahakoon of Colombo Zoo and Dr. N.C. Roy of Rangpur Zoo collaborate on a sign for the Lion-tailed macaque.
**Sarus Crane**

*Grus grus*

Distribution: India, Nepal, Bangladesh,

Description: One of the tallest birds of India, Siberian and Demoiselle

Species of this bird visit nearby Bharatpur Sanctuary and Madhav National Park, Shivpuri India during every winter. Its population is quickly declining in the wild due to the destruction of its habitat.

Pradeep Srivastava of Gwalior Zoo selected Sarus Crane for his sign.
Common Langur
Presbytis entellus

This common Monkey is associated with Hindu religion
distributed in Nepal, Tibet, India and Sri Lanka.
Lives in troop lead by dominant male.
Mostly inhabits wooded forests.
Feeds on leaves, flowers and fruits.

Dr. V. Kalairasan of Chennai Snake Park selected a non-reptile for his sign, the common langur.
Humayan Taher of Madras Crocodile Bank and Dr. M. Shaidullah of Dakha Zoo collaborated on a sign for the White Stork.

**White Stork**
*Ciconia ciconia*
Seino Bhudiphor

**High Flier**
Travelling 6700 km, the white stork is a migrant. As the name suggests it is white with black wingtop. Young birds are black and brown colored. They are found in wetlands areas, in Nepal, in the Koshi Tappu Wildlife Reserve. They feed on fish, frogs and lizards and also eat insects, such as locusts.

Mating displays involves loud beak clattering.

Nests are placed in reeds; 3 to 6 eggs are laid, which hatch within one month.

Age: 6 years
Clutch size: 3 - 6 years
Incubation: 25 to 30 days
Dr. Ganesh Dubey of Bhilai Zoo and Dr. M. Salam of Bokaro Zoo selected Spotted Deer for their sign.

**Spotted Deer**
*(Axis axis)*

**Majestic Appearance Deer**

Found in all forest areas of India. They have gracious appearance with spotted body. Only males have long branched horns. Antler are shed every year. Newly grown antler are covered with the skin called "velvet". Female gives birth to one young one at a time.

- **Life Span**: 15 - 20 years
- **Weight**: 45 - 85 Kgs.
- **Gestation Period**: 180 - 190 days
- **Breeding Season**: February, August
- **Diet**: Green Grass and Tree leaves.
Himalayan Black Bear
*Selenarctos thibetanus*

**Bear Me**

My home: Forested Hills in Pakistan, India and Nepal  
Weight: 180 Kg  
Life span: 30 years  
Gestation Period: 135 - 240 days

- I can run with the speed of 40 - 50 km/h  
- I have a poor eye sight and depend on my sense of smell  
- I am a very good climber and good digger. Honey is my favourite tit-bit.  
- I sleep in my den during winter and give birth to 1-3 cubs there.  
- I am able to stand straight on my hind legs especially when I want to attack a lizard.

**Status:**  
I have a few relatives left in the wild. People catch us for dancing, please help us by not paying to see those dances.

Dr. Arshad Toosey, Director  
and Uzma Khan, Education  
Officer of Lahore Zoo created  
a nice graphic on Himalayan  
Black Bear.
How Lahore Zoo set up their Programme

Lahore Zoo in Pakistan didn't have an education programme so they invited Ms. Theri Bailey, who currently resides in the United Arab Emirates but used to be Education Coordinator at Bristol Zoo. Director Arshad Toosie, Director, had his own excellent ideas and recommendations for the zoo and Theri Bailey utilised them, adding to them from her own experience and keeping in mind the culture difference in the place she was visiting.

Her Report, "Education at Lahore Zoo" is a very nice guide to starting an education programme. It is different from a Master Plan but contains many of the same elements as well as others.

In many ways it is good to engage the services of an objective consultant who can see the zoo from a different perspective than people who have been working there for years. Zoo personnel can provide input to the consultant but it may not be possible for the zoo employees to be objective.

It is particularly true in government service, where there are so many obstacles, that zoo directors and other officials have a hard time believing that change can come about in their institution. Contributing completely new ideas to an old institution is not easy. Sometimes we become narrow in our outlook and can't think of alternatives. Zoos may want an Education Officer employed full time, but the government may not have a post or a priority for that. In the Report, four different options are suggested for the Lahore Zoo. One of those surely has a chance of being implemented.

There are many good ideas and "reminders" in this Report, so the text has been reproduced in full in this Report.

Part 4 : How ? Techniques for Zoo Education

How Lahore Zoo set up an Education Programme
1.0 INTRODUCTION

2.0 EDUCATION OFFICER
  2.1 Employment
  2.2 Length of Contact
  2.3 Salary
  2.4 Training
  2.5 Personal qualities of Education Officer required:
  2.6 Job description (Terms of Reference)

3.0 EDUCATION CENTRE
  3.1 Conversion of the elephant house
  3.2 Porta-cabins
  3.3 Construction of education centre

4.0 EDUCATION PROGRAMME FOR SCHOOLS
  4.1 Questions for construction of programme
  4.2 Format for school’s visit

5.0 EQUIPMENT REQUIRED FOR EDUCATION PROGRAMME
  5.1 Computing facilities
    5.11 Hardware
    5.12 Software
    5.13 Accessories
  5.2 Animal biofacts
  5.3 Tame education animals
  5.4 Megaphone or amplification equipment
  5.5 Audio visual equipment
  5.6 Slides and video
  5.7 Lamination machine
  5.8 Photocopier

6.0 SIGNS
  6.1 Use of Islamic teaching in signs
  6.2 Directional signs
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APPENDICES
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Appendix 2 Minutes of the meeting held at Lahore Zoo on January 31st 1996 between staff at the Lahore Zoo and WWF-Pakistan
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1.0 INTRODUCTION

From the 23rd until the 31st of January I spent time in the Lahore Zoo and with the recently appointed Zoo Director, Dr. Arshid Toosy, in order to write a report on how to ensure the zoo visitor’s outing is an all-round educational experience. As approximately 2.3 million people visit the Lahore Zoo every year, and it is a major outing destination in the city, it is important that the educational opportunity to reach so many people is not missed.

Dr. Toosy has already put forward several important recommendations on educational matters in his report ‘Lahore Zoo - Past, present and future’ (Appendix 1) and my intention in this report is to support him in his vision and offer further advice. Many of the ideas are based on my experience in zoo education when I was the Education Coordinator at Bristol Zoo, UK, from 1989 to 1992. I still maintain strong links with Bristol Zoo and in particular with the Education Officers, Simon Garrett and Stephen Woollard. In addition, many of the ideas are not new or my own, but I hope that I have been able to pull together suggestions that are applicable to Lahore Zoo. I am strongly of the opinion that there is no point in reinventing the wheel and that if ideas work in other zoos around the world, that they can be adapted for use in Pakistan.

In my opinion, the Lahore Zoo is most definitely moving in the right direction and the management should be encouraged and commended on the improvements that are being made every day. The zoo staff are extremely committed to the animals entrusted to their care, they understand fully the role of good modern zoos and in particular want to realise the enormous educational potential of their zoo. In addition, the zoo management is fortunate to be supported by important local wildlife organisations, such as the Punjab Wildlife Service and the World Wide Fund for Nature Pakistan, who have already offered suggestions and assistance on educational matters (Appendix 2).

Finally, with some hard work and creative thinking on how to deliver messages in an entertaining and fun way, it can be ensured that people visiting the Lahore Zoo leave with a sense of respect, understanding, appreciation and wonder for the animals they have encountered.

2.0 EDUCATION OFFICER

In my opinion, the most important way of ensuring that the educational potential of the zoo is reached is by employing an Education Officer who would give full-time attention to the issue. Initially, one individual can fulfill this role, but as the job expands a second will be required.

2.1 Employment
At present there appears to be four options for the employment of the Education Officer:

1. Employed by the Lahore Zoo as a full-time employee
2. Seconded from the Punjab Wildlife Service
3. Seconded from World Wide Fund for Nature (WWF)-Pakistan
4. Voluntary Services Overseas (VSO) candidate

Which ever option is chosen, it is important that the Education Officer has to cope with as little bureaucracy as possible, that they have 100% commitment to the Lahore Zoo and that they have maximum support, particularly in the early stages of their employment.
2.2 Length of Contact
To ensure that the right person has been chosen, the Education Officer should be given a three month probationary period before being signed up for either a one year or three year contract, depending on funding.

2.3 Salary
The salary should be high enough to attract a competent individual. There is a suggestion that the salary of the Education Officer could be sponsored by a company.

2.4 Training
There are various avenues of training for the Education Officer:

- WWF- Pakistan Education Team
- Bristol Zoo Education Team (UK)
- International Centre for Conservation Education - ICCE (Appendix 3)

The Education Officer could be flown to the UK to attend the ICCE course and be trained at Bristol Zoo, if funding can be found, or else there is a possibility that an Education Officer from Bristol could come to Lahore. Staff at WWF-Pakistan have kindly offered support to the Education Officer.

2.5 Personal qualities/ qualifications of Education Officer required:
- Preferably a degree in zoology/ biology and/ or a teaching qualification. (Excellent candidates with other qualifications should not however be ruled out.)
- Enthusiasm and passion for animals
- Desire and ability to communicate information about animals to people
- Dynamic and energetic
- Ability to work well in a team
- Ability to relate well to people of all ages and backgrounds
- Creative

2.6 Job description (Terms of Reference)
The job description given below is in actual fact far too broad for the role of Education Officer and also covers some jobs normally done by a Public Relations Officer, Marketing Officer, a Volunteer’s Scheme Coordinator, and an Adoption’s Scheme Coordinator. It would be a unique individual who could fulfill all these jobs successfully, but until such time as the demand grows, or the funds are available for the employment of other members of staff, one individual will have to try their best to cover all, or most, of these areas.

All these jobs should be done in consultation with the Zoo Director:

- To ensure that visitors to Lahore Zoo have as educational an experience as possible
- To create and direct classroom based education programmes for all students (primary, secondary, college and university)
- To help train teachers in wildlife and conservation issues and in how to use the zoo most effectively with their class
- To create information for all signs and direct the artist when illustrating the text
- To create information for the trails and direct the artist when illustrating the text
- To create education packs for teachers and students and direct the artist when illustrating the text
- To give talks to the public especially at the animals’ feeding times
- To create promotional literature and a zoo guidebook

**Until such time as a Public Relations Officer is appointed**
- To write press releases and articles for newspapers and magazines
- To respond to negative coverage given by the media
- To coordinate with any member of the media (Journalist or TV Director) who wishes to cover aspects of the zoo

**Until such time as a Marketing Officer is appointed**
- To assist in procuring sponsorship from companies etc.
- To assist in the purchasing of fund raising equipment such as brass rubbing, face paints, bouncy castles etc.
- To create a special activities programme for festival days and holidays

**Until such time as a Volunteer Scheme Coordinator is appointed**
- To coordinate a zoo volunteer’s scheme

**Until such time as an Adoption Scheme Coordinator is appointed**
- To coordinate an animal adoptions scheme

### 3.0 EDUCATION CENTRE

At present discussions are underway for the creation of an education centre. The possibilities are as follows and depend on funds:

#### 3.1 Conversion of the elephant house
As suggested by Dr. Toosy, this is a large area which could be converted by either walling off the internal animal enclosures of the elephant and hippo or by putting in glass. In addition, a ceiling could be erected so that use can be made of the high roof space.

In this way, the downstairs area could be:
- a public auditorium where slide or video shows could be run at regular times though out the day and
- an activity centre where face painting and brass rubbing takes place

The upstairs area could be:
- the classrooms
- an Education Officer’s office.

However, it should be considered whether this conversion would:
- Disturb animals?
- Be too dark?
- Cause too much congestion?

#### 3.2 Porta-cabins
Possibly the cheapest and fastest form of education centre that can be erected.
3.3 Construction of education centre
If funds are available, then a purpose built education centre would be ideal. The centre needs to comprise the following:

- **Public auditorium** (Unless the elephant house can be converted.) The auditorium needs to seat at least 100
- **Classrooms.** Two classrooms that can accommodate 40 pupils each
- **Education Officer's Office.** Should be large enough to accommodate two people
- **Store room** for skins, slide library etc.
- **Animal room** to accommodate tame animals
- **Schools room.** Where bags etc. can be placed whilst the students are being taught in the class room
- **Library.** Specialising in books on animals and wildlife where teachers and other interested individuals can come and do some research.
- **Toilet block**

### 4.0 EDUCATION PROGRAMME FOR SCHOOLS

To build up a good education programme for schools will take time, but the education of the youth is an essential undertaking and in the end the rewards will be great.

#### 4.1 Questions for construction of programme
The most important visitors on which the Education Officer should focus their attention is the schools groups. Some questions relating to the construction of a school's programme is as follows:

- How many school children come to the zoo every year?
- What is the average size of a school group?
- What is their average age?
- Which time of the year is most popular?
- Why are they coming to the zoo? Are they trying to cover aspects of the curriculum or is it a day out?
- Is there anything in the schools' curriculum about wildlife and conservation?
- Are there any particular teachers that would be keen to offer advice on producing an education programme?
- Is the education authority supportive of schools going to the zoo and will they encourage this activity?
- Are other wildlife groups such as WWF and the Punjab Wildlife Service supportive of schools going to the zoo and will they encourage this activity?

#### 4.2 Format for school's visit
At Bristol Zoo, the format for a school's visit to the zoo is as follows:

1. Education Officer designs programme and prepares education pack containing teachers notes and students worksheets (examples of these packs are with Dr. Toosy)
2. Education Officer distributes schools programme sheet to all government and private schools in the area (Appendix 4).
3. Teacher selects programme of interest e.g. the rainforest or endangered animals.
4. Teacher telephones the Education Officer to book a date and time for their session. Preferably they visit the Education Officer to discuss the needs of their class and to buy an education pack.

5. Teacher posts booking form to the zoo along with payment for education session (Appendix 5).

6. Using the education pack, the class usually does some preparatory work with teacher at school before coming to the zoo.

7. Teacher photocopies any necessary student worksheets from the education pack and takes them with them on their trip to the zoo.

8. Students arrive at zoo and usually go straight to the education centre where they are greeted by the Education Officer and taken to the classroom.

9. The Education Officer conducts an education session on the topic requested usually using either slides or video, props, animal biofacts such as skins and bones and tame education animals. Drama is often used as a means of getting across a message.

10. After the education session the students go out into the zoo. They are either conducted on a guided tour by the Education Officer or a volunteer or they find their own way around and complete their worksheets.

11. Back at school the teacher uses the students experience from the zoo and the suggestions from the education pack to conduct some school work.

5.0 EQUIPMENT REQUIRED FOR EDUCATION PROGRAMME

5.1 Computing facilities
Computing facilities are essential for the creation of educational material and access to support through the internet. A computer expert should be consulted on the hardware and software required, but a guide is as follows:

5.11 Hardware
• Computer powerful enough to run the software listed below
• Monitor
• UPS
• Lazer printer
• Scanner

5.12 Software
• Microsoft Office i.e. Word, Excel, Access, Powerpoint
• Desk top publishing software e.g. Pagemaker
• Scanning software e.g. Image-in
• Antivirus software e.g. Dr. Solomon’s

5.13 Accessories
• Fax modem
• Internet and e-mail access

5.2 Animal biofacts
Skins and bones are very useful for teaching purposes and as the students can learn through all their senses, especially through that of touch. Dr. Toosy has several biofacts stored.

5.3 Tame education animals
There is nothing more enjoyable for students than to touch a real animal. Certain animals, such as a python, can be tamed but proper housing and care of the animals must be guaranteed.
5.4 Megaphone or amplification equipment
For the conducting of feeding time talks.

5.5 Audio visual equipment
Audio visual material such as a slide projector, video projector and screen need to be available for use by the Education Officer in the classroom. A full audio visual suit needs to be installed in the auditorium.

5.6 Slides and video
A good library of slides and videos needs to be made. A camera should be available to the Education Officer to take necessary photographs.

5.7 Lamination machine
For the creation of temporary signs

5.8 Photocopier

6.0 SIGNS (Appendix 6)

6.1 Use of Islamic teaching in signs
As the majority of the visitors to the Lahore Zoo are Muslim and respect Islamic teachings, appropriate verses and sayings on the animals could be used. One such verse could be selected as the zoo’s motto and even be written up at the entrance to the zoo. Examples of such teachings are as follows:

‘Allah has created every animal from water; of them there are some that creep on their bellies, some that walk on two legs; and some that walk on all four.’ (Qur’an 24: 45)

‘There is not an animal on earth, nor a bird that flies on its wings, but they are communities like you.’ (Qur’an 6:38)

An attempt should be made to find out whether specific animals, such as lions etc., are referred to in Islamic writings so that this story can be written up near the animal. Sally Walker in her article Conservation Education in Cultural Context (Appendix 7), mentions a man called Dr. Ramaswamy from Bangalore who has researched the Qur’an and extracted all quotations favourable to animals. They could be contacted on this subject.

6.2 Directional signs
Directional signs have recently been put up around the zoo which is greatly beneficial. At present these signs do not have illustrations of animals which should be considered in the future to assist visitors who are illiterate.

6.3 Zoo map
A zoo map has already been created. This map should be updated, if necessary, and placed at strategic places, particularly at the two entrances. If the map is redesigned it should be as pictorial as possible.
6.4 Instructional signs

6.4.1 Against teasing the animals:
Some visitors harass and tease the animals, so to discourage this behaviour some imaginative and carefully worded signs need to be put up, particularly near the primates.

- A successful sign has been produced by Sally Walker and her Outreach team working in Indian zoos. This asks people to imagine themselves in the animals situation (Appendix 6). This sign could be adapted for use in Pakistan.
- See comments on using teachings from Islamic writings e.g.

'Whoever is kind to the creatures of God, is kind to himself.'

'A good deed done to a beast is as good as doing good to a human being; while an act of cruelty to a beast is as bad as an act of cruelty to a human being' (Misilkat al Masabih)

6.4.2 Against feeding the animals incorrectly:
Visitors often feed the animals inappropriate items which can be detrimental to their health. Dr. Toosy plans to sell appropriate food items to the visitors to feed the animals. Signs should be put up explaining why feeding the wrong food is a problem.

- Pictures of the dead giraffe and plastic bags found in its stomach could be put up at the entrance to the zoo and at the stalls selling animal food to graphically illustrate this point.

6.5 Temporary signs
The Education Officer needs to be constantly aware of happenings in the zoo, such as the birth of an animal, which may require a temporary sign being put up. The creation of such signs on a computer which are then laminated are ideal for this purpose.

6.6 Basic animal cage signs (Appendix 8)
Most of the animal cages in the Lahore Zoo already have basic signs, but they could be redesigned to hold the following basic information:
- Illustration
- Name in Urdu, English and Latin
- Information on status (i.e. whether endangered and why), breeding, feeding, population size, interesting behaviour, special information on individual
- Map of where found i.e. range

6.7 Interactive animal cage signs
Colourful and fun interactive boards can be created to help the visitors to learn more about animals. For example, at the Bristol Zoo there is a game which allows visitors to find out that different birds have different shaped beaks depending on what they eat. Each bird matches with a different food item and the visitors discover the link by following the line that joins them.

6.8 Signing animals outside cages in zoo grounds
There are several animals that are common in the grounds of the zoo that are not in cages e.g., kites, squirrels and ravens.

- Signs could be put up near benches and eating spots so that people can identify these animals while resting.
- A sign on kites is necessary at the top of the hill, in the centre of the zoo, as numerous kites nest and rest there.
6.9 Signing of trees
The zoo is situated in beautiful grounds and amongst mature trees. It would therefore be good to label the most important and interesting trees with the following information:

- Name in Urdu, English and Latin
- Map of where found i.e. range
- Information on status (i.e. Whether endangered and why)
- Information on benefits to humans e.g. medicinal

6.10 Creation of signs
Signing the zoo will be an on-going and long term project requiring the attention of the Education Officer and an artist/designer. The artist/designer could be employed as follows:

- Full-time employee of the zoo
- From a design company
- From the art college

In my opinion, it is probably more economical to commission a good design company as they will already have all the expertise and equipment required. Art college students could be used for specific short term projects.

7.0 TRAILS

7.1 Zoo Olympics Trail
A fun and interactive permanent trail has been created by several zoos around the world called the Zoo Olympics Trail. In these trails, visitors are asked to compete with the animals which helps them to appreciate and respect that many animals are better than humans at certain things. Visitors are given a booklet at the entrance to the zoo in which they record their results as they move from one station to another.

At Bristol Zoo the trail consists of the following activities (Appendix 9) which could be adapted for the Lahore Zoo:

1. Are you a big foot?
2. What’s your speed limit?
3. Can you outdo a kangaroo?
4. How long is your tongue?
5. Do you measure up?
6. Are you a heavy weight?
7. Can you pass the breath test?
8. How keen in your eyesight?
9. Fancy a flutter?
10. Are you a swinger?

Each of these activities requires certain equipment, such as weighing scales and the creation of colourful sign boards. Perhaps companies could sponsor different stations e.g. An optician or spectacles manufacturer might want to sponsor the station on ‘How keen is your eyesight?’ and a shoe manufacturer might want to sponsor the station ‘Are you a big foot?’
7.2 Walking trail
Amberleen Latif has suggested that a walking trail could be created around the zoo which would especially encourage women to use the zoo for exercise on the week-day mornings.

8.0 VOLUNTEERS

Many zoos around the world have a Volunteer’s Scheme whereby keen members of the public volunteer their time free to assist the zoo. Most of these volunteers are involved in education and fund raising activities and can supervise the following:

- Touch tables (where the visitors can touch skins and bones etc. and receive an explanation.)
- Face painting stalls
- Brass rubbing plates
- Badge making machines
- Feeding time talks
- Guided tours
- Zoo Olympics trails
- Animal suits
- Children’s play area
- Bouncy castles.

Volunteers can be a great blessing to the zoo, but they can also be a burden unless they are well managed. Most zoos either manage their volunteers through their Education Officer or employ a full-time Volunteer Coordinator who will work out a timetable etc. Efforts have to be made to train the volunteers properly and monitor their interaction with the public. In addition, special perks should be given to the volunteers e.g. Free meals and even a uniform so that they feel special and appreciated. A uniform also helps them to be identified by the public.

9.0 AURAL PRESENTATIONS
Aural presentations are essential as the majority of visitors to the Lahore Zoo are illiterate.

9.1 Feeding time talks
At the Lahore Zoo there are various animals such as the bears, big cats, and elephant that visitors enjoy watching being fed, particularly as some excellent environmental enrichment ideas, such as honey on the logs for the bears, are being done. To make maximum educational advantage of these times the following is necessary:

- Establish a regular and staggered feeding time for these animals e.g. Big cats at 10.00am, bears at 11.00am, elephant at 12.00pm etc.
- Advertise the feeding times at the gates of the zoo and also over the tannoy system.
- Get the Education Officer, or a confident and competent keeper to deliver a speech about the animal and answer any questions from the crowd.

9.2 Audio visual presentations
As soon as a public auditorium is designated, audio visual presentations can be given to the visitors. These presentation could be done either through slides or video.

- Perhaps an important topic for such a presentation is the role of zoos and why they’re important.
Such a presentation can either be copied from another zoo and translated into Urdu, or a unique one can be commissioned.

The presentation should not last more than 20 minutes.

9.3 Touch screens and head sets
In some zoos, touch screens/pads and head sets have been installed so that visitors can receive information about the animal they're observing. Although this is potentially a source of revenue, consideration has to be taken that these items require constant maintenance.

10.0 GENERAL ZOO FACILITIES

10.1 Entrance to Zoo
The educational experience should start the moment the visitor enters the zoo, if not before! At present Dr. Toosy is preparing some boards for display at the entrance that give information on new births, and how money generated from the visitors is being spent. At the entrance to the zoo there should also be information on feeding time talks, the Zoo Olympics trail, audio visual presentations etc.

10.2 Zoo Guide
A zoo guide needs to be created by the Education Officer and be sold at the zoo gate and in the shop. If sponsorship can be found then the guide can be given away free of charge.

10.3 Zoo Shop
The Lahore Zoo has a shop, but more animal related items could be sold. Discussions have been held with WWF about the possibility of them having an outlet for their products in the zoo (Appendix 2). Dr. Toosy has plans to have a shop near the zoo entrance and exit so that visitors are forced to pass through it and hopefully spend money. In addition, it could be considered that it would be useful to have the shop available to people who might want to buy a gift but not necessarily enter the zoo.

10.4 Rubbish Bins
There is usually a problem of litter in zoos and the public should be encouraged not to litter. Rubbish bins have already been put up around the zoo in the shape of animals, but perhaps the sign "Please feed me!" could be placed on the bins to encourage more people to put litter in the right place.

10.5 Children's Play Area
Signs could be put up in the children's play area to encourage them to do such activities as "Slide like a snake", "Swing like a gibbon" etc.

10.6 Zoo cafeteria/eating area
Using the animal theme, the zoo cafeteria/eating area could be given a name like the 'Chinkara Cafe' and the menu could be designed with names such as 'Jumbo burger' etc. Information on how animals eat could also be written on the menu or be put up in sign boards around the sitting area.

10.7 Animal costumes
Barney the dinosaur and Mickey Mouse proved very popular over Eid, but these costumed individuals could be made more educational if they were endangered species with a particular message. Costumes could be made up at a tailors.
11.0 COVERING THE COSTS OF AN EDUCATION PROGRAMME

Reaching the educational potential of the zoo is a major commitment in terms of man power, time and, in particular, financial resources. Every effort should therefore be made to raise money to cover the zoo's education programme through fund raising activities. Such activities could be as follows:

11.1 Animal adoption scheme (Appendix 10)
Many zoos are now raising a significant amount of money through their adoption schemes. In such schemes, money is donated for the upkeep of specific animals and in return the name of the donor is written up on a plaque near the cage and they receive an information pack about the animal adopted. The Education Officer would need to create and send out information packs.

11.2 Sponsorship Schemes
Companies are often keen to sponsor events and even animals enclosures, as they are aware of the good advertising opportunity. Lahore Zoo is already doing extremely well in this regard by getting sponsorship from Konica and Gillett for its Eid programme and entry ticket printing.

11.3 Membership scheme
A membership scheme provides an ideal opportunity for individuals who are extremely interested in animals and who want to support the zoo to get involved. Such a scheme does however require thought and staffing commitment, as members expect to receive special treatment if they pay a yearly subscription to the zoo. At present the Bristol Zoo has three types of membership which increase in price from 1-3. All include free admission to the zoo for a year plus the receipt of the zoo magazine.

1. Basic membership
2. Membership plus adoption
3. Membership plus conservation support

11.4 Face-painting
As most children enjoy having their faces painted, this activity can raise a lot of revenue. This activity also provides an educational opportunity because the child has the one-to-one attention of the face-painter who gives them information about the animal they have chosen to become.

At present there is a problem in starting this activity as good face paints have not been located in Lahore. Amberen Latif is looking into the purchase or creation of such paints. It is possible to import these paints from Europe, but they are expensive.

11.5 Brass rubbing
As suggested by Dr. Toosy, brass rubbing images of animals is also popular with children as they can leave the zoo with a momento. Initially, there will be an outlay of funds to create or purchase the brass plates, but the money will probably be quickly recouped.

11.6 Zoo train
Visitors like to ride zoo trains. Although the purchase of such a motorized train would be expensive, the cost can probably be covered by companies sponsoring the engine and the carriages in return for their names being written on the sides. This is an important advertising opportunity for companies and should be sold as such.
11.7 Bouncy castle
As experienced at Eid, children love to bounce! Several thousand rupees were expended every
day for the rent of the bouncy castles so it may be more economical in the long term to
purchase, or commission the construction of a zoo bouncy castle. To be in keeping with the
zoo, it should preferably be in the shape of an animal e.g. a giraffe.

11.8 Special events e.g., Fashion Show
As suggested by Ambereen Latif, special fund raising events could be created. One such idea
is a fashion show where the garments could be made of animal print material.

11.9 Charging for education sessions and education packs
Once a school’s programme is up and running, it should be considered that schools should be
charged if they use the education centre and the expertise of the Education Officer. In addition,
education packs and other literature produced by the Education Officer should be sold.
Lahore Zoo's booklet "A Visit to Lahore Zoo" is a charming and effective student notebook. Students enjoy filling out the attractive pages. A matching Teacher's Guide is also produced, illustrated on the following page.

A Visit to Lahore Zoo

Name: ____________________
Class: ____________________
School: ____________________
Date: ____________________

A few important rules

① Don’t tease the animals
② Don’t feed the animals
③ Don’t drop litter
④ Don’t make a noise
⑤ Do observe the animals carefully
⑥ Do ask questions
⑦ Do use the rubbish bins

Asian Cheetah - extinct Pakistan because people didn't obey the rules

Sorting out Animals

Animals with hard scales on their body are REPTILES, if feathers are covering then they are BIRDS and when hair or fur covers the body then called as MAMMALS. Can you give at least five examples of REPTILES, BIRDS, and MAMMALS?

Which group do we belong to?

Special Features

Match the animals to its feature

Camel ♦ ♦ Mane

Elephant ♦ ♦ Long arms to swing

Male Lion ♦ ♦ Trunk

Giraffe ♦ ♦ Long face to reach the grass

Rhino ♦ ♦ Hump

Hippo ♦ ♦ Spots for camouflage

Gibbon ♦ ♦ Stripes on the skin

Zebra ♦ ♦ Spends day in water

Leopard ♦ ♦ Long neck to reach tree
Do You Know

1. There are 40,000 muscles in an elephant's trunk.
2. Only 69 white tigers are left in the world.
3. Giraffe of Lahore Zoo died in 1996 by eating a lot of plastic bags.
4. Stripes on Zebra's skin are like our thumb prints meaning they are different for each.
5. Giraffe's neck has 7 bones as any other mammals for example human, mouse etc but these bones are very elongated in Giraffe.
6. There are only 8,000 Bengal Tigers left in the world.
7. Camels don't sweat until their temperature is 105 Fahrenheit & they can live without drinking for 4 months.
8. Horns are made of the same material that makes our hair and nails.
9. Australian Pelican is the largest flying bird in Australia.
10. African Elephant is the largest living animal in the world.

Can you guess who I am?

I am the largest animal of Lahore Zoo
I am the largest bird and cannot fly
I am a colorful bird with a long, beautiful tail
I am a huge fat animal, have horns on my nose
I walk slowly and protect myself with hard shell
I have no legs and there is poison in my special teeth called fangs
People call me the king of jungle
I store my food in the hump.

Lahore Zoo's Fiercest Animal

What do we call this animal? ..................
What is her name? ..................
Can you identify these parts of her body?

Part 4: How Techniques for Zoo Education

A coordinated Teacher's Guide -- "A visit to Lahore Zoo" provides details for all the subjects in the notebook.
Birds belong to the group of animals that have feathers covering their bodies and possess very light bones which are helpful in their flight. Apart from the feathers and the light bones, the breastbone of all the flying birds have "Y" shaped lower portion called a KEEL. It is required to support the powerful muscles needed for flight. Conversely, the flightless birds have a bowl "U" shaped breastbone that cannot support the muscles required for the flight.

Flightless birds are also called "living fossils" because they have survived unchanged for many thousands of years. These birds are unable to fly because of their very huge & heavy bodies and reduced wings. Such birds have powerful legs that enable them to run very fast.

Ostrich is a flightless bird of Africa. It can weigh up to 150 kg and reach the height of 2.5 meters. It can run with a speed of 70 km per hour. To protect its bare legs from the heat the bird must spread out its wings. The ostriches have a very interesting duty roster for incubating the eggs. Male ostriches sit on the nest in the ground then the dominant hen called the major hen lays about 10 eggs and then a few minor hens lay 10-30 eggs in the same nest. Later the major hen sits on the selected eggs during the daytime and male ostrich sits on eggs at night. These duties are divided according to their colours, the female is grey she appears to be a mound of sand in the daytime, the male is black, making him invisible at night while incubating the eggs. An ostrich egg is equivalent to two dozen hen eggs and it takes two hours to hard boil it.

Cassowary is an Australian flightless bird, it stands 1.5 - 2 meters high and is recognizable by its bony crown called the Casque. This casque is helpful in penetrating the thick forest where it lives. The female is larger than a male and is dominant. It is a solitary bird and pairs up during the breeding season which lasts from June to October. The nest is made by the male in which the female lays 3 - 4 green eggs. She takes no part in incubation or caring of the chicks. Eggs hatch after 47 - 54 days and the chicks stay with their father for about 9 months. The cassowary is the only large fruit-eating bird in southern Australia. This bird is under a threat due to loss of its habitat. With its extinction there may be great loss to all the plants the seeds of which are spread by passing intact through the cassowary digestive system. Emu is endemic to Australia and is found in central and eastern parts, large flocks of emus undertake regular journeys of 250-300 miles southward at the onset of winter. It has a height of 1.6 to 2 meters and weighs about 30-45 kg. Female emus are dominant over their male counterparts. They build the nest on the ground and lay 5-15 blue green eggs. The male incubates the eggs, that hatch after 53-61 days, and takes care of the chicks for 6-7 months. This bird was considered as an agricultural pest and was killed by farmers. It is now protected. Of all the flightless birds the emu wings are the shortest relative to his body size. Scientists have discovered that shiny objects attract the attention of this inquisitive bird.

Rhea is another flightless bird. It is endemic to South America. It possesses brown plumage with white underparts. During the breeding season a male gathers up to 5 females. Each female lays 15 - 20 eggs in a nest made by the male then moves to another male, mates with it and again lays eggs, this is done repeatedly. Males incubate the eggs for 40 days and protect the chicks by allowing them to hide under their wings. It is a gregarious bird and weighs 20 - 25 kg.

Kiwi is flightless bird of New Zealand. It is no larger than a hen. It is a nocturnal bird, possesses very tiny eyes, thus is almost blind. It remains hidden in the forest during the daytime and searches for food at night. It was named after the cries of kīwi it utters at night. Females lay one white coloured egg at one time in a hollow lined with moss and other foliage. There are only three species of kiwis surviving; common Brown Kiwi, Greater Spotted Kiwi and the Little Spotted Kiwi.
Unusual teeth No other animal has teeth like an elephant. They are different in their size and shape and in the way they grow. The tusks grow continuously and do not normally wear out. The side teeth, however, which grind up the elephant’s rough food, do wear out and are replaced six times in the elephant’s lifetime. Humans like most mammals have two sets of teeth in the lifetime. By the time a person stops growing, at about 20 years of age, he or she will have a complete second set of teeth. A 20 year old elephant, on the other hand, will already be well into its fourth set of teeth. An elephant starts out with a set of four side teeth, one in each corner of the upper and lower jaws. As the elephant grows, the teeth move forward and a new set of slightly bigger teeth emerges. Unlike, the teeth of humans, which erupt from the jaw in their final place, elephant teeth erupt from the back and move along the jaw toward the front. Each tooth gets more and more worn as it moves forward, but by the time the last bit drop out, it has been completely replaced by the tooth behind it.

When an elephant dies, the size of its teeth, and amount of wear on them, enable scientist to work out how long it lived.

Family herds are not led by a massive bull but by an old grand mother known as the Matriarch. She is the dominant female, and the herd she is in charge of will probably consist of her sisters, daughters, female cousins, and their young offsprings. As leader of the family, the matriarch is responsible for the herd’s safety and for providing enough food and water. She therefore has to decide how far and in which direction they should go in their constant search for new pastures. Female elephants in the same herd often have babies at about the same time and look after their young together.

Communication Low frequency elephant calls (those that are too low for us to hear) may be heard by other elephants at distances of more than 5 miles. Elephants also communicate with each other by their trunks through the important sense of touch. When elephants meet, they go through an elaborate greeting ceremony. They entwine their trunks, sniff each other’s face and body, and appear to sample breath and saliva. This allows an exchange of touch, smell, and taste as well as sound. A young elephant needs to touch, or be touched, by its mother (or another close relative) every few seconds for reassurance. Sometimes it will take hold of her tail.

Elephants have a strange fascination with their dead. When one dies, others will sometimes cover the body with branches, grass, and soil. If a herd comes across a long dead elephant, the members will feel and sniff the remains, pick up and scatter bones, draw the tusks from the skull, and sometimes smash them.

All animals – including the human, need salt and will go to great lengths to get enough. If they find something that satisfies their craving for salt, they eat it and remember where they found it, for future use.

Elephants spend about 18-20 hours feeding! An adult elephant in the wild will eat 100-200 kg of vegetation per day. 30-60 percent of the diet is grass, they eat less in dry seasons and more in the wet.

Lahore Zoo’s ‘Suzi’ was bought from Holland in 1988 when she was 5 years of age, this makes her 16 years old. She is very friendly and gives rides not only to the kids but also to grown ups. Suzi is an African species and belongs to the sub-species Loxodonta africana cyclotis, she is a forest elephant. She is the largest animal of Lahore Zoo and is the centre of everybody’s attention. Suzi is very fond of sugarcanes and apples.
The fossil record reveals that the earth has been inhabited by many different types of elephants. At present there are only two species: the Asian elephant, *Elephas maximus* and the African elephant, *Loxodonta africana*. There are two subspecies of African elephant, the so-called Savannah elephant, *Loxodonta africana africana*, and the smaller Forest Elephant, *Loxodonta africana cyclotis*. The Savannah Elephant is the largest living land mammal and a big bull may weigh as much as 13,000 pounds or 6 tonnes. Such a bull would have a shoulder height of about 13 feet or 4 meters. There are thousands and thousands of different plants and animals on earth. To avoid confusion, scientists use a special system of naming each kind or species. This scientific system of naming species is used a combination of two names, rather like a surname and a first name. The surname is referred to as the 'Species' and the first name is referred to as the 'Genus'. So all African kinds of elephants share the same genus: *Loxodonta*. The species is the same also: *africana*. But the sub-species' name is different. Suzie’s sub-species name is *cyclotis*. These scientific names sound strange but they actually all have meanings and are usually derived from Latin or ancient Greek. *Loxodonta* means 'long tusked' and *cyclotis* means 'ringed ears'.

**Trunk** An elephant's trunk is a fusion of the tip of nose and the upper lip. Although it has no bones inside it like a person's arm, it has thousands of small muscles that enable it to move in any direction, shorten and elongate. This makes it a very versatile 'tool' for the elephant to use in its daily life. Some important uses are: The trunk is useful for plucking grass and tree leaves to eat; sucking up water to drink. The elephant doesn't actually drink through its trunk it is like a straw - it draws up water into the trunk, then raises it and allows the water to run into the mouth. Squirting water or mud over the body to cool it down.

**Ear** An African elephant's ear is actually far larger than it needs to be for the simple purpose of hearing. The reason for this is that it has other important uses: It helps keep the elephant cool. Acting as both a fan and a heat radiator - there is a network of large veins on the back of the ear that carry blood to the surface of the skin where it is cooled by a combination of the evaporation of sweat and the fanning of air as the ear is gently flapped forwards and backwards; It also has an important signal function and is used to reinforce threats and other gestures like the shaking of the head.

**Tip of the Trunk** If you look closely at the tip of an African elephant's trunk, you will see that it has two mobile points at the top and bottom that act like fingers.

**Foot** An elephant's foot has to support a very large body and to do that it needs to be very big. Having very big feet would make the animal clumsy, it has evolved in a way to be quite compact when lifted off the ground. It spreads by carrying the full weight of the elephant. It has a large fibrous pad underneath it - rather like a big sponge rubber ball. There are cracks and ridges on the soles of feet which give elephants a good grip. When people see elephants in the forest for the first time, they are surprised, at how silently they can appear and disappear. Actually they are so silent and there is little sound because a built-in shock absorber cushions the impact of the foot on the ground.

The pillar like straight legs are also designed to support a massive body. When the elephant stands at rest, the bones in each leg stack one above the other to form a sturdy pillar. This is how an elephant can relax, and even fall asleep, while standing up.
Lahore Zoo is situated in the capital city of Punjab, Lahore, was established in 1872. Today it has 839 animal, of 120 different local and exotic species. Lahore Zoo attracts 2.4 million visitors each year and it is a self financing institution which is run without any funds from the government. Lahore Zoo has embarked upon different projects to involve general public in animal related activities; Animal Adoption Scheme and Zoo Education Project are two such examples.

Why to have Zoos?

**Breeding of Endangered Species**

Zoos play an important role in the conservation of rare species as their survival in the wild is not possible due to loss of habitat or over-hunting, so their perpetuation would largely depend on the captive breeding in the long run. White tiger is one of such forms; there are only 89 left in the zoos of the world today; Lahore Zoo has 5, and 4 were born here. As such zoos all over the world are helping in the preservation of species that would have been extinct years ago, for example Giant Panda, Black Rhino, Oryx, Addax and Pere David's Deer.

**Re-introduction in the wild**

Zoos play an important role in selecting, breeding and then reintroducing animals' offsprings into the wild.

**Educational aspects**

Zoos provide opportunities to the visitors to observe animals which can't be seen by them so closely in their natural environment. They have a chance to observe their behaviour and learn about biodiversity.

**Research Facilities**

Zoos provide opportunity to the students to research the physiological and behavioural aspects of wild animals in captivity. Such a study leads to help and care of wild animals in their natural environment.

**Love for Nature**

One of the main objectives of zoos is to develop a positive attitude of the people towards the animals which is only possible if they get to know them and love them. This approach ultimately leads to conservation of precious species.

**ZOO EDUCATION PROJECT**

Zoo Education Project is funded by Beaconhouse School System, and has been launched in collaboration with World Wide Fund for Nature - Pakistan. The project aims at instilling the concepts of biodiversity and ecological balance in school children. Since project initiated in October 1998 more than 1000 students from Lahore and adjoining areas have been benefited from this. Lahore Zoo plans to construct an Education Centre in its premises; foundation stone has already been laid.

In this education centre there will be a library for the students, wildlife movies will be shown and lectures about animal behaviour, biology and ecology will be delivered.

**Guidelines for the teachers**

- This resource book contains all the necessary information, you may require for answering the questions of the students. Please ask students to open the respective page of the booklet given to the student.
- Encourage the students to observe animals carefully before answering the questions.
- Don't let students tease the animals or to litter.
- Ask for a feedback after the visit in the class.

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**MUTE SWAN - Cygnus olor**

- Eats vegetable matter, fish, tadpoles, crustaceans
- Habitat: lakes & large ponds
- Range: Denmark, central and southern Sweden, northern Germany, Poland, Romania, central Russia, Central and eastern Asia.
Teacher's Guide

Central Zoo Teacher's Guide to Conservation Education lists many good teaching techniques using the zoo. Some examples follow.
Section III
How to Plan a Zoo Excursion

The Conservation Education (CE) Section is committed to helping you (teachers, parents or Eco-club leaders) arrange, plan and conduct activities which mesh with your specific conservation education needs. All programs (except the Zoo Outreach Program) currently offered by the CE Section are based at the Central Zoo. This necessitates bringing interested participants (students, children, Eco-club members, etc.) to the Central Zoo for a visit in order to take full advantage of the CE curricula. We call such an educational zoo visit a Zoo Excursion.

The first step in planning a Zoo Excursion is to become familiar with the Central Zoo’s CE curricula and to decide which activities and programs are of interest to your group and fit your conservation education objectives. A descriptive list of all activities and programs offered by the CE Section is provided later in this section. After deciding upon the activities and programs in which you want to participate, call the CE Section of the Central Zoo to schedule a date and to arrange CE facilitators to help with your Zoo Excursion. You should contact the CE Section one week prior to your Zoo Excursion to allow sufficient time for the CE Section to make all of the appropriate arrangements. The CE Section contact information is provided below:

Conservation Education Section
KMTNC/Central Zoo
Jawlakhel, Lalitpur

Zoo Hours: Summer 10 am – 5 pm, Winter 10 am – 4 pm
Phone Numbers: 528323, 538324, 532094
Fax Number: 521467
E-mail Address: czoo@wlink.com.np

The Zoo Excursion will be more rewarding for your students and less hectic to you, the organiser, if you bring along adequate supervision. Appropriate adult supervision helps channel the excitement that often accompanies a trip to the zoo and creates an effective discovery learning environment. You, as the Zoo Excursion organiser, are responsible for arranging adult supervision of your group. For groups of pre-school children we

Part 4 : How to Techniques for Zoo Education
observing zoo animal appearance, behaviour and adaptations. CE facilitators may also guide the students towards discovering the answers themselves if necessary. An answer sheet is also available. The Zoo Treasure Walk Worksheet is provided in both Nepali and English. Suggested age range: 9 – 14.

**Animal Activity Book**

The Animal Activity Book is a guided discovery activity developed by the Central Zoo. The Animal Activity Book contains animal colouring activities, animal puzzles and questions. Interested students can complete the activity book by observing zoo animal appearance, behaviour and adaptations. For example, students have to look for particular animals in the zoo in order to be able to colour them accurately. Both Nepali and English versions of the Animal Activity Book are available. Suggested age range: 6 – 10.

**Zoo Quiz**

The CE Section also provides student evaluation tools in the form of a Zoo Quiz. The Zoo Quiz serves as an excellent follow-up assessment activity to a Zoo Excursion. The Zoo Quiz contains questions about the zoo’s animal collection. Zoo Quiz answers may be found by reading the information signs posted at each animal enclosure as well as through direct observation of the animals. The Zoo Quiz is offered in both Nepali and English and may be taken either in the Central Zoo or in your own classrooms. Suggested age range: 12 and up.

**Conservation Education Games**

The CE Section has an extensive collection of Conservation Education Games, which focus on a wide range of environmental issues. Teachers may conduct these games for their students in the classroom or at the Central Zoo with the help of CE facilitators. A brief list (title, theme, school level) of all Conservation Education Games currently offered is shown in Appendix 2. More detailed descriptions include specific game objectives, step-by-step procedures, number of participants, age range and a list of required materials. The detailed Conservation Education Game descriptions are available upon request. The Conservation Education Games are available in both Nepali and English. Suggested age range: Conservation Education Game specific.

**Zoo Patrol Volunteer Program**

The Zoo Patrol Volunteer Program is designed to increase environmental awareness and to generate environmental activism in area school children as well as provide basic wildlife
education to the zoo public. Student volunteers will help the Central Zoo by participating in animal management and education activities. After a short orientation session, these Zoo Patrol Volunteers (ZPVs) will educate the zoo public about respect for zoo animals (Zoo Codes of Conduct) as well as general wildlife knowledge (with the help of Animal Fact Sheets). Involvement in these activities will provide the students with the unique opportunity to identify with the animals closely and to consider their welfare and conservation. Details about the Zoo Patrol Volunteer Program can be found in Appendix 3. Suggested age range: 12 and up.

Zoo Outreach Program
CE Section facilitators can also travel to classrooms, schools and Eco-clubs conducting Zoo Outreach Programs with a variety of wildlife themes and conservation activities. For more information about the Zoo Outreach Program call the CE Section. Suggested age range: all ages.
behaviours. Our zookeeper staff is very knowledgeable and will be able to answer most of your questions about the zoo and its animals. Particularly interesting zookeepers to talk to are the Central Zoo's elephant keepers who can describe the training procedures and many duties of our zoo's working elephant. Though the Keeper Talks are conducted primarily in Nepali, an English translator can also be provided. Suggested age range: all ages.

**Cultural Storytelling**

The Central Zoo can arrange a Cultural Storytelling session for you and your group. Our CE storytellers have an extensive repertoire of Nepali stories, myths and folktales each with a focus on animals. After listening to an animal-theme story, Cultural Storytelling participants will have an opportunity to write and illustrate their own stories based on the one previously told by the CE storyteller. The completed storybooks will be kept at the zoo to be read by other students. Some storybooks may also be exchanged with students from other countries to teach them about our Nepali stories as well as learning about new cultures. Cultural Storytelling is conducted in both Nepali and English. Suggested age range: 8 – 14.

**Animal Fact Sheets**

The CE Section has developed Animal Fact Sheets for all of the animal species in the Central Zoo's collection. Each Animal Fact Sheet contains a physical description of each animal in the zoo plus detailed information concerning geographic distribution and habitat, diet, reproductive habits, special behaviour and adaptations and endangered status. These Animal Fact Sheets represent a versatile CE resource from which a multitude of activities may be created. Teachers, parents, Eco-club leaders and students may want to conduct a self-guided zoo tour using these Animal Fact Sheets. These Animal Fact Sheets may also grouped into specific themes for school research purposes. Possible themes might include, for example, endangered species, mammals of the Himalayan forest, wetland birds or nocturnal animals. The Animal Fact Sheets are provided in both Nepali and English. Suggested age range: all ages.

**Zoo Treasure Walk**

The Zoo Treasure Walk is a guided discovery activity developed by the Central Zoo. The CE Section supplies each student with a Zoo Treasure Walk Worksheet that contains questions about the zoo's animals. Students can find the worksheet answers by directly
Section III
How to Plan a Zoo Excursion

recommend 1 adult per 6 children. For groups of primary school children we recommend 1 adult per 10 children.

All activities and programs offered by the Central Zoo’s CE Section are listed below. Please note that all of our activities and programs are in a continual process of change and improvement.

Wildlife Resource Library
The Central Zoo has a small library of wildlife books and nature videos spanning a variety of ecological themes. These books and videos are available for public use at the Central Zoo. Interested individuals or groups may arrange time to use our collection of wildlife books for school reports or other research activities. Time may also be scheduled to watch our many wildlife videos on the audio-visual equipment in the zoo’s Visitors Centre. A list of available video titles and descriptions is included in Appendix 1. All books are written in English whereas some videos are in Nepali and some are in English. Suggested age range: all ages.

Zoo Slide Show Presentation
A short slide show presentation is available for all Central Zoo visitors. The slide show provides information about the history of Central Zoo, the zoo’s rules of visitor conduct and the zoo’s collection of endangered mammals, reptiles and birds. The slide show, conducted in the zoo’s Visitors Centre, is approximately 20 minutes long and is available in both the Nepali and English languages. Suggested age range: all ages.

Zoo Guided Tour
The Central Zoo can also provide groups of zoo visitors with a tour guide at your request. The tour guide, a CE facilitator, will lead you and your group through the zoo providing information along the way about the zoo animals’ behaviours and habits in the wild as well as in captivity. Wildlife conservation and protection messages are also provided. The Zoo Guided Tour can be conducted in either Nepali or English. Suggested age range: all ages.

Keeper Talks
The Central Zoo’s trained zookeeper staff is also an integral part of our CE curriculum. At your request, specific zookeepers can engage you and your group in an informal discussion about the various animals in their care, including animal life histories, zoo diet and zoo
Children’s Zoo/Discovery Center (Petting Zoo)
King Mahendra Trust for Nature Conservation/ Central Zoo

As a part of the Conservation Education Master Plan, a project called “Children’s Zoo/Discovery Centre (Petting Zoo)” (CZDC) was proposed to promote conservation education with the purpose of raising the level of animal awareness in children. The Central Zoo covers an area of six hectare and houses about 500 animals of 94 species. Zoos exhibit live wild animals, which have an enormous power of attraction. Photos, films, videos, or encyclopaedias cannot replace the impression made on the visitor through the close physical proximity of live wild animals therefore, the zoo visitor's susceptibility to educational information exists. It is therefore, the foundation for enormous educational potential.

Before embarking on a new project Central Zoo holds an interactive session to brainstorm the project. In this case a SWOT Analysis was held to review all aspects of the Central Zoo in order to establish the Children’s Zoo and Discovery Centre. A SWOT analysis (strengths, weaknesses, opportunities and threats) was undertaken to, not only formally consider the weaknesses, but to also identify the strengths and consider the opportunities and threats so that the project could be successfully implemented.

**Strengths:**

**Conservation Education**
- Existing Zoo Conservation Education Staff.
- Established Conservation Education format.
- Live Animals.
- Existing zoo resources and written materials.

**Zoo Public**
- Increase in Central Zoo attendance
- Strong and positive community support.
- A strong link with area schools has been established.

**Zoo Infrastructure**
- Overall Central Zoo appearance.
- Established Central Zoo Development Committee.
- Newly renovated Central Zoo Visitors Centre.

**Weaknesses:**

**Conservation Education**
- Limitations of the existing Zoo Conservation Education Staff.
- Limitations in current Conservation Education formats

**Zoo Public**
- Limitations in the economic-support of the local community

**Zoo Infrastructure**
- Limitations of the Central Zoo Visitors Centre.

**Opportunities:**
- Central Zoo Public and Our Conservation Education Philosophy

**Threats:**
- Unavailability of financial support.

Children’s Zoo and Discovery Centre: Concept and Audience

**Concept**
The Children's Zoo and Discovery Center should function as a separate section within the Central Zoo with a primary mission to outwardly engage the zoo public in a highly interactive setting to promote active, discovery-based learning about animals and their environments and related conservation issues with a variety of different learning styles. The Children's Zoo and Discovery Centers conservation education format will consist of four areas of emphasis.

Part 4: How? Techniques for Zoo Education
(1) interactive graphics and displays,
(2) activities and games,
(3) an Animal Encounter Zone, and (4) live animal presentations.

Target Audience
Target group of the Children’s Zoo and Discovery Center are the children of Nepal. Indirect target groups of the Children’s Zoo and Discovery Center include adults, foreigner visitors, and under-represented minorities.

Conservation Education Format:
-- Interactive Graphics and Displays -- Examples
1. Mystery Boxes: Visitors will put their hands inside closed Mystery Boxes and touch, feel and guess at what the unknown object inside is.
2. Animal Artifact Carts: Animal artifacts (antlers, horns, teeth, feathers, eggs, skins, skulls, etc.) will be organized into themes and placed on movable carts. Children will have the opportunity to touch, feel and examine the items up close.
3. Build a Food Pyramid: Kids will build their own food pyramid by placing blocks with pictures of different components of the food pyramid on them in the correct order.
4. Animal/Habitat Match-up: Kids will match animals to their natural habitats on a magnetized mural board. A variety of animals and different habitats will be presented.
5. Animal Tracks: Wooden blocks of animal feet will be provided for kids to make animal footprints in sand or dirt.
6. Spinning Quiz Board: Environmental questions will be written on one side of a spinable sign and answers on the other.
7. Animal Camouflage: Contrasting graphics depicting animals with their natural camouflage (stripes, spots, patterns, etc.) and the same animals without them.
8. Animals Up Close: Using magnifying glasses and microscopes to examine animal artifacts up close.

-- Educational Games and Activities
1. Environmental Games/Activities: See Central Zoo Teachers Guide
2. Wildlife Drama/Theater
3. Wildlife Arts and Crafts workshops
4. Birdfeeder construction and observation
5. Zoo Cleanup and Recycling projects
6. Poetry and Essay Contests

-- Animal Encounter Zone
Animals initially available: guinea pigs, chickens, rabbits
Future acquisitions: goats, pigs, ponies, turtles, spiders, snakes, frogs, parrots, hedgehogs, birds of prey, cats, dogs, millipedes, centipedes, caterpillars, butterflies Animal Encounter Zone, etc.

-- Live Animal Presentations -- Examples

Working Animals
Bugs, Bugs, Bugs, Mammals
Birds: general and birds of prey
Reptiles

VI. Conservation Education Format Evaluation
Our evaluation process consists of two parts:
(1) activity design phase evaluation and
(2) activity post-implementation evaluation (lozzi et. al).

A. Activity Design Phase Evaluation
The main objective for the Children’s Zoo and Discovery Center education staff is to provide the zoo public with an interactive learning setting which focuses on environmental issues of Nepal and which caters to a variety of learning styles. To best achieve this goal, the following checklist will be applied throughout the design and planning process and will serve as evaluation criteria during the creation of each educational activity and program.
Do our activities cater to a variety of learning styles?
Do our activities motivate the zoo public?
Do our activities help the public practice and apply what they learn?
Do our activities represent a balance between student-centered and teacher-centered learning?
Do our activities include enough hands-on, discovery learning?
Do we know what misconceptions our public may have?
Do our activities introduce controversial issues to evoke an emotional response in the public?
Do our activities promote critical thinking?
Do our activities promote creative thinking?
Do our activities use innovative questioning?
Do our activities promote cooperative group learning techniques?

B. Activity Post-Implementation Evaluation

There are two main objectives for the Children's Zoo and Discovery Centres target audience:
(1) to raise the level of conservation awareness and
(2) to raise the level of conservation activism.

To evaluate to what degree our conservation education format achieves the first objective, a number of recognized review procedures will be employed. Examples include Children's Zoo and Discovery Centre visitor information surveys, student conservation quizzes and informal visitor feedback to zoo education staff. Evaluation of the second objective will be conducted by charting participatory levels in extra-curricular zoo sponsored conservation projects such as zoo clean-ups, recycling programs and composting programs. We will also closely examine student membership in the many school eco-clubs now affiliated with the Central Zoo as well as the conservation projects they initiate. Finally, we can monitor the growth of the Central Zoo Volunteer program, both in membership as well as scope of responsibilities.

Children's Zoo and Discovery Center Requirements

--- Human Resource Requirements

Head Educator: Will prioritize and direct all conservation education activities of the CZDC. Will also be in charge of developing new educational games and activities for the public.

Graphic Designer: Will research, design, create and implement interactive graphics and displays for the CZDC.

Animal Presenter: Will train CZDC animals for safe presentation to the public, give live animal presentations, and teach other zoo educators on safe animal handling and presentation techniques.

Program Evaluator: Will evaluate the overall effectiveness of all current educational programs and help implement conservation education format improvements.

Animal Keeper: Will provide care for all CZDC animals. Maintaining animal enclosures and monitoring animal health and diet will be primary concerns.

Zoo Veterinarian: Will provide technical health treatment for all CZDC animals. The Central Zoo currently employs 3 zoo veterinarians.

Zoo Volunteer Coordinator: Will recruit new Zoo volunteers and direct overall volunteer program and activities.

Infrastructure Requirements

Several key additions will have to be made to the current infrastructure and facilities of the zoo in order to implement the CZDC.
1. Conservation Education Requirements
Given the increasing trend in zoo attendance, the CZDC will need a large area within the Central Zoo in which to promote its interactive conservation education format. The space will be utilized for (1) posting interactive graphics and displays, (2) conducting children-participatory games and activities, (3) facilitating the Animal Encounter Zone, and (4) performing live animal presentations. As our live animal presentations become more sophisticated and reach larger and larger audiences, an open-air amphitheater facility will become necessary.

2. CZDC Animals Requirements
Facilities will have to be built to house, feed and maintain the health of all CZDC animals. Some of the CZDC animals will also be on public display, requiring additional facilities.

Plans for Children's Zoo and Discovery Center implementation
First year progress -- Conservation Education Format implemented:
1. Interactive graphics and displays: Animal/Habitat Match-up, Animal Artifact Carts, Animals Up Close!, Build a Food Pyramid
2. Educational games and activities: Zoo Cleanup/recycling, poetry and essay contests, existing games and activities, Wildlife Drama
3. Animal Encounter Zone: Guinea pigs, chickens, rabbits

Second year progress -- Conservation Education Format implemented:
1. Interactive graphics and displays: Mystery Boxes, Animal Tracks, Spinning Quiz Boards, Animal Camouflage
2. Interactive games and activities: Wildlife arts/crafts workshops, birdfeeder construction and observations
3. Animal Encounter Zone: turtles, spiders, snakes, frogs, parrots, hedgehogs
4. Live animal presentations: Predator/Prey, Mammals, Birds, Reptiles, Animal Myths and Misconceptions, Bugs

References


Environmental enrichment for zoo animals consists of providing a means for them to be distracted from the tedium of captivity. Boredom is the bane of a zoo animal's existence. In the wild, animals spend much of their day foraging for food, fighting over mates and territory and generally fooling around. In the zoo, food is provided once a day right to the exhibit in an easily consumable form -- it can be eaten in no time and then the rest of the day is empty.

Bears, both sloth bears and black bears at Central Zoo, enjoy “fruit popsicles”. These are bricks of sweetened juice with fruit inside.

The animal, then, is left to his own devices for hours a day with nothing to do and nowhere to go. Visitors provide some distraction but generally animals don’t watch visitors much ... and how many visitors can you watch. There are hundreds a day. Animals, then, develop behavioural “tics” or stereotypic behaviour which may take the form of pacing back and forth, swinging and swaying obsessively, masturbating, tailbiting, compulsive licking, etc. It is obvious that something is wrong with the animals and this gives a very bad impression to visitors.

Hyenas enjoyed watermelons left in their enclosure at Central Zoo. They carried them around in their mouth and later played with them and finally ate them.

Big cats are no different from small domestic cats when it comes to playing. Leopards, tigers and (young) lions will enjoy batting around a ball. Central Zoo tried this with good success.
Environmental enrichment is important for three reasons:

1. Enriched environments improve the psychological and physical well-being of captive animals
2. Enriched environments are more interesting and educational for zoo visitors
3. Enriched environments help to conserve animal species in several ways:

What is an enriched environment?
An enriched environment
1. allows animals to exhibit natural behavior
2. gives animals control over their lives
3. eliminates or reduces frustration
4. makes captive environment more interesting
5. gives animal's more choice
6. encourages animals to be more active which is good for their health.

The zookeeper prepares “fruitcicles” in brick form and hides it in a hollow log for the bear to find.

The bear finds the fruitcicle and spends a long time playing with it and finally eating it. Participants observe the process and will take this welfare and education “tip” back to their zoo to try.

a) increase the reproduction of endangered captive animals
b) natural behaviours are conserved
c) reintroduction survival may be higher

The above was taken from a presentation/booklet by Christine Hanna, Veterinary Technologist with assistance from Dr. B. K. Jha and Ganesh Kumar.
It has been just a few years that behaviourists have focused seriously on this problem and now there is much attention paid to behavioural and environmental enrichment.

Environmental enrichment for animals should become a regular part of any zoo education programme. The educator must interpret the materials provided to the animal in the cage or enclosure as many visitors will not understand otherwise, why there is a ball, or a pumpkin, or a swing, or hollow log, or odd-looking food items. They may think the zoo is trivialising the animal, or that animals swing on swings in the wild. Also it is a way of explaining why a naturalistic enclosure might have something not so natural in it. Finally it is how you can explain to your public how much the zoo cares for the animals, that they are trying to take care of their mental health as well as their physical health.

Lion-tailed macaques in Central Zoo enjoyed playing with a coconut which was left in his cage, carrying it around with him for days. Another one whiled away several hours with ears of corn.

Providing enrichment is not just for the sake of the animal, however. Visitors do not like seeing animals either just pacing back and forth or just sitting. Visitors often will tease an animal to get him to move spontaneously and this is sometimes dangerous to the animal.

For educating visitors, it is important to try and show them the animal as nearly natural as possible. This is difficult in an old fashioned zoo with small cages but even these can be made somewhat better. Animals can be bored in a large enclosure also if there is nothing for them to do. Plenty of large carnivores develop the stereotypic behaviour of circling their area. This is not as noticeable as pacing in a small cage but it is just as indicative of abnormality.

Providing toys, food challenges, furniture, hiding places, and other devices and games for animals has become a regular science. Small zoos and large zoos should take this up as a challenge. This year (2001) seems to have more environmental enrichment questions on email list serves, more articles and books produced, and is the theme of more conferences.

An Assamese macaque found watermelon and tomato to be interesting taste and touch treats.

Central Zoo in Nepal has tried several methods and some of these were demonstrated to participants of the Zoo Educator Training course.
Part 5

What? Subjects for Zoo Education
WHAT? Subjects for Zoo Education

Conservation
- Endangered species, ... plants, animals
- Wildlife habitats
- Threats to ... trade, human population, development, etc.
- Population decline
- Conservation biology
- Amphibian crisis
- Charismatic megavertebrates particularly at risk

Biodiversity
- Importance of all species
- Biodiversity conventions
- Invertebrates - importance, diversity

Zoology
- Taxonomic groups
- Species identification

Biology

Botany
- Plants in the zoo

Environment
- Protection
- Good practice

Ecology
- Balance of nature
- Interaction of species
- Landscape ecology

Animal Welfare
- Awareness of animals as sentient beings
- Developing kindness to animals as important human value
- Zoos role in wildlife welfare

Good behaviour
- Refrain from teasing and Feeding animals
- Refrain from Vandalism of property
- Cooperation and social service
What ... can you teach in the zoo

The number of subjects that can be taught in the zoo, or related to wild animals, is quite amazing. Children often learn their letters first from ABC’s of animals. Good values also can be taught in the zoo -- the values of respect for property, of courtesy to others (even in a crowd situation), of kindness to animals, of the indispensible ability of wild life -- of animals and plants -- our our quality of life.

When planning this Training Programme, we were worried that our philosophy and funds would not go far enough to fill the days with good material for participants. There aren’t so many zoo educators in South Asia and the act of taking many of them to Nepal to be Resource Persons, in any case, was not possible financially.

The Conservation and Education Community of Nepal came to the rescue and provided resource persons to speak on a great variety of animal life and conservation action. Some of their presentations are included here. In the participants signs and their funding proposals and master plans you can also see evidence that some of the Resource Persons made a significant impact.

So, what can you teach in the zoo -- almost everything.

Part 5 : What ? Subjects for Education
Invertebrates in Zoo Education and the Importance of Invertebrate Education

B. A. Daniel, Ph.D., Scientist
Entomologist for Zoo Outreach Organisation, Coimbatore

Introduction:
Invertebrates constitute over 95% of all described living animal species (Chart). More recently it has been estimated that more than 30 million invertebrate taxa are yet to be described. Most invertebrates suffer a negative image by most people. We think of invertebrates as pests, agents of diseases, ugly, dirty, nuisance and generally useless creatures. We strike them, spray them, and stamp them.

The truth of the matter is that we need invertebrates but they don’t need us!

Prof. E.O. Wilson had noted that “if all the vertebrates were to be wiped out, the world’s ecosystem would be upset for several years but if the invertebrates were to be wiped out our planet would never recover”. We could not survive more than a few months without invertebrates. Invertebrates act as recyclers, pollinators and key food-chain organisms. Apart from this invertebrates have an important economic, scientific, cultural and aesthetic value for mankind.

Invertebrate populations are most sensitive of all animal groups. Various threats, especially man made threats are driving many taxa to the brink of extinction. This largest and most important animal group is fast disappearing from the ecosystem, evidenced by the fact that there are more cases of documented endangered invertebrate species than any other animal or plant group.

Biodiversity
-- it puts things into perspective

Human beings being and their favourite animals are absolutely insignificant in terms of numbers, when compared to the totality of Life on earth.

This much
-- may be 95% of all animals -- is invertebrates bugs, butterflies, spiders, ... itty, bitty, creepy crawlie things.

Only this much (3%) of all animals is us -- and our pet, food or wild animals.

The importance of invertebrates and its fast disappearance is not fully realized. Invertebrates therefore require, and deserve as much consideration than the attention given to vertebrate conservation. The need for conservation of invertebrates should reach the common man and the public at large. Zoos can do a lot to achieve this goal.

Part 5: What? Subjects for Education

Invertebrates
Zoos claim the important role they play in educating the public about the nature and value of biodiversity, which is an important contribution to conservation. However, most zoos do not include invertebrates in their collections or in their education programme. This presents a highly biased impression of biodiversity. People come and see lions, tigers, bears, elephants, otters, birds, snakes, etc. and think that they see a good representation of the Earth’s biodiversity. Actually, they are seeing only the tiniest fraction of the biodiversity (vertebrates) and invertebrates make up only 3% of biodiversity. Without giving some attention to invertebrates a zoo can not educate the visitors about how nature works and why it is so important that all species be considered and valued. So in zoo education invertebrates must be included — either as exhibits or by interpretation in relation to other species.

Invertebrates offer endless educational opportunities. Pollination, recycling, medicine, forensic science, genetic research, pollution and, of course, conservation are more bound up with the invertebrates than with any other animal group. If a zoo does not attend invertebrates, it is missing out an exhibit attractions and additional resources that could pull in many more visitors. From the conservation point of view zoos are currently failing to realize anything like their true potential for contributing towards species conservation.

At the 18th General Assembly of IUCN held in Perth in 1990 a resolution was adopted on the conservation of insects and other invertebrates, urging action to strengthen invertebrate displays by zoos and butterfly houses linked to captive breeding and re-establishment programmes (IUCN, 1991) so the CBSG invertebrate Group was formed. One of the six points under the objectives of CBSG invertebrate Group is on education. The group’s stated objective about education is:

1. promote awareness of the vital ecological roles played by invertebrates and particularly the need to conserve invertebrates as important natural resources; 2. Support the use of invertebrates as exhibit animals in zoos and aquaria, and, as such, encourage the use of invertebrates as educational tools.

How invertebrates can be used in zoo education?
1. Live exhibits: simulation of their habitats
2. Educational talk
3. Zoos as habitat: by attracting insects by its host plants
4. Use of live invertebrates for demonstration
5. Using molted skin of invertebrates like spiders, scorpion
6. Use of preserved specimen or pinned specimen
7. Using big invertebrate models made of thermocol
8. Exhibiting drawings and photographs, slide and film shows
9. Providing specific information about cooperative relationship between invertebrates and certain other animals
10. Providing graphics about invertebrates common and critical to certain habitat types
11. Providing graphics showing percentage of biodiversity displayed in the zoo as opposed to invertebrates.
12. Conduct of workshops and training programmes for teachers and
13. Linking with local school teachers

Invertebrates make up an enormous part of the animal kingdom. They have many diverse characters and lend themselves to a variety of methods of presentations. Because invertebrates are unpleasant to most people, invertebrate exhibits need to stress beauty, reactivity, cleanliness, its value to humankind and the positive qualities possessed by many invertebrates.

The following are some of the methods to show how invertebrates can be used in zoo education.

1. Live exhibits:
Live displays can be done in different ways: Separate invertebrate exhibits including both terrestrial and aquatic invertebrates can be established as tool of special education. Another way is to establish an invertebrate display adjacent with a vertebrate display (eg. Dung beetle and an elephant, invertebrates and reptiles explaining their food chain, insects and amphibians etc). This kind of displays will enhance the charm of both displays and it also add to the ecological interpretation of the exhibit. Any facility suitable for the need can be created. As part of education, characteristics of invertebrates such as, diversity, abundance and biomass, complexity of radiation, history, biological and economic importance, biology, interaction with other organism.
etc., has to be stressed. The costs involved in setting up of either individual invertebrate exhibit or as an eco-interpretation exhibits is practically nothing when compared to bigger mammals. So for the establishment of an invertebrate exhibit, more than money, creativity and will of the staff is more required. In the year 1995 no zoos in India had any invertebrate exhibits. Zoo Outreach Organisation with Paul Pearce Kelly of London ZOO organised a series of workshops in South India on display and conservation methods. Now three zoos in South India have incorporated invertebrates in their zoo collection.

2. Educational talk
We are familiar with some of the invertebrates around us, such as, ants, spiders, honeybees, dragonflies, scorpions, butterflies, beetles and multitude of others. This familiarity can be taken by the educators to remove misunderstanding or mis concepts about these animals and can be used as building blocks to educate people about exactly how important these animals are to our future. E.g. honey bee: pollination. In an educational talk always tell about many important things invertebrates do for man e.g., They serve as pollinators of most of our food crops, produce silk, and are useful as indicators of our environment.

To create interest among the visitors certain examples may be used.
How ants can carry 50 times their weight!
How certain butterflies are sensitive to sweet than man!
Dragonflies can see 360 degree!
How a flea can broad a jump 300 times their body length!
Insect animal interaction etc.

Man is using insecticides and pesticides there by indiscriminately killing all invertebrates. The fact is, in nature there are natural enemies like predators and parasites to control invertebrates like insects. Over use of insecticides and pesticides result in environmental pollution. This attitude should change. This can be achieved only through education.

**IS ELEPHANT DUNG GOOD TO EAT?**

26 types of insects *can't* be wrong!

26 assorted types of termites, mites, spiders, ants, butterflies, flies, beetles, ...
use elephant dung for food, shelter, hunting grounds and even for laying eggs.

THE WEB OF LIFE ...

FRESH (ELEPHANT) CAKES!
first come ... first served!
(can also be used as housing ... or even a maternity hospital)
Admist only termites, mites, spiders, ants, butterflies, flies, beetles, ...

Insect elephant interaction:
Using field observations education materials could be prepared.

3. Zoos as habitat: by attracting insects by its host plants
By planting native plant species one can setup an area conductive to butterflies and other insect species with a minimum of work or cost. To make these exhibits mode educational, signs describing and depicting the common species found in your region and identifying the plant material should be erected, coupled with these graphics a brochure detailing the species, both plant and animal, that can be used or expected to come to the insect garden can be provided. Information about how to setup their own garden butterfly garden along with a bibliography of references would give them the stimulus to start their own garden and thus make more habitats available or these wonderful creatures.

4. Use of live animals in programmes:
In using live specimens in the demonstrations one must aware of state, federal and international regulations governing their status in the wild as many are now threatened or endangered. All individuals that handle specimens should be aware of some of the possible hazards such as harmful hairs of certain spiders like tarantulas

Part 5: What ? Subjects for Education Invertebrates
and some caterpillars, stings of scorpions or bites of centipedes, cuts from some stick insects, fluid release from millipedes, that could be harmful. Certain species can be maintained in the zoo to remove myths and misconceptions eg. animals like tarantulas.

5. **Using molted skin of invertebrates like spiders, scorpion**
Artifacts like shed molted skins of scorpions, spiders, bugs, abandoned nests of wasps, bees, cocoons sealed in plastic boxes after the adult has emerged, branches of trees with tunnels of boring insects and spider web caught in black paper which is sprayed with shellac can be used to highlight the wonders of invertebrates. Some white papers can be used to the visitors to allow them to sketch what they have seen. All our education programmes should be sound scientific methods.

6. **Use of preserved or pinned specimen**
Some species can be easily reared in captivity. Other species of the same family of genus may not be suitable for captive propagation. In such case preserved specimens or pinned specimens can be used to make the visitors understand a large cross section of invertebrate life.

7. **Using big invertebrate models:**
Big models of invertebrates made out of thermocol cut-outs can be used as teaching aids for kids. It can be transported easily and can be used for outdoor education programmes.

8. **Exhibiting drawings and photographs, slide and film shows**
Invertebrates can be used as exhibits or used in more formal education programmes. Many invertebrates are small. So even they are displayed in large groups it is just not possible to attract the observers. So techniques such as photo enlargements, its drawings to highlight features like mouth parts, stranglers, and the method used to deploy them, insect eggs how they differ from other animal eggs, leg structure and how they are used in different modes of locomotion etc., can be used.

9. **Providing specific information about cooperative relationship between invertebrates and certain other animals.**

10. **Providing graphics about invertebrates common and critical to certain habitat types**

11. **Providing graphics showing correct percentage of biodiversity displayed in the zoo as opposed to invertebrates.**

12. **Workshops and training programmes:**
In any zookeeper-training programme or in a workshop for local schoolteachers, invertebrates can be used as examples in addition to birds, mammals, reptiles and amphibians. A class on invertebrates can be taught or even a whole workshop. They can be taken out to an outdoor learning facility on zoo grounds to collect specimens which are then brought back to the education building to be identified and should be released back in the field after study. Before the field trip a discussion of general characteristics of insects, such as possession of a hard exoskeleton, jointed legs, number of legs, antennae, segments, and different feeding structures they use, similarities and dissimilarities with in arthropods - If necessary live specimens can be used for demonstration.

Common species that could be used in a classroom could be discussed. Invertebrates such as crickets, zooplankton, ants, cockroaches, earthworms, millipedes and stick insects, praying mantis etc., can be used. Information sheets on how to rear and use these common species may be issued to do in the classroom. The sheet should include lifecycle, habitat design, food requirements, and diseases along with important husbandry instructions. By doing all these, zoo must be prepared to act as a clearinghouse for information and for identification of native species, which the lay person can not identify.

13. **Linking with local school teachers**
Linking with the teachers should be the ultimate goal. Educational materials like books, puppets, biological
facts, slides, posters, photographs and drawings has to be collected and can be circulated in local classroom. A special workshop inviting experts from the museum or an invertebrate specialist from the University can be invited to organise a workshop for school teachers who in turn can teach about invertebrates and its conservation.

**Importance of Invertebrate Education**

Many people develop an innate fear and hatredness regarding invertebrates. Fear and dislike are passed from generation to generation and are based largely on ignorance.

We pass on to children, fear and hatred of insects and other spineless creatures. But it is this lack of understanding of natural systems, fueled by anthropocentrism that distorts the human view of the world and may be the root cause of many political, social, economic and environmental problems. We need to be aware of the bias that exist in education, and as educators, promote creative change.

E. O. Wilson has called invertebrates “the little things that run the world”. Such is the importance of invertebrates for a healthy world. But how many education books about invertebrates are being published. When compared to higher group animals publications about invertebrates is little.

In most of the texts expressions which ridicule invertebrates have been incorporated. Words such as: “Crabby” - meaning extremely ill-tempered person; “slug” - meaning lazy, indolent individual; “worm” - meaning, pitiable, contemptible or weak-willed person; “house” - meaning mean or contemptible person; a leech is a human being who ruthlessly suck profits out of another. “Spineless” describes a person lacking courage or will power.

Little things have special importance as the indicators of ecosystem health. Microorganisms present in lake and stream bottoms and soils are indicators of ecosystem stress. Critical roles of insects and other invertebrates can be well understood in forest soils. Experiments have show, that insects and other micro arthropods control the metabolic activity of fungi and bacteria, which liberate nutrients through litter decomposition and chemical transformation of the soil. Awareness about the astonishing facts about invertebrates has to be created among the public. And this is where zookeepers and educators come in. We are in a unique position to influence children, our economists, formers, lowers, teacher’s secretaries and presidents, through programmes we present at our facilities.

Connecting with the teachers should be the ultimate goal. Acquire materials (Books, puppets, instructional materials, bio facts, slides, photographs etc.,) that can be circulated in local classroom. Organise an invertebrate workshop for teachers in your area. Work with your volunteers to do invertebrate outreach programmes. Write children’s book or article with an invertebrate topic. When it is time to give birthday gifts give them book then sit down and read with them. Zoo Outreach Organisation has developed some such books also in which the printed matter should be explained by an adult and the children colour the animals and their habitat. If we start educating children about such important matters, they will make good policy makers in future who might save the Earth.

**ABC of Indian Insects and Butterflies - Colouring books for Children**

Part 5: What? Subjects for Education  
Invertebrates
Amphibian education

Amphibians form a nice group of animals for conveying a holistic picture on conservation, pollution, environment, life cycles, ecosystem, morphology, uses, etc. Amphibians, as people know them, are cute frogs and warty toads. Stories, both mystical and mythical are built on frogs and toads. Frogs are good ambassadors for neglected wildlife, of smaller creatures that would normally looked at as pests, dangerous or irritable creatures, such as invertebrates, snakes or geckos. Due to their unique standing in the ecosystem, their ‘looks’ and their colours, frogs convey best the plight and right of the lesser known creatures. Frogs are easy to keep and not dangerous to handle thereby making them that much more ‘adorable’ in the eyes of common people. In fact, many advertisements are based on frogs, on their looks, movement, croaks or even their sliminess. A few examples of frogs being a popular medium of advertisement are the ‘Kermit’ cable TV network, advertisement by Fanta©, Frogz candy bar, etc. Amphibians, therefore make a good education medium at zoos.

**Morphology:** Three distinct kinds of amphibians are found — the normal frog or toad kind, the lizard kind (newt or salamander) and the limbless kind (caecilian). Most people are unaware of the last two kinds as amphibians. Amphibians to them mean frogs and toads only. An amphibian exhibit, therefore, makes a good learning tool on forms and diversity.

**Life cycle:** Amphibian life cycles are one of the most interesting things to convey, and to learn. Knowing that ‘amphibians’ are called so because of their amphibious or two-life modes, the visitor’s interest is piqued with good graphics and catchy titles such as the one shown below. Zooming in on the various aspects of their development could double up for some real academic education as well as zoo exhibit interpretation. The signboards or interpretation boards can also take the boredom away from actually searching for a frog, salamander or caecilian if they are hiding from view.
Conservation: Amphibian populations around the world are declining due to very specific factors – diseases, pollution or a combination. This could be interpreted in a way as to convey the drastic changes in the ecosystem, their effects and potential threats to man. The declines would be indicative (in figures or in diagrammatic sketches) of the status of amphibians in the wild. The diseases that are driving the amphibians to extinction can be conveyed effectively. Ecosystem management can be stressed with such educational boards. An effective form of communication of the potential threats to humans can be through a description of a ‘karma’ wheel (of positive feed back).

Frog calls: Frogs make a number of calls, different calls for different species and different situations. The most familiar calls are those made by males during the mating season, which can be interpreted as a harbinger of monsoon. Much is written and shown of the frogs in courtship. Beautiful pictures of the same can dot the exhibit area to show the variations in species based on the vocal sacs, colours, structures, shapes and sizes. An aspect that is not made much use of in the zoo scenario for interpretation is that of the importance of frog calls for identification of species. This can be shown using what biologists do in the field to record and play calls (see figure).

Practical conservation: Since expanding urban areas occupy much of the wilderness surrounding cities and towns, many water bodies are lost thereby reducing habitat space for amphibians. This can be conveyed beautifully. Contributions by interested individuals in attracting amphibian populations to their back yards, such as making artificial ponds, and the significance of such an exercise can be interpreted.

Education: As was conveyed before, amphibians make good educational tools. The art of origami in making paper frogs as decorative objects at homes and in schools can be conveyed for interested school groups. Also teaching how to keep frogs in captivity can benefit those people who have amphibians at home to
keep them better.

There are many other ways of interpreting amphibians such as making simple posters, stickers, cute sketches, etc. such as those shown below. All these sketches are available in various frog resource books and ideas are limitless. It just involves a bit of sympathy towards these little creatures and elegant and attractive interpretation for the lay public.

Part 5: What? Subjects for Education
Nepal has long been well known as a naturalist’s paradise. Nepal holds roughly one tenth of the world's known species that are known to live and breed in this small kingdom. The great biodiversity of Nepalese fauna are revealed by birds.

Of the total bird species found throughout the entire area of South Asia, half are found along the foothills of Nepal Himalayas.

... for waysides, graphics and handouts:

<table>
<thead>
<tr>
<th>Facts about Nepali Birds</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Nepal has 655 species of resident birds</td>
</tr>
<tr>
<td>- 148 species are autumn, winter, spring migrants</td>
</tr>
<tr>
<td>- 62 species summer visitors.</td>
</tr>
<tr>
<td>- 11 species of birds have become extinct in the last 100 years (estimation)</td>
</tr>
<tr>
<td>- over 135 species of birds are threatened due to loss of habitat.</td>
</tr>
</tbody>
</table>

Establishing Bird Parks and Sanctuaries for conserving their habitat and keeping the ecosystem in balance must be attempt of the approaching millennium. Fortunately, Forest birds are sheltered in National Parks and Reserve areas whereas water birds e.g. Cranes, Storks, Ibis, Spoonbills, Waders, Ducks etc. are severely threatened due to lack of protected habitats. Wildfowls, Waterfowls are birds of wetlands and grasslands represent a significant proportion of the world’s bird population.

Why Bird Conservation Education?
To conserve such birds, people have to be educated about the importance of such birds.

Suggested strategies
People can be educated in the natural habitats of birds by field trips etc.

Informative placards and posters can be produced. E.g. Tallest bird, Highest flier, Endemic birds, Unique behaviour etc.

Students can be asked to write essays on birds in general, Painting exhibitions, quiz on birds, Bird fairs can be conducted.

Breeding of rare species and Education on Rehabilitation of birds can be carried out.

Bird/Animal shows can be arranges for like the Orang-utan show (Singapore) or show on birds of prey or vocal birds.

Limiting factors
However the limiting factors are to know how much fund has to be allocated for Conservation education and how to prioritize the different activities.

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Part 5: What? Subjects for Education
Gharial – Threats and Conservation -- for the zoo visitor
T. M. Maskey

Introduction
The Gharial (Gavialis gangeticus), commonly called as the Fresh water Crocodile, is restricted to small areas within the upper reaches of the Brahmaputra and Ganges river systems. The species has been listed in CITES- Appendix I and declared as a protected species by NPWC Act of 1973. They are found in the river Koshi, Kali Gandaki, Narayani, Rapti, Babai and Mahakali of Nepal. The world’s Gharial population was estimated to be over 200 animals in 1978. Among this, 53 were found in Nepal, 129 in India and 20 in Pakistan.

Conservation efforts in Nepal
To prevent the species from becoming extinct, the Gharial breeding centre was established at Royal Chitwan National Park in 1978. The eggs were collected from the wild and hatched in a hatching centre. The hatchlings were brought and reared in a breeding centre. When its size reaches about 1-1.5 m, (3 years of age) and are able to find their food, they are released into the wild. Uptill now 1500 eggs were collected from the wild and hatched. Since from 1981, about 510 Gharials have been released into Narayani, Kali Gandaki, Karnali, Koshi, Babai and Rapti rivers. The first reintroduction was done in the Narayani river, Chitwan. The survival of the released Gharials is encouraging (> 30%). Nepal has provided gharial eggs to India in the end late 1970’s. Six gharials were provided from France to a captive breeding centre. The Breeding centre offers opportunities to researchers for both at home and abroad and also serves as an education centre for students, tourists and other public, which in turn generate wider public support for conservation of this species. Currently there are 257 gharials in RCNP Breeding centre (Including this year’s population).

### Conservation Threats

The various threats to the gharial population are:

1. predation by birds, fishes and monitor lizards
2. Eggs stolen by local ethnic people for food and medicinal purposes
3. Agrochemical threats, poisoning and river pollution
4. Poaching for skin, ghar and other body parts
5. Over-fishing in the rivers
6. Construction and industrial development activities
   (bridge, dams, embankment, industries etc.)
7. Diseases
8. Floods/siltation
9. Habitat loss

Conclusion
Despite all these threats and challenges, we are able to maintain wild gharial population in a stable condition in their natural habitats. Monitoring of the released gharial suggests that survival is effective where human encroachment and man-made barriers are minimal. The Breeding centre is one of the best successful gharial breeding programmes in the world. His Majesty's Government of Nepal has launched Buffer zone management around the protected areas to get public support for conservation and also to involve local researchers and technicians.

### Status of wild and released Gharials in Nepal 1997

<table>
<thead>
<tr>
<th>Name of River</th>
<th>Minimum # Wild Gharials sighted</th>
<th>Minimum # Released Gharials sighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babai</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Kali Gandaki</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Karnali</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Koshi</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Mahakali</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Narayani</td>
<td>28</td>
<td>21</td>
</tr>
<tr>
<td>Rapti (West)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>50</td>
</tr>
</tbody>
</table>
Nepal lies on the southeastern slope of Himalayas. There are four major river systems of Nepal, which arise from Himalayas and are constantly fed by melting snow, glaciers, torrents and by seasonal rains. The Koshi river is the largest river of Nepal, which drains far eastern region. Nepal is drained by Karnali (Ghagra) and Mahakali (Sarada) in the western region. Besides these, Gandaki (Narayani) river drain in central Nepal. All of these rivers join the Ganges river system of India. The upper reaches to all the rivers, torrential, low temperature and currently are barriers for the distribution of river dolphins. Erection of major power-dams in lower reaches towards Indo-Nepal border poses a great threat for the seasonal migration of dolphin in Nepal. Nepalese rivers provide hydrographically unique waterscapes, pools and rapids mitigating nursery habitat needs for juvenile and adult dolphin perhaps many historical breeding grounds in them. Presence of dam (devoid of fish ladders), have checked population growth and intermixing upriver and downriver isolated population. Dolphins also have been target of hunters and fishermen in spillway and tailwater of the dam during low water phase of the river. They are exploited heavily for oil.

Ecological survey on Gangetic dolphin (Platynista gangetica) was conducted between 1999-2000 in the rivers of Nepal as baseline monitoring scheme. The dolphins were abundant in the river twenty years ago. The species is apparently absent now from large water stretches of the Narayani and Mahakali rivers. Koshi and Karnali river hold now residual population of dolphin comprising of 20 individuals. In many pools, rapids and oxbows, dolphin population area absent. Many part of riverine habitat are further fragmented due to the changing water table and dewatering effects. There is evidence of rapid decline of principal fish food of dolphins. Some populations of dolphins are however present at lower reaches of Koshi river. Industrial pollution, extensive use of pesticides, harmful fishing practices (gill netting, drift netting) and barrier effects of dam probably caused rapid decline of dolphin. But the habitat destruction is increasingly important near Indo-Nepal border where habitat is poor, human disturbance assumes greater significance. There is no evidence of food competition with twin river species such as Mugger and Gharial crocodiles. The dolphin is now protected species by law but illegal netting and killing takes place at night along Indo-Nepal border. Dolphins are mainly killed for oil. The steep decline in this internationally important fresh water dolphin is of great concern. There is an urgent need for research, development, plan of His Majesty Government for holistic preservation of riverine habitats e.g. Invertebrates, fishes and abiotic components etc. Recommendations are given for further research and conservation action.

A higher number of dolphins are seen along confluence sites of large and small rivers, hunting fish in spawning run there. Abundance of dolphin increases with the opening of floodgates of barrages. Dolphins follow fish migration pattern and arrive mostly from India. The resident population of dolphin is extremely low.

<table>
<thead>
<tr>
<th>River System</th>
<th>Number Recorded in Dry Season between April - May 1999</th>
<th>Number Recorded in Wet Season of Monsoon between June to July 2000</th>
<th>Local People Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karnali</td>
<td>2</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Koshi</td>
<td>6</td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td>Narayani</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mahakali</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>20</td>
<td>38</td>
</tr>
</tbody>
</table>
Conservation of the One-horned Rhinoceros

Scientific Name and Origin

*Rhinoceros unicornis*

The name is derived from the Greek *rhino*, meaning "nose" and *ceros*, meaning "horn".

Habitat

Floodplains, riverine grasslands.

Life History Characteristics

- Feeds on grasses, fruit, leaves, tree and shrub branches, cultivated crops
- Females sexually mature at 5 to 7 years of age; males at 10 years
- Gestation period approximately 15 - 16 months; interbirth interval of 1 calf every 3 years
- Life span approximately 47 years (captive record)

Rhinoceros have existed for over 50 million years. In the past, there were many different kinds of rhinos, including the largest land mammal that ever lived. Today, 5 species of rhino survive but all are on the verge of extinction, a crisis of catastrophic proportions for such a venerable group of animals. The rhino is being exterminated by poachers who sell the horn for medicinal or ornamental purposes in Asia and the Middle East. Without drastic action, four species of rhino could be extinct in the wild within the next 10 years. Only 14,000 of these marvelous creatures survive in the wild with another 1,000 in captivity. There are fewer than 5,000 of the other four species combined:

- African black rhino: 2,700
- Indian/Nepalese rhino: 2,400
- Sumatran rhino: ~300
- Javan rhino: ~60

The Great one-horned Rhinoceros

The Indian rhino or the greater one-horned rhinoceros is one of the two greatest success stories in rhino conservation (the other one being the southern white rhino in South Africa). With strict protection from Indian and Nepalese wildlife authorities, Indian rhino numbers have recovered from under 200 earlier in this century to around 2,400. However, poaching has remained high and the success is precarious without continued and increased support for conservation efforts in India and Nepal.

The great one-horned Rhinoceros once existed across the entire northern part of the Indian subcontinent from Pakistan to the Indian-Burmese border, and including parts of Nepal and Bhutan. It may also have existed in Burma, Southern China and Indochina. The species now exists in a few small population units generally situated on the Northern border of Eastern India and in Nepal. The present distribution is displayed in the Figure.

Threats to the Species

The combined pressures of habitat destruction and poaching play a major role in fragmenting rhino populations in the wild. When populations become small and fragmented, they become vulnerable to extinction for genetic and demographic reasons, in addition to the direct threats of habitat disturbance and poaching. Moreover the smaller the population, the greater these genetic and demographic threats become.

GASP/GCAP

GCP: The Rhino Global Captive Action Plan (GCP) was initiated in 1992 at a workshop conducted at the London Zoo. The purpose of the Global Captive Action Plan is to provide recommendations and guidelines at the global level for the captive conservation programs for rhinos conducted on the various continents by the regional breeding programs: Species Survival Plan (SSP) in North America; European Endangered Species Breeding Program (EEP) in Europe; Australasian Species Management Plan (ASMP) in Australia and New Zealand; Species Survival Committee in Japan (SSCJ): Indian Endangered Species Breeding Plan (IESBP) in India; and the Rhinoceros Specialist Group (RSG).
Programme (IESBP) in India; African Propagation Program (APP) in Africa; the breeding programs of the South East Asia Zoo Association (SEAZA) in South East Asia. The GCAP documents target populations (i.e., the number of rhino that the programs strive to achieve for genetic and demographic reasons) for each species of rhino at both the global and regional level.

**GASP:** For each of the 4 species of rhino maintained in captivity (black, white, Indian, and Sumatran), there is a corresponding global plan known as the Global Species Survival Plan (GASP). The GASP's attempt to guide and facilitate interaction between the regional breeding programs for these species. For example, the GASP assists with interchanges of rhino between the regions for the genetic and demographic health of each of the regional, and, therefore, the global captive populations.

### RHINOCEROS POPULATIONS
**UNDER INTENSIVE MANAGEMENT EX SITU OR IN SITU**
**ON BOTH GLOBAL AND REGIONAL LEVELS**
**CURRENT NUMBERS 1997**

<table>
<thead>
<tr>
<th>RHINO TAXON</th>
<th>WORLD</th>
<th>AFRICA</th>
<th>ASIA</th>
<th>AUSTRALASIA</th>
<th>EUROPE</th>
<th>N. AMERICA</th>
<th>C.A.S. AMERICA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Black</td>
<td>86.95 ± 181</td>
<td>3.2 ± 5</td>
<td>14.21 ± 35</td>
<td>1.2 ± 2</td>
<td>24.39 ± 63</td>
<td>42.30 ± 72</td>
<td>2.2 ± 4</td>
</tr>
<tr>
<td>Southern Black</td>
<td>25.33 ± 61</td>
<td>6.7 ± 13</td>
<td>0</td>
<td>4.6 ±10</td>
<td>1.2 ±3</td>
<td>18.17 ±35</td>
<td>0</td>
</tr>
<tr>
<td>North Western</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Southern White</td>
<td>30.74 ±640</td>
<td>35.26 ±60</td>
<td>70.80 ±150</td>
<td>9.5 ±14</td>
<td>10.11 ±122</td>
<td>53.64 ±117</td>
<td>23.24 ±47</td>
</tr>
<tr>
<td>Indian/Nepalese</td>
<td>0.05 ±130</td>
<td>0</td>
<td>31.18 ±48</td>
<td>0</td>
<td>15.20 ±35</td>
<td>22.23 ±45</td>
<td>1.0 ±1</td>
</tr>
<tr>
<td>Javan (Java)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Javan (Vietnam)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>mainland Sumatran</td>
<td>2.7 ±9</td>
<td>0</td>
<td>2.7 ±9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sumatran Sumatran</td>
<td>1.4 ±5</td>
<td>0</td>
<td>0.2 ±2</td>
<td>0</td>
<td>0</td>
<td>1.2 ±3</td>
<td>0</td>
</tr>
<tr>
<td>Borneo Sumatran</td>
<td>1.2 ±3</td>
<td>0</td>
<td>1.2 ±3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>African Rhino</td>
<td>246.47 ±900</td>
<td>44.34 ±78</td>
<td>64.10 ±165</td>
<td>14.12 ±26</td>
<td>12.96 ±293</td>
<td>115.11 ±228</td>
<td>25.26 ±51</td>
</tr>
<tr>
<td>Asian Rhino</td>
<td>73.74 ±147</td>
<td>0</td>
<td>34.29 ±63</td>
<td>0</td>
<td>15.20 ±35</td>
<td>22.35 ±49</td>
<td>1.0 ±1</td>
</tr>
<tr>
<td>All Rhino</td>
<td>409.54 ±1047</td>
<td>44.34 ±78</td>
<td>118.13 ±248</td>
<td>14.12 ±26</td>
<td>143.18 ±528</td>
<td>138.13 ±276</td>
<td>25.26 ±52</td>
</tr>
</tbody>
</table>

Numbers are current through 1 January 1998 for North America; 1 January 1997 for all other continents.

Ultimately, major requirements for rhino conservation are:
- Cessation of the illegal trade in rhino horn and products
- Stabilisation, extension and improvement of rhino habitat
- Recovery of rhino populations to viable levels
- Support of local communities for and hence benefit to local communities from rhino conservation

To save the rhinos from extinction, Government, and Non-government organisations, within or outside the country, can be approached for funds. Immediately, the major requirement for Asian rhino conservation is increased protection *in situ* through core areas similar to the intensive protection zones and sanctuaries that have been suc-

Part 5: What? Subjects for Education
Conservation of the Asian Elephant

**Scientific Name:** *Elephas maximus*

**Common Name:** Asian Elephant

**General description:** The Asian elephant differs from the African Elephant by its smaller size, rounded back, much smaller ears, a single “finger” at the end of the trunk and a double-domed forehead instead of a single one. Only the males have tusks. The females have small tusks which may protrude beyond the lips.

**Distribution:** The distribution of the Asian Elephant extended from the Euphrates-Tigris river systems in the West through Asia south of Himalayas to Indochina and most of southern China in the East. Currently its distribution is in Bangladesh, Bhutan, Burma, Cambodia, China, India, Indonesia (Kalimantan and Sumatra), Laos, Malaysia (Peninsular Malaysia and Sabah), Nepal, Sri Lanka, Thailand and Vietnam. About 34,000-54,000 animals are estimated to be in the wild.

<table>
<thead>
<tr>
<th>Country</th>
<th>Estimate (1982)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>281-348</td>
</tr>
<tr>
<td>India</td>
<td>16,595-22,267</td>
</tr>
<tr>
<td>Nepal</td>
<td>57-85</td>
</tr>
</tbody>
</table>

**Threats:**
There is a severe reduction in the numbers of Asian Elephants as they are poached for ivory. In addition, habitat loss and pressures of the human population have reduced the animal’s range to small areas compared to its past distribution. They now exist in isolated populations in 13 different countries. The picture shows the past and present distribution of Elephants.

![Map of Asian Elephant distribution](image)

**Conservation:**
The Conservation of the Asian Elephant is of great significance. This “flagship” species is necessary for the maintenance of biological diversity and ecological integrity on a large scale. The conservation of the elephant could lead to the conservation of other animals living with the elephant too.

**Asian Elephant Action Plan:**
The objective of the Asian Elephant Action Plan is to conserve the maximum number of elephants possible and reduce their conflict with people. This has to be carried out amidst increase in human population, rising living standards and the need for land for agriculture and settlement. National Conservation strategies have to be developed by the various governments. To help conservation organisations and to advise governments about the various strategies, the IUCN/SSC Asian Elephant Specialist group can be sought. An IUCN Asian Elephant Conservation Centre has been established the Indian Institute of Science at Bangalore to prepare a model strategy for the benefit of Asian Governments.
The various conservation methods are:

— To protect Elephants and their habitats, National laws have to be enforced.
— Protected areas and Managed Elephant Ranges have to be established.
— Corridors of Elephant migration have to be traced out.
— Reserves have to be established to minimise conflict between humans and Elephants.
— Certain compensation schemes have to be developed for crop damage on a limited basis.
— Certain Guidelines have to be developed for minimising Elephant Depredation.
— Translocation of pest elephants should be made possible.
— Poaching should be controlled.
— Catchment areas and other development areas can be used to as elephant refuges, thus providing protection to such areas.
— CITES regulations have to be enforced on trade in Asian Elephant ivory and hide

Moreover, People should be educated more regarding the Elephant; They arouse public emotion and ideal to attract support for conservation. They help to maintain biodiversity across huge areas and are ecologically and economically dominant. Success of the Action Plan for these purposes depends on how each government implements its recommendations.
Organisations -- You can teach about international and local conservation organisations in the zoo

Role of IUCN in Conservation Education

IUCN has "three pillars", so to speak -- its 950 Members (both governmental and non-governmental), its six Commissions and its 41 Secretariats all over the world. The Commission on Education and Training takes care of these subjects for IUCN all around the world.

In Nepal, IUCN Office has contributed to Zoo Education by providing publications and signages for Central Zoo.

IUCN's Role in Conservation in Nepal extends to School level Education, Non-formal Education and a variety of trainings and training centres.

IUCN also has organised street theatre, teacher training and many, many public awareness programmes.

The Commission on Education and Communication has its base in IUCN Headquarters in Switzerland and regionally for South East Asia at the Centre for Environment Education (CEE), Ahmedabad. There are several CEC Members in Nepal.

Changing attitudes and practices motivate IUCN to encourage the right values in human beings so that the Earth does not suffer more indignities than it has already done. IUCN tries to motivate, educate and equip people to live sustainably. We campaign for a sustainable society.

IUCN is trying to make environmental education an integral part of formal education and informal at all levels and to meet the training needs for a sustainable society.

IUCN feels that zoos can play a major role in educating people in the right values for environment, and in a powerful manner. The atmosphere and inhabitants of a good zoo put visitors in mind of the beauty and value of wild animals so that any lesson taught in this venue will have a major impact.

At the Zoo Educator Training course, we also had lectures from the King Mahendra Trust for Nature Conservation, from Lumbini Crane Foundation, Bird Life International, Nepal Branch, and World Wide Fund for Nature -- all non-governmental organisations, as well as the Department of Wildlife and National Parks, Government of Nepal.

Part 5: What? Subjects for Education

Non-governmental organisations
Animal Welfare / Visitor Behaviour
Animal Welfare in the Zoo

My ZOO Patrol Kit

Attach this tab in your shirt pocket
Fold here on the dotted line

ZOO PATROL

My ZOO Police Kit

TIGER PATROL
Don't tease the animals

Part 5: What? Subjects for Education
This kit is sponsored by the Universities Federation for Animal Welfare U.F.A.W. -- (U-4) of U.K.

and designed by Zoo Outreach Organisation Z.O.O. of India

It is made from waste materials. No new trees had to be cut or electricity used to make this packet.

Practice conservation of resources whenever possible. Every bit helps save a bit of the natural environment.

How to use this Packet:

1. Put on the ZOO PATROL badge and be a policeman for wildlife in the Zoo today. Ask anyone you see teasing or feeding animals to STOP. You can show them this flyer.

2. Paste the sticker on one of your notebooks or on your almirah (after asking Mom, of course) to remind you to treat zoo animals or any animals (even human animals) as you would like to be treated.

3. Award yourself the little Certificate, if you did not tease or feed animals in the zoo and if you told just one or two people to stop teasing. Thanks for helping out in the zoo today.

This Packet was prepared in the interests of zoos by Zoo Outreach Organisation, Box 1663, Coimbatore 4 with funds from the Universities Federation for Animal Welfare, England. Both Z.O.O. and U.F.A.W. are positive and constructive animal welfare organisations. We try to help animals by helping zoos look after them.

Did you know that if zoo personnel didn't have to spend so much time looking after visitors and keeping them from harming the animals or the zoo grounds, they would have more time to care for the animals. Maybe one reason some zoos are not as good as they should be is because of people.

The Wild Life (Protection) Amendments Act, 1991
No. 44 of 1991

Section 38.J
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.

A visitor who is caught teasing or feeding animals in a zoo can be punished with a fine or jail under a strong law.
Animal Welfare
Fortnightly

is organised every January
by the Animal Welfare
Board of India to create
awareness of the need to
practice kindness to
animals. In zoos, animals
are often teased and
taunted by insensitive or
ignorant visitors who may
also feed them wrong foods
or even dangerous items.

Today animals are not kept
in zoos for public entertain-
ment. They are kept, as if
in a savings bank, for
conservation because their
numbers are growing small.
Wild animals are very
sensitive... don't hurt them.
They are YOUR national
wealth.

Certificate of Merit

This Certificate is to thank

Master / Miss ____________

for helping the zoo to stop visitors
from teasing and feeding the
animals today and for maintaining
law and order and
peace and quiet at the zoo.

Zoo Outreach Organisation
Box 1683, Coimbatore 4

Certificate of Merit

This is to certify that

Mr/s _________________

helped the zoo stop ill-behaved
visitors from teasing and disturb-
ing, and feeding animals wrong
things and for maintaining
law & order and peace & quiet in the zoo.

(Thanks a lot from
the animals too !)

Signed __________
Director of the Zoo

Part 5: What? Subjects for Education
There are two kinds of visitor behaviour

1. Good behaviour

2. Bad Behaviour

Both can be

MIS-behaviour

There are several kinds of Bad Behaviour

1. Well-intentioned, but misguided

2. Deliberate mischief and worse
Of the different behaviours of visitors, nearly every behaviour can be either

1. well intentioned but misguided,
or
2. deliberately destructive

Therefore, a Zoo Director, Educator, or Keeper

MUST be sensitive.

We don't want to punish misguided affection -- only to instruct.

But I was only trying to feed them!

And, when you instruct, you must be very clear about WHAT IS MISBEHAVIOUR

What is Misbehaviour

1. Teasing animals - whistling, shouting, throwing things, running in front of cages, roaring, making noise, waving a handkerchief, etc.

2. Feeding animals - left-over food, food brought for that purpose, non-food items, zoo vendors' food

3. Vandalism of immovable property - buildings, sign boards, vegetation

4. Bothering other visitors

5. Loitering (including drunken loitering, sleeping, using the zoo as a dwelling)

Etc., etc., etc.

THERE ARE TWO MAJOR WAYS OF DEALING WITH MISBEHAVIOUR

1. PREVENTATIVE

2 CURATIVE

AND THREE MAJOR APPROACHES

1. MORAL

2. LEGAL

3. MECHANICAL
Process for prevention of vandalism

The same process will work when planning almost any kind of programme:
1. Investigate -- Know your audience. Who are they, what age group, what kind (well-intentioned or mischievous), Do a visitor survey on teasing and other behaviour.
2. Implement -- do it; ... use appropriate symbols and methods, depending on your particular problem - visitors -- cultural context sensitive -- appeal to better nature or fears, etc.

Make temporary signs at first, and ... 3. Evaluate -- test them on your public, with the help of a research student if possible.

Mechanical Approaches include:
- Enclosure design to prevent teasing
- Enclosure which diverts teasing
- Interactive devices that sublimate energy or solve problems
- Disallowing open doors
- Watch and ward (Could be volunteers)
- Barriers
- Etc.

Some Moral/Ethical/Educational Approaches
1. Play on people's better nature
2. Convey the message that it's 'low class' to misbehave in the zoo
3. Education of school groups before the visit
4. Education in zoo orientation programme or lecture
5. Education in the zoo -- boards, keeper talks, brochures etc.

Legal Approaches include:
- Animal Welfare legislation
- Wildlife Act legislation
- Special zoo legislation
- General vandalism legislation
- Rules in your zoo/park

Part 5: What? Subjects for Education

Welfare / Visitor Behaviour
PREVENTION IS BETTER THAN CURE

All three ways (e.g. moral, legal mechanical) can be used to prevent misbehaviour

CURING IS MORE DIFFICULT

Curing or repairing
1. damage to the zoo
2. injury to the animals
3. damage to young minds (e.g. bad habits die hard)

Therefore, the responsibility of the Zoo Educator is great ...

It is to PREVENT misbehaviour at the source

BRAINWASH THEM WHILE THEY ARE YOUNG

BRAIN-WASHING

can be Moral, Ethical or Practical
It can be Negative or Positive

You can take a positive ("+") approach,

It is fun It is interesting
It is easy It is enriching

TO BE KIND TO ANIMALS

You can take a negative ("-") approach,
It's not "nice" -- welfare
It's not "safe" -- health
It's not "green" -- conservation

TO TEASE OR FEED ANIMALS or guilt inducing sayings such as

Do you want to kill the last of the species? Animals in this zoo are priceless. No amount of money can replace them. Help conserve them. Don't tease zoo animals.

Part 5: What? Subjects for Education

Welfare / Visitor Behaviour
PUT YOURSELF IN THEIR PLACE

DO NOT TEASE OR FEED THE ANIMALS

COMMENT OF AN INDIAN ZOO DIRECTOR IN A MEETING WHEN TOPIC
OF CONSERVATION CAME UP :
"We are so busy getting ready for and cleaning up after visitors, where is
the time for conservation."

He is right. He didn't mean "getting ready" to educate or entertain visitors,
however, he meant "getting ready" as in a war. The zoo has to gear up to
protect the animals from the visitors before the day begins and to repair the
damage afterwards.

Some of the zoo's educational efforts have to be directed towards correct
behaviour in the zoo.

One of the most important things to remember when trying to control misbe-
avour in the zoo is that most of it stems from ignorance and a lack of
awareness.

The Golden Rule says "Do unto others as you would have them do unto
you." This concept is a universal concept. That is why the cartoon drawing
at the top of the page has become so popular in India and other parts of
Asia as well.

Appealing to visitors' better nature is the preferred method

Explaining the various reasons WHY they should not tease and feed animals
will have a better effect on MOST visitors than any threat or punishment.

WHAT ARE SOME METHODS YOUR ZOO USES TO COMBAT BAD
VISITOR BEHAVIOUR ?

1.

2.

3.

4.
Making Behavioural Signage

- Use emotional as well as intellectual appeal.
- Place boards at eye level whenever possible.
- Keep wording to a minimum and try to use some illustrations.
- Don’t say "don’t". Word your message in a positive way ...
- Tell visitors WHY they shouldn’t tease or feed animals ...
- Suggest some things to do instead.

**FEEDING animals is not a good idea ... why?**

Animals have their own type of food. Zoo officials know what is the correct food for wild animals. Your food may be good for you but not for the animals ... and it will spoil their appetite for their own healthy food.

Animals may swallow anything. Particularly things with a food smell. That plastic popcorn bag can lodge in the stomach and kill. Zoo animals also catch human diseases by eating our food.

Animals in the zoo need to eat less to stay healthy. Zoo animals do not have to search for their food. They do not exercise as much as animals in the wild. Eating your food makes them overweight and sluggish. Zookeepers carefully weigh and measure the food so they will get just the right amount.

**TEASING animals is not a good idea. Why?**

Animals also have feelings. Animals become irritated, frightened, and sad. If they become very upset they may lose their health; they will not eat or rest or have babies. Animals love kind (and quiet) treatment.

Animals need rest and Privacy. Many of the zoo animals are nocturnal (their normal waking time is night). If we disturb them, it is like being woken up at 2 a.m. Nobody likes that.

Animals are endangered in the wild. Zoos don’t take animals from the wild anymore. If anything happens to these, we can’t get more.
Part 6

Who gives and gets
Zoo Education?
WHO gives and gets Zoo Education

WHO is your audience?

- **Audience inside the zoo** -- general visitors of all ages and socio-economic brackets, school groups, visiting dignitaries, field trips for training courses, etc. etc.

  Need to know their age, sex, educational level, income, social group, religion, purpose, etc. Find out from gate analysis, random survey, systematic interview, etc.

- **Audience outside the zoo** -- media consumers (newspapers, t.v., radio, magazines, etc.), under-resourced schools, hospital patients, jails even (why not?), orphanages, civic groups, college meetings, etc.

  Outreach Programmes can take the zoo to the public with small animal displays, taxidermy models, audio visual programmes, lectures, games, discussion meetings.

WHO is your educator?

- **Educator inside the zoo** -- Education Officer, educational assistants, Director, Veterinary doctor Curator, Keepers, Zoo volunteers

  All need training in zoo education

- **Educators outside the zoo** -- media, teachers, school curricula, media (particularly t.v.), conservation NGO's, forest and wildlife personnel, etc.

  All need training and information to help you do your job
Who gets zoo education? Visitors ... what do we need to know about them?

Resource person Meena Raghunathan talked about visitors and posed questions for Working Group sessions: "What do we need to know about zoo visitors to develop an educational strategy? How do we find out about them? What do visitors want to know about animals?"

It was noted that zoos can't use a "canned" visitor survey but must develop their own which will serve their special needs. For practice in targeting visitors and gathering information about them, participants divided into Working Groups, selected questions to answer, and came up with the following Reports:

**Group 1:**
Group 1 selected the question "How do we find out what visitors want to know about an animal?" The answers are Interview, Questionnaire and Observation of what they look at and what they say to one another.

1. Name of the animal
2. Scientific name
3. Habitat
4. Habit
   a. Feeding
   b. Biological behaviour
   c. Breeding -
      1. Generation period
      2. Litter size
     3. Oviparous
     4. Viviparous
     5. Ovo-viviparous
   d. Cannibalism
   e. Specific features (Hibernation etc.,)
   f. Man-eater or not
   g. Myths - religion, medicine etc.,
   h. Life span
   i. Diseases
   j. Social behaviour
   k. How far they can jump
5. Status

Date  Name  Signature

**Group 2:**
Group two selected "What do we need to know about zoo visitors to develop an educational strategy?" and suggested a visitor survey with the following format:

Visitor survey:
- Interview
- Questionnaire
- Observation

**Group 3:**
Group 3 selected "What do we need to know about visitors to develop educational strategy and how do we find out?"

CLASSIFICATION OF VISITORS:
- Age group
- Educational level
- Purpose of visit

RECORD OF AGE GROUP:
- Through summary of sales of tickets.

QUESTIONNAIRE:
- Simple, not time-consuming, maybe even carry the questionnaires around and fill them out ourselves.
- How do we find out what visitors want to know about an animal?
- Throw out a question i.e., invite comments and response.

Part 8: Who gives and gets Zoo Education?

What do we need to know about zoo visitors?
Talk to different groups as appropriate.

Keep your talks short, highlighting amazing facts of animals.

Questionnaire – maybe a tick sheet on cage itself. Suggestion box or visitors book.

Post card detailing visitor questions at entry and asking visitor address so we can respond.

Floor had one suggestion: Give prizes for filled questionnaires.

Group 3 answered the question "What do we need to know about visitors to develop on strategy?"

1. Age groups of visitors
2. Purpose of visit
3. Area to which they belong (urban/rural/mixed)
4. Economic condition of visitors
5. Days of visit i.e., Environment Day, Wildlife week etc.,
6. Frequency of visit

How do we find out what visitors want to know about the animals?

1. Observation of visitor by questionnaire
2. Suggestion box or visitor box
3. Opinion poll by using media
WHO can help educate people in the zoo?

Volunteers, businessmen, press, even students as well as the education staff can help. The Central Zoo, Nepal makes use of a whole range of people and devices to spread zoo and wildlife education to many, many people.

Central Zoo has a 6000 strong Friends of the Zoo. In order to manage the members better and to insure a relevant focus, Friends of the Zoo started an ambitious Eco-Club Programme FOZEC. The clubs participate in a wide range of activities guided by many individuals and institutions. The Eco Clubs are centered around schools. Teachers and student members of FOZ make up the FOZEC Executive Body. This not only promotes wildlife and environmental education but also instills a sense of responsibility in the student members.

Central Zoo, KMTNC has brought out a booklet for the Eco Clubs to guide them in their activities. The booklet lays out the organisation structure of FOZEC and also gives an overview of Conservation Facilities provided by the Central Zoo.

Fundraising tips are also provided so that each club can raise funds for their own activities.

The Friends of the Zoo of Central Zoo is so popular that hundreds of business persons in the community have agreed to give as much as a 20-30% discount on their products to FOZ members. This discount attracts customers who might not have visited a particular business and also gives members the feeling that their membership in Central Zoo FOZ carries many benefits. Central Zoo benefits by the membership amount and also a cadre of volunteers. It is a programme in which everybody wins.
FRIENDS OF THE ZOO ECO-CLUB (FOZEC)

1. INTRODUCTION

The “Friends of the Zoo Eco-Club” (FOZEC) program is initiated by the King Mahendra Trust for Nature Conservation (KMTNC)/Central Zoo and WWF-Nepal Program. This program is aimed at raising Conservation Awareness and promoting students' participation in the process of Zoo development.

This program also aims at promoting and facilitating student initiated environmental projects which will create “Green Gifts” to be exchanged with students inside the country and abroad. The idea of promoting Eco-Clubs is to institutionally sustain students' environmental activities at their schools. This will give them opportunities to develop different environmental projects on their own.

The Eco-Clubs are environmental activity based clubs for school students. The students will be motivated and mobilized through Friends of the Zoo Eco-Club providing various education programs that will enhance their inquisitiveness and interest in environmental affairs. FOZEC will design different environmental projects according to the school calendar and implement them. After the completion of these projects it will be transformed into a presentable item, which is termed as a Green Gift. (Detail of the green gifts is given at them no.9.)

This program also aims to further enhance and support the “Friends of the Zoo (FOZ)” program undertaken by the Central Zoo. Currently there are more than 2000 FOZ members comprising of students and individuals. These FOZ members, particularly, the school students of Kathmandu Valley, would be mobilised for the collective action in promoting the Friends of the Zoo Eco-Club (FOZEC) program.

2. FOZEC'S MAIN OBJECTIVES

The broad aims of the project are to promote awareness among students on global and local environmental issues, and mobilise them to participate in environmental activities. Its major objectives are:

- To motivate teachers and students of FOZ membership holding schools and also other schools to participate in local and regional environmental activities.
- To make the students develop environmental projects and implement them. This will increase the students' awareness of local and global environmental issues.
- To exchange and share environmental messages and ideas through Green Gift Exchange Program in and outside the country.
- To create a network of schools within and around the region which will assist in creating awareness among students not only of local and global environmental issues but also mobilise them to participate in environmental projects through the formation of FOZEC.
- To make a collective effort in the Zoo education process, or for the betterment of the environment.

3. RULES AND REGULATIONS

3.1 CRITERIA TO BE A MEMBER OF FOZEC

1. The student should be a member of Friends of Zoo (FOZ) to be eligible for being selected in the FOZEC Committee.

2. All students holding FOZ membership could directly be a member of FOZEC and can take part in all FOZEC competitions and exhibition or the school should have a minimum of 150 students FOZ members to participate in the FOZEC Programs.

3.2 CRITERIA FOR THE EXISTING ECO-CLUB

The existing Eco-Clubs could also come under the umbrella of FOZEC, provided they follow the criteria no. 3.1.2. The members of the FOZ, get special benefits from Zoo and from various business houses. (See Annex 8)
3.3 RESPONSIBILITY OF THE SCHOOL

- Assign a teacher for the FOZEC for supervision and help.
- Selection of members from valid FOZ for the FOZEC Committee
- Committee members: Must be nine or eleven or thirteen in total to form a FOZEC executive body.

<table>
<thead>
<tr>
<th>Student</th>
<th>1</th>
<th>Chairperson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>1</td>
<td>Vice Chairperson</td>
</tr>
<tr>
<td>Students</td>
<td>4 or 6 or 8</td>
<td>Board members</td>
</tr>
<tr>
<td>Student</td>
<td>1</td>
<td>Member Secretary</td>
</tr>
<tr>
<td>Student</td>
<td>1</td>
<td>Treasurer</td>
</tr>
<tr>
<td>Teacher</td>
<td>1</td>
<td>Advisor</td>
</tr>
</tbody>
</table>
- Committee members should be of secondary class (Grade 6 or above)
- Board members should be represented by at least one student from each class.
- Should assist and motivate students to take part in the FOZEC activities
- The committee should be renewed each year.

3.4 RESPONSIBILITY OF FOZEC

FOZEC’s responsibility will include the following:

i) Prepare yearly program of environmental activities based on the school’s academic calendar.

ii) The activities may include improving environment of the school premises like compound, garden, walkways, classrooms and bathrooms etc. followed by the programs such as:
   - Drawings, poems, songs and essay competitions
   - Clean up campaigns
   - Wall paintings
   - Plantation
   - Bird watching
   - Nature walk
   - Zoo guided tours

iii) Collection of conservation messages, articles and essays for green gift exchange.
iv) Collection of educational materials and selected articles to be sent to Zoo for publication and circulation.
vi) Participation in exhibitions of Eco-Clubs organised by the Zoo.
vii) Motivate the students to become a member of FOZ and Eco-Club.
vii) Exchange green gifts with other schools within the country or abroad.
viii) Facilitate interaction between FOZEC Members and the schools.
ix) Fund raising for FOZEC activities.

3.5 RESPONSIBILITY OF THE EXECUTIVE COMMITTEE

- The meeting of the executive committee must be held at least once a month.
- The committee should evaluate the activities of the club.
- Lead different activities, at least one program by each Executive member.

Responsibility of the Chairperson:
- Under the supervision of the advisor and with the discussion of the members the chairperson will decide the implementation of the program.
- Will set a calendar and working pattern for the year.
- Must call the meeting and hold it only in the presence of three-fourth club members.

Responsibility of the Vice-Chairperson:
- In the absence of Chairperson the Vice-Chairperson will assume the duty of the Chairperson.

Responsibility of the Secretary:
- Must keep the minutes of each meeting
- Must prepare the proposal for funding agencies. Format is given in Annex 3.
- Must prepare the final report of the program according to the given format (See Annex 4).

Responsibility of the General Member:
- Should take part in all or 75% of the activities of the club.

Responsibility of the treasurer:
- Must prepare the budget plan before the program implementation.
- Must keep the record of all expenses.
- Must submit the final report of the expenses at the end of the year.
- Must plan for the logistic support of the program.
- Must keep records of funds and assets properties of the club.

3.6 RESPONSIBILITY OF THE SUPERVISING TEACHER
- Teacher should take part in the orientation program organised for them.
- Should help and guide the students in planning and implementing the environmental program.
- Should suggest, monitor, and evaluate the program.
- Should coordinate with the Zoo officials to implement the program.
- Should supervise the tentative work plan (See Annex 4).
- Should correspond with the national and international environmental agencies.
- Should make necessary connections between school authority and the students acting like a mediator.
- Should help find suitable sponsoring organization for the students.
- Should participate in different seminars, workshops etc.

4. MEETINGS AND TIME DURATION
- General meetings should be held once a year.
- During the meeting the activities must be informed.
- Preparation for the Green Gift competition.
- Executive committee should be nominated for the coming year during this meeting.

5. FACILITIES TO BE PROVIDED BY ZOO
- Zoo will organize orientation workshop and provide necessary materials and logistical support for the teacher who will be supervising FOZEC Board.
- The Zoo will develop required educational materials.
- The Zoo will undertake monitoring and evaluation of each FOZEC.
- The Zoo will give first preference for any sort of Zoo facility to FOZEC members.
- The Zoo will collect materials from the FOZEC for exhibition and competition and selected materials will be transformed into green gift to be dispatched to the schools of regional countries.
- The Zoo will prepare and manage the award ceremony.
- To arrange audio/visual environmental programs for the Eco-Club members.
- The Zoo will offer NRs. 5000 to five schools with the highest number of FOZ members or with the highest percentage of FOZ members.

6. DIFFERENT STAGES TO FORM FOZEC

There are different stages to form the FOZEC, which is given in the table below.

The dates would be planned according to the convenience of the Zoo authorities and the School authorities.
<table>
<thead>
<tr>
<th>Stages</th>
<th>Work Plan</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teacher orientation to introduce FOZEC</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Club formation</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Formation of FOZEC executive committee</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Program Planning for coming year by the FOZEC Executive Body</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Meeting of the FOZEC</td>
<td></td>
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<tr>
<td>6</td>
<td>Implementation of planned programs by FOZEC</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Monitoring of FOZEC by the Zoo</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Production of Green Gifts</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Reporting on the project</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Submission of Green Gift to Zoo</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>FOZEC participation in the competition exhibition organised by Zoo</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Award Giving Ceremony</td>
<td></td>
</tr>
</tbody>
</table>

7. CRITERIA FOR THE COMPETITION OF THE PROJECTS

Environmental projects are basically designed to raise environmental awareness and to enhance their inquisitiveness and their interest in environmental affairs. Since these programs are developed by the club member themselves with the guidance of their teacher it will be more result orienting. This club consists of an executive committee as mentioned earlier. Environmental projects could be of various types, for example, composting the waste materials, paper recycling, tree plantation, kitchen gardening, tree tagging, clean up campaign, environment quiz contest, environment spelling contest, essay writing contest, art competition, stage play etc.

These projects should be completed and submitted to the Zoo on the given dateline. Project reports submitted after the mentioned date will not be eligible for the competition. Collection of the materials from the Eco-Club will be on given dateline. They will be exhibited and evaluated by a panel of judges and the best project will be awarded.

The Zoo will award best FOZEC as following:
- NRs. 15,000 for the best FOZEC
- NRs. 10,000 for 2nd best
- NRs. 5,000 for 3rd best

These projects will be transformed into audio-visual form, or in a presentable form as a green gift. These green gifts will be exchanged with other Eco-Clubs within and outside the country, which will be arranged by the Central Zoo.

8. FINANCIAL CONDITIONS

These clubs will raise the required budget themselves by developing proposals and approach different agencies, organizations, business houses etc. Proposal writing format is given in annex 3. This will involve more people of the community and will spread the environmental message more. Some tips to raise the fund is given in Annex 7.

9. GREEN GIFTS

The Eco-Club develops different environmental projects and implements it. The outcome of this project is transformed into audio-visual form, which is termed as a Green Gift. These green gifts are exchanged which share environmental messages and ideas through Green Gift Exchange program in and outside the country like Bhutan, Hong Kong, India, Japan, Malaysia, and Pakistan etc. which also have the Eco-Clubs. Green gifts may be extended in other countries as well. The green gift packages will contain environmental messages from different countries & localities. It also contains a description and products of students’ environmental activities.

OBJECTIVES

1. To encourage students to study, practice and undertake environmental activities
2. To encourage students to share their knowledge, concepts, skills among their peers abroad
CONSERVATION EDUCATION FACILITIES PROVIDED BY THE ZOO

One week before visiting the Zoo, the teacher should contact the Conservation Education (CE) Section of the Zoo to choose activities that will enhance student's visit, and receive orientation if necessary, about how to plan a visit. The Conservation Education Section of Central Zoo offers the following activities:

I. Slides and Films
   The zoo staff have put together an introductory slide show (both in Nepali and in English) for visitors to the zoo. It gives a brief history of Central Zoo, explains the rules of behavior requested, and tells about the zoo's mammals, reptiles and birds. The Zoo also has collection of films about wildlife and nature conservation.

II. Guided Tours
   The zoo provides tour guides who will make your visit a more enjoyable one. They are able to give additional information about the zoo's animals and how they are kept and maintained in captivity, as well as important information about conserving and protecting wildlife and the natural wilderness.

III. Educational Games
   The teacher can select one or more of the available games and get the needed materials. Each game will include its objectives, the number of players, the best age range, options for outdoor and indoor activities, background information for the instructor, a list of any materials needed and step-by-step procedures. We request your feedback and evaluation, in order to know if our goals and yours have been achieved.
IV. Natural History Cards
These contain descriptions about morphological features and biological facts of the animals in the Zoo's collection. They are an excellent source of information for teachers and students. Teachers can select a group of cards on a specific theme. For example: mammals of the tropical forest, etc.

V. Inter-cultural Oral History (Folk Story Telling)
The Zoo can arrange story telling for your class. A volunteer from the community will tell a story or myth or folktale about a wild animal. Students can listen to a story and then write and illustrate it and then bind it in a book for others to read or to exchange with student abroad.

VII. Zoo Treasure Walk
This is an activity for students in which they can have a discovery experience of wild animals - their classification, behaviours, adaptational features and habitats etc. The Zoo will provide an instruction sheet containing three parts and students can follow the instructions to fill in the answers by observing the animals in the Zoo.

VII. Zoo Patrolling
This is an activity for students to participate in Zoo Animal Management activities. First, students will be briefed about the Zoo's code of conduct, and a general description of a particular animal including its dietary requirements. Later, students will be assigned to a particular enclosure, where they will inform visitors about that animal and remind visitors about zoo rules, if necessary.

VIII. Zoo Keepers Talks
In this activity our trained zookeepers will provide information about animals, including their life histories: how they were raised, what they eat, how they were trained (if they were). For example, about the elephant, how its carriage is mounted, etc.

IX. Zoo Animal Colouring Book and Puzzles
These activities are especially designed for smaller children. The Zoo will provide animal puzzles and colouring sheets, and children have to go to the particular animal enclosures, where they can colour or solve the puzzles, by looking at the animals.

X. Zoo Out-reach Program
Central Zoo produces posters, pamphlets, and books about some of its animals. These are available to schools through arrangements with the Zoo's Conservation Education (CE) Section. The CE section mobile team can also arrange a slide show or wildlife documentary at your school, on your request. (If your students cannot visit the Zoo because they are handicapped, or for some other reason.)

XI. Zoo Quiz
A Zoo Quiz can also be organised for the students. First, the class will be divided into different groups and they will be allowed time to read the labels and to observe the animals of the Zoo for about 30 minutes. Then, a quiz will be held at a pre-designated location.
TIPS TO RAISE FUNDS TO SUPPORT YOUR PROGRAM

1. A small amount of money from a large number of people:
Raffles - Using donated prizes, raffles offer a safe, secure but labour-intensive way of raising funds.

Points to remember:
- The more prizes the more attractive the raffle.
- Prizes should be desirable to the people you are selling the tickets to.
- Use as many different ticket sellers as you can but keep track of your tickets.
- Organize your ticket sellers so that a large area can be covered with little possible overlap.
- Price your tickets with your “customer” in mind.

2. A large amount of money from a small number of people:
Sponsorship - Acquiring major sponsors for a project may involve a little more groundwork but, once secured, sponsorship can be the simplest way of raising money.

Points to remember:
- Your sponsor can provide cash or goods or services required for your project.
- When asking for sponsorship you will need to tell the sponsor:
  * What and how much you need.
  * When and where it will be used.
  * What the sponsor will receive in return.

- Sponsors will often be happy with their company name being associated with a project only if the project is in line with their business, or their potential customers will see their name.
- If your project is in a very public area, larger companies will be more willing to contribute.
- Use the local newspaper, send newsletters and include the sponsor’s name in everything.

3. Buying and selling:
Buying items and selling them for a higher price can raise money, however you will need initial capital.

Points to remember:
- Make sure what you buy is needed by the people you are selling to.
- Make sure your “customer” can afford your prices.
- Try to sell something that they can’t buy elsewhere.
- Make sure your “sellers” are organised and your customers know where to find them.
- If possible, your sell products should have an environmentally friendly theme. They should always be environmentally friendly.

Note:
Always keep records of ticket numbers, cash and goods received and cash spent. The public or sponsors will not be willing to continue to support your project if they don’t trust that the money raised is going to a good cause.

Always try for as much publicity as possible for your project and mention any sponsors to continue to support you and may even attract additional sponsors.

- Publishing magazine and post cards could also raise funds.
1) WIMPY, Durbar Marga: 10% discount on food items - Tel: 220299
2) THE BAKERY CAFÉ, Jawalakhel: 10% discount on every food item - Tel: 522959
3) TASTY BITE RESTAURANT, Jawalakhel: 10% discount on total bill - Tel: 529895
4) THE FOUNTAIN RESTAURANT & BAR, Lazimpat: Tel: 15% discount on food item. Tel: 428748
5) BHANCHHAGHAR, Ktmaladi: 20% discount. -Tel: 419260
6) HIM THAI RESTAURANT, Lazimpat: 15% discount on food and beverages. - Tel: 412142
7) MIKES BREAKFAST, Nagpokhari: 10% discount on total bill. - Tel: 424303
8) SKCafe ROLLER SKATING RESORT, Nagpokhari: 15% discount on all facilities (skating, videogames, restaurant, pool & snorker) -Tel: 414302
9) SUITE HOTEL AND HEALTHCARE CENTER, Kudalini. Maharajgunj: 17% discount to adult & 34% to children in swimming only. - Tel: 413938
10) CLUB HIMALAYAN, Nagarkot, Resort: 15% discount on accommodation & food items. - Tel: 425983
11) EVEREST PANORAMA RESORT, Daman: Special discount on accommodation & food items - Tel: 415372,
12) HATTIBAN RESORT, Pharping: 15% discount on food & beverages. - Tel: 290622
13) ISLAND JUNGLE RESORT (RCNP), Chitwan: 25% discount no total bill. - Tel: 229116
14) RATNA BOOK DISTRIBUTORS (P) LTD, Baghazar: 5% discount on textbook & 10% discount on general book. -Tel: 242007
15) SARASWATI BOOK CENTER, Pulchowk, Lalitpur: 5% discount on textbook & 10% discount on general book. - Tel: 521599
16) INSTITUTION OF INFORMATION TECHNOLOGY, Patalisadak: 20% discount on computer training. - Tel: 241421
17) MEMOREX GROUP OF COMPANIES, Kathmandu: 10% discount on computer & other courses. - Tel: 422988
18) SYSTEM SOFT COMPUTER, Pulchowk: 20% discount on computer training.
19) DEBUG VOCATIONAL TRAINING CENTER, Manahaw: 10-30% on language & computer training. - Tel: 524784
20) COLOR PHOTO SERVIC, New Road: 25% discount on photo processing. - Tel: 271357
21) KATHMANDU COLOR LAB, Khichapokhari, Ganabajar: 25% discount on photo processing. - Tel: 249313
22) RAYS COLOR LAB (P.) LTD, Jawalakhel: 15% discount on photo printing. - Tel: 524637
23) HORIZON COLOR LAB, Jamal: 25% discount on total bill. - Tel: 221806
24) BLUEBIRD DEPARTMENT STORE, Tripureswor & Lazimpat: 5% discount except blue tag items, Mont blanc pen, Crystal & the coffee shop. - Tel: 228833
25) ARCHIES GALLERY, Khichapokhari, New Road: 5% discount on total bill. - Tel: 253237
26) HALL MARK, Khichapokhari & Jawalakhel: 25% discount on total bill. - Tel: 520681
27) WEL-COME SHOPPING CENTER, New Road: 10% discount on total bill. - Tel: 248167
28) WIZARD'S FRESH FLOWER SHOPPE, Kathmandu plaza: 10% discount on total bill except flower. - Tel: 253140
29) FASHION DEN, Lazimpat: 10% discount on total bill. - Tel: 418347
30) PARK AVENUE, Patalisadak: 7-10% discount on total bill. - Tel: 240568
31) WEAN CO-OPEATIVE, Kupandole: 5% discount on every items. - Tel: 520429
32) HIMALAYAN WOOD CARVING, Kumaripati: 10-15% discount on interior & wood carvings. - Tel: 538421
33) LADY NAMUNA TAILORING, Baghazar: 10% discount on stitching & materials. - Tel: 229026
34) WOMEN'S SKILL HANDICRAFT, Lazimpat: 15% discount on total bill. - Tel: 428557
35) MELODY TIME, New Road: 10% discount on audiocassette & CD. - Tel: 247525
36) ISHAN CHILDREN'S NURSING HOME (P.) Ltd, Maharajgunj: MMR, Meningitis, Typhoid, Hepatitis B, Anti-rabies, Vaccinations & Surgeons Charges for children's operations-10% discount. - Tel: 412028
37) ALKA PHARMACY & CLINIC, Jawalakhel: 20% discount on medical check-up. Pathology test & x-rays. - Tel: 535147
38) UPACHAR KENDRA (RADHA KUTI ARCA, 2ND FLOOR), Patalisadak: 20% discount on Pathology test. 25%-discount on Ultra sound and Endoscopy. - Tel: 470808
39) KRISHNA TENT HOUSE, Mahapal, Lalitpur: 25% discount on rental materials. - Tel: 525999
40) KASTHAMANDAP TENT HOUSE, Kupandole: 25% discount on total bill. - Tel: 537757
41) EVEREST NEPAL DRIVING INSTITUTE, Teku: 15% discount on total bill. - Tel: 231197

Internal Zoo Facilities:

1) Free entry to the Zoo.
2) Free entry for the camera.
3) Free issue of the Zoo Newsletter (three issue annually).
4) 5% discount on every item in the Zoo Shop.
5) 20% discount on food items in Zoo Cafeteria.
6) 20% discount on Paddling Boats and Rafts.
7) 20% discount on Elephant Rides.
8) 20% discount on "Fishing Program" at the Zoo every Monday.
9) Participation in "Green Gift" exchange Program (International) through "Friends of the Zoo Eco-club".
Privileges for the Members of ‘Friends of the Zoo’

1. WIMPY, Curzon Marga: 10% discount on food items - Tel: 232299
2. THE BAKERY CAFE, Jambukhali: 10% discount on every food item - Tel: 228689
3. TASTE BITE RESTAURANT, Jambukhali: 10% discount on total bill - Tel: 228699
4. THE FOUNTAIN RESTAURANT & BAR, Lazimpat: 15% discount on food items - Tel: 428748
5. BHANGHIAKHAR, Kamalpuri: 20% discount - Tel: 419280
6. HIM THAI RESTAURANT, Lazimpat: 15% discount on food and beverages - Tel: 412142
7. MIKES BREAKFAST, Nagpokhari: 10% discount on total bill - Tel: 424303
8. K.G. CONSUMER, Basantapur: 15% discount on total bill - Tel: 351679
9. SK-CAFE ROLLER SKATING CENTER, Nagpokhari: 15% discount on all facilities (skating, video games, restaurant, pool & snooker) - Tel: 414262
10. SUITE HOTEL AND HEALTH RESORT, Kasturi, Mahabirgunj: 17% discount to adult & 8-34% to children in swimming only - Tel: 412538
11. CLUB HIMALAYAN, Nagrajpur, Resort: 15% discount on accommodation & food items - Tel: 425893
12. EVEREST PANDORA RESORT, Damaul: Special discount on accommodation & food items - Tel: 414372
13. HATTIBAN RESORT, Pharping: 15% discount on food & beverages - Tel: 220422
14. ISLAND JUNGLE RESORT, RCNP: Chilwin: 25% discount no total bill - Tel: 229116
15. RATNA BOOK DISTRIBUTORS (P) LTD, Bagbazar: 5% discount on textbooks & 10% discount on general book - Tel: 242997
16. SARASWATI BOOK CENTER, Purushwati, Lalitpur: 5% discount on textbooks & 10% discount on general book - Tel: 321599
17. INSTITUTION OF INFORMATION TECHNOLOGY, Pulchowk: 20% discount on computer training - Tel: 241421
18. MEMOREX GROUP OF COMPANIES, Kathmandu: 10% discount on computer & other courses - Tel: 422988
19. SYSTEM SOFT COMPUTER, Pulchowk: 20% discount on computer training.
20. DEBUG VOCATIONAL TRAINING CENTER, Manahan: 10-20% on language & computer training - Tel: 524784
21. COLOR PHOTO SERVICE, New Road: 25% discount on photo processing - Tel: 271367
22. KATHMANDU COLOR LAB, Khichapkhani, Gauribhat: 25% discount on photo processing - Tel: 242155
23. RAYS COLOR LAB (P) LTD, Jambukhali: 15% discount on photo printing - Tel: 242573
24. HORIZON COLOR LAB, Jamal: 25% discount on total bill - Tel: 221088
25. BLUEBIRD DEPARTMENT STORE, Trapnaur & Lazimpat: 5% discount except blue tag items. More than one pen, Crystal & the coffee shop - Tel: 228833
26. ARCHIES GALLERY, Khokana, New Road: 5% discount on total bill - Tel: 283227
27. HALL MARK, Khokana & Jambukhali: 25% discount on total bill - Tel: 220681
28. WEL-COME SHOPPING CENTER, New Road: 10% discount on total bill - Tel: 248167
29. WIZARDS FRESH FLOWER SHOPPE, Kathmandu plaza: 10% discount on total bill except flowers - Tel: 256145
30. FASHION DEN, Lazimpat: 10% discount on total bill - Tel: 418347
31. PARK AVENUE, Patala: 10% discount on total bill - Tel: 240565
32. WEAN CO-OPERATIVE, Kupundol: 5% discount on every item - Tel: 220248
33. HIMALAYAN WOOD CARVINGS, Kirtipur: 10-15% discount on interior & wood carving - Tel: 538321
34. ADY NANDUNIA TAILORING, Bagbazar: 10% discount on stitching & materials - Tel: 229926
35. WOMEN’S SKILL HANDICRAFT, Lazimpat: 15% discount on total bill - Tel: 428597
36. MELODY TIME, New Road: 10% discount on audio cassette & CD - Tel: 247523
37. ISHAN CHILDREN’S NURSING HOME (P) LTD., Maharajgunj: MAIR, Meningitis, Typhoid, Hepatitis B, Antibiotics, Vaccines & Surgeon Charges for children’s operations-10% discount - Tel: 412028
38. ALKA PHARMACY & CLINIC, Jawalakhel: 20% discount on medical check-up, Pathology test & x-rays - Tel: 516147
39. UPACHAR KENDRA (RASHA KUTI ARCAD 2nd FLOOR), Patala: 20% discount on Pathology test. 25% discount on Ultra Sound and Endoscopy - Tel: 470898
40. KRISHNA TENT HOUSE, Mahabai, Lalitpur: 25% discount on rental materials - Tel: 229595
41. KASTHANANDAP TENT HOUSE, Kupundol: 25% discount on total bill - Tel: 337757
42. EVEREST NEPAL DRIVING INSTITUTE, Toku: 15% discount on total bill - Tel: 232187

Internal Zoo Facilities:
1. Free entry to the Zoo.
2. Free entry for the camera.
3. Free issue of the Zoo Newsletter (three issues annually).
4. 5% discount on every item in the Zoo Shop.
5. 20% discount on food items in Zoo cafeteria.
6. 25% discount on Packing Boats and Rafta.
7. 25% discount on Elephant Rides.
8. 25% discount on "Fishing Program" at the Zoo every Monday.
9. Participation in "Green Gift" exchange Program (Internationally) through "Friends of the Zoo Eco-club.

Where the FOZ membership fee goes?

Your FOZ Membership Fee

- Goes Directly towards Conservation Education.
- Extends And it will return to you in the form of
  - Zoo Publications
  - Conservation Trainings
  - Conservation Education Activities
  - Educational Tour
  - Discount and privileges

- Zoo Newsletter (Three issues in one year)
  - Basic Training in Bird Watching
  - Basic Training in Bee Keeping
  - Basic Training in Fish and Aquaculture
  - Essay Competition
  - Quiz Contest
  - Zoo Animal Drawing Competition
  - Zoo Night Safari
  - Royal Chitwan National Park
  - Annapurna Conservation Area
  - Other National Parks
  - 40 Shopping Discounts
  - Free Entry to the Zoo and Zoo internal facilities

Remember: Becoming the member of FOZ You are contributing for the Good cause of Conservation.
FRIENDS OF THE ZOO

The Friends of the Zoo (FOZ) is a public participatory and conservation awareness educational program of the Central Zoo. This program is specially designed for the school students as to involve them in carrying out the objective of the awareness of wildlife conservation.

Every year the Central Zoo organizes a variety of conservation education program for FOZ student members such as: Essay Competition, Zoo Night Safari, Educational Tour to National Parks, Quiz Contest regarding Wildlife, Zoo Animal Coloring and Drawing Competition, Basic training in a) Bee Keeping b) Fish and Aquarium c) Bird watching.

Besides these educational programs there are many privileges to the Adult members and the student members as well, such as more than 40 shopping discounts and many other internal zoo facilities along with free entry to the Zoo. All the privileges are written on the backside of this form. Please keep this part of the form for your information.

### Yearly Membership Fees

<table>
<thead>
<tr>
<th>New Membership Fee</th>
<th>Renewal Membership Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nepali</td>
<td>SAARC Nationals</td>
</tr>
<tr>
<td>200.00</td>
<td>300.00</td>
</tr>
<tr>
<td>500.00</td>
<td>600.00</td>
</tr>
<tr>
<td>150.00</td>
<td>200.00</td>
</tr>
</tbody>
</table>

How to Join:
Fill the attached form with two auto size photos and return it to us with payment. Membership card will be delivered within 3 days. The card is non-transferable and can be renewed every year.

For further details please contact:
KMTNC/ Central Zoo, Jawalakhel, Lalitpur
Phone No. 528323, 528324, 532094, 536079 P.O. Box : 3712
Fax: 977-1-521467, E-mail: czoo@wlink.com.np

MEMBERSHIP FORM

Please (Mark ✓) New Member ☐ Membership Renewal ☐

Type of Membership (Mark ✓) Student ☐ Individual ☐ Family ☐ Membership fee NRs.

Name: ..................................................................................................................
Age: .................................................................................................................
Nationality: .................................................................................................
Profession: ..................................................................................................
Designation: .............................................................................................
Address: ...........................................................................................................
P.O. Box. No. ................................................................................................. Contact Tel. No.

If Student

Name of the school.................................................................................................Class ............. Roll No.

School Address ..................................................................................................

If Family (write the name of other three persons)

1. .................................................................................................................... Relation: .................. Age: ..............
2. .................................................................................................................... Relation: .................. Age: ..............
3. .................................................................................................................... Relation: .................. Age: ..............

If you want to donate: I wish to donate NRs. ...................................................... to the 'Friends of the Zoo'.

For official use only :-

Mc No. ........................................................................................................ Date: ..............
<table>
<thead>
<tr>
<th>Months</th>
<th>Programs</th>
<th>Objectives</th>
<th>Registration</th>
<th>Target</th>
<th>Prog hrs</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>July, 1999</td>
<td>Zoo Newsletter</td>
<td>To make aware about the Zoos activities and Wildlife Conservation</td>
<td>Not required</td>
<td>All members</td>
<td></td>
<td>Will be sent to all FOZ members and others.</td>
</tr>
<tr>
<td>10th August</td>
<td>Teacher's Meeting</td>
<td>To discuss and finalize the FOZ yearly program</td>
<td></td>
<td>Coordinate teacher of FOZ member holding schools</td>
<td>2 hrs</td>
<td>Program discussion and Refreshment.</td>
</tr>
<tr>
<td>October 1999</td>
<td>Zoo Essay Competition</td>
<td>Raise awareness about zoo concept</td>
<td></td>
<td>10 to 25 September, 1999</td>
<td>5 to 7 class</td>
<td>2 hrs Competition will be held on the spot inside the zoo premises. Refreshment will be provided</td>
</tr>
<tr>
<td>November 1999</td>
<td>Zoo animal coloring and drawing competition</td>
<td>To acquaint the students with zoo animals and birds by close observation</td>
<td></td>
<td>10 to 25 September, 1999</td>
<td>1 to 4 class</td>
<td>2 hrs The competition will be held inside the zoo premises. Refreshment will be provided</td>
</tr>
<tr>
<td>December 1999</td>
<td>Zoo Newsletter</td>
<td>To make aware about the Zoos activities and Wildlife Conservation</td>
<td>Not required</td>
<td>All members</td>
<td></td>
<td>Will be sent to all FOZ members and others.</td>
</tr>
<tr>
<td>3rd and 10th December 1999</td>
<td>Zoo Night Safari</td>
<td>To show the behavior of Nocturnal Animals</td>
<td>15 to 30 November, 1999</td>
<td>Above 4 class</td>
<td>2 hrs</td>
<td>Students will have a guided tour of Central Zoo at night. Refreshment will be provided.</td>
</tr>
<tr>
<td>5th to 7th January 2000</td>
<td>Educational tour to NRTC, Chitwan National Park</td>
<td>To give Knowledge about National Parks and wildlife.</td>
<td>15 to 30 November, 1999</td>
<td>5 to 7 class</td>
<td>2 nights and 3 days</td>
<td>The members have to pay 25% of total cost (about Rs. 1000/-)</td>
</tr>
<tr>
<td>March 2000</td>
<td>Educational Tour to ACAP Ghandruk, Pokhara or NRTC, Chitwan/Lamjung</td>
<td>To give field exposure, trekking experience and knowledge about cultural and natural diversity of ACA</td>
<td>15 to 30 November, 1999</td>
<td>8 to 10 class</td>
<td>3 nights and 4 days</td>
<td>The members have to pay 25% of the total cost (about 1500/-)</td>
</tr>
<tr>
<td>April 2000</td>
<td>Zoo Newsletter</td>
<td>To make aware about the Zoos activities and Wildlife Conservation</td>
<td>Not required</td>
<td>All members</td>
<td></td>
<td>Will be sent to all FOZ members and others.</td>
</tr>
<tr>
<td>21st and 30th April 2000</td>
<td>Basic training regarding fish and aquarium</td>
<td>Provide basic knowledge about fish and aquarium</td>
<td>1 to 15 April, 2000</td>
<td>Above 5 class</td>
<td>2 hrs</td>
<td>Training will be held at the Central Zoo</td>
</tr>
<tr>
<td>May 2000</td>
<td>Quiz Competition on Mammals, Birds, reptile</td>
<td>To give knowledge about habitat of different animal species</td>
<td>1 to 15 April, 2000</td>
<td>8 to 10 class</td>
<td>3 hrs</td>
<td>A quiz guide will be provided after the name registration. Refreshment will be provided.</td>
</tr>
<tr>
<td>2nd Sunday of June, 2000</td>
<td>Basic training in Bird watching</td>
<td>To give the knowledge about bird watching and bird identify</td>
<td>1 to 15 April, 2000</td>
<td>Above 3 class</td>
<td>2 hrs</td>
<td>Training will be held at the central zoo</td>
</tr>
<tr>
<td>3rd Sunday of June, 2000</td>
<td>Basic training in Bee keeping</td>
<td>Provide basic knowledge about bee keeping</td>
<td>1 to 15 April, 2000</td>
<td>Above 5 class</td>
<td>2 hrs</td>
<td>Training will be held at the Central Zoo one or more as per the required.</td>
</tr>
</tbody>
</table>

**Note:** The prize will be distributed on a special occasion to all the winners of different competitive programs. Please register the name of participant within the registration date to secure the place.
Volunteer Works
Where FOZ members can utilize their free time for the good cause of Conservation

Information Counter Operate

Work Detail:
Students have to give information from the information counter of the Central Zoo to the visitors regarding the Zoo and other wildlife related matter.

Objective:
To raise awareness through learning by doing.
The students will be able to learn while disseminating the conservation message.

Prog.hrs:
Saturday and Sunday from 11 am to 4 pm.
4-6 days in a month.

Registration:
Office time

Remark:
Required information and briefing will be provided to the students after the name registration.
Tiffin will be provided to the students.
Certificate will be provided after completing 20 hours volunteer service from the information counter.

Zoo animal describe

Work Detail:
Students have to describe on a particular zoo animal to the participant of Zoo night guided tour.

Objective:
To provide basic knowledge about zoo animal species.

Prog.hrs.:
2 hrs at night (5:30-7:30 pm)
2-3 times a year

Registration:
Within the month of Bhadra

Remark:
The program will be held on the month of Mangsir. An orientation class and the fact sheets of zoo animals will be provided to the students after the name registration. Certificate will be provided for good and regular work.

Best Current Wildlife News

Work Detail:
Students have to send current wildlife news to the Central Zoo for the Zoo Newsletter.

Objective:
To motivate the students to learn about what is happening in the world on wildlife conservation.

Prog.hrs.:
#

Registration:
News submission month February, June and October.

Remark:
The best News will receive the prize and name will be published on Newsletter.

Note: The prize will be distributed on a special occasion to all the winners of different competitive programs. Please register the name of participant within the registration date to secure the place.
Guidelines for Starting a Friends of the Zoo

If you want to really help your zoo don’t wait to get organized or registered. Even if there are only 1 or 2 or 3 of you, you can make yourself useful in many ways. The important thing to remember is REALLY to make yourself useful — to provide solutions and not problems for the Zoo Director. Meet the Zoo Director and get his cooperation and suggestions. He knows best what the zoo needs most from volunteer helpers. What you think may be helpful may be in fact making more burden for him. Let him decide what you should do and what privileges (like free admission) will be allowed. If you have friends who know the zoo director who can vouch for your seriousness and sincerity, get an introduction.

Here are some slogans to help you remember to stay on course:

1. Live and Let live
The best policy is to adopt a positive and constructive approach, without complaining against or criticising the zoo management. Things at your zoo may indeed be wrong but if you and your friends go there with knives and sickles, your chances of staying and accomplishing something are very slim. Moreover, not having worked in the zoo you will not be aware of many of their problems.

People tend to become fanatical and hysterical about animals. If you allow your members to start complaining in a meeting about, say, a certain badly constructed enclosure, in short order they will have taken apart the entire zoo, meeting time will be over and once again NOTHING WILL HAVE HAPPENED (but talk, talk, talk).

Instead, nip all that bad talk in the bud and discuss projects you can do. Your enthusiasm, energy, and interest can ultimately build up a great deal of good will and lift the morale of the whole zoo.

So,

2. Easy Does it
Be a little careful. We found that didn’t know as much as we thought we did. Just because you love animals and know a little about wildlife doesn’t mean you know how to run a zoo. Wildlife management and zoo management are very different. Read some books about zoo-keeping before you start telling the zoo people how to run the zoo!

Recommended reading:
Heidigger, Hein: : Man and Animal in Zoo
Durrell, Gerald: : The Stationary Ark
Cherfas, Jeremy: : Zoo 2000
Tongren, Sally: : To Keep Them’re Alive.

3. Keep it Simple
Part 6 : Who -- Help with Zoo Education

Do some simple, straight-forward, easy projects first to get your group oriented and to gain the confidence of the zoo staff. There is plenty of time later for complex research projects.

4. First Things First
Get permission from the zoo officials before you do anything. Then, see what the zoo needs most that is within your immediate abilities. Zoo patrol to stop teasing and vandalism is a good starting project as is important to the zoo, requires no practice or training, and costs nothing.

Another simple project is providing attractive sign-boards about the habits and habitat of the animals and warning against teasing.

5. What can’t be Cured Must be Endured
There are many things which you will not be able to do or change - at least overnight. Thus it is a test of your creativity to work within that context and make the best of a bad situation. Bad habits die hard. It will take a whole generation of education before the mass of people will stop feeding or teasing animals.

Often you won’t be able to correct a situation entirely but you can mitigate its results. For example, you may not be able to convince all people to stop throwing plastic popcorn bags in animal enclosures. But you may be able to start your own popcorn sales using attractive biodegradable paper bags and cut down on the hazard.

6. Action is the Magic word
Do something! Don’t just sit around and gas about what’s wrong and what you could do if you had money or permission. There is plenty you can do NOW.

The following list of projects may give you some ideas:

1. Zoo patrol to prevent teasing and vandalism.
2. Guide service for school groups and helpers for elderly.
3. Cage cleaning squad to help clean cages and learn routine so you can help in emergencies like strikes, holidays etc.
4. Branch, log and toy collection: Collecting branches for porching and logs for claw-shapers for the cages. Also rubber tires make good swings and toys for many animals.
5. Making signboards for enclosures and giving directions: Cage decoration - making cement enclosures look more natural by adding dry leaves, branches, potted plants.
7. Research : Observing behavior for specific reasons - ask the veterinary doctor and the Curator for what they need.
8. School lecture programme : Go around to schools and give a simple slide programme on zoo animals and their importance in the wildlife preservation and conservation movement. Emphasize correct zoo behavior and how to learn at the zoo.
9. Help make a map or brochure of the zoo for sale to public. Give it to the zoo at your cost and let them sell it for whatever price they see fit.

10. Office "gopher": Offer your services as "gopher" to the Director. He may need someone to go and gather estimates from printers for his zoo brochure, or to do some simple filing or search through the International Zoo Yearbook for articles on a particular species. Be willing to do any job to gain his confidence.

Do not become discouraged, angry or frustrated if the zoo management is not wildly enthusiastic about your presence. Or visitors also. Many visitors don't want zoo guides, for example. For some reason no one understands, people have had a tendency to merely use and abuse the zoo and zoo authorities. So management over the years naturally has become suspicious - they have experienced public participation in two ways - (1) People who come to make money off the zoo (with no credit or advantage to the zoo); and (2) people who come to criticize the way the zoo is being managed.

It is better not to ask the zoo for anything except permission to help. It may not be necessary to maintain this rigid stand forever but at first you must establish your credibility and demonstrate your degree of commitment. New organizations are sometimes unable to keep up commitments - so don't take a chance of failing with public money.

Don't go for money ... grants, donations ... right away. First, set the tone of your society as an innocent committed grass-roots movement. Let the people take personal responsibility for their institutions. There are so many things you can do on the small funds and supplies you collect from among yourselves and then you can operate unfettered by restrictions and organizational obligation. You can elect officers who are really interested in the work and not people who think there is money to be had.

It is good to cooperate with all other organizations interested in the same things but affiliate with none. A zoo society has its own emphasis, therefore it is better to keep it completely separate from all other causes and movements no matter how seemingly worthy or compatible.

You can take donations and or set up memberships, but make it crystal clear from the very beginning that a Rs.5 and Rs. 5,000 donation has the same meaning. Don't give a big donor undue importance. Be a social service organization, not a country club.

You should make it clear from the first that your group is a service organization which exists for educating the public and helping the zoo. Let no one of your associates or members become annoyed later at the lack of privileges they get. Make it very clear that the society exists for the zoo and not the other way around.

Some members will also expect you to offer facilities like huge highly subsidized organizations such as World Wildlife Fund. Make it clear to people that you are a new society and that the best thing you have to offer is personal satisfaction for a job well done.

Finally,

If the administration at your city zoo is really hostile and uncooperative from the start, try and adopt a charitable attitude. There could be many good reasons for this but the most likely is that the administration had had bad experiences in the past with the public "helping".

In such cases do not become angry or hostile in retaliation. After all, you want to work for wildlife. In this case part of the work involves acquiring the trust and confidence of a zoo administration which has been hurt in the past.

You can still help even without cooperation. Simply concentrate on the audience outside the zoo, such as schools, civic groups, etc. Call yourselves a wildlife group but promote the zoo as an adjunct to wildlife preservation and teach about correct behaviour in the zoo and the animals there. If you are sincere in your efforts the zoo administration will learn that not all public help is like their previous experience.

Some potential Potential Pitfalls

Live Animals
Our experience suggests that it is better NOT to ask for projects involving like zoo animals. It can lead to misunderstandings that can set back your efforts and even destroy your organization. Your intentions may be excellent and even your handling methods may be entirely correct...but if the animal dies or hurts someone, you'll be in big trouble. The animal may have died anyway but if it dies under your care, you are vulnerable not being a zoo employee. And if the zoo staff is under fire, don't expect them to stand by you, even if they asked you to help in the first place. Remember, this is a past time for you, but its their career. If the Director wants you to help with live animals, insist that a keeper always be with you.

Relationship with Keepers
Speaking of keepers, many volunteers have a tendency to think that just because zoo keepers are uneducated they don't know as much about animals as the volunteers. The Keeper may not know, indeed, what you know about the status of the animal in the wild or its ecological significance. However, he very certainly knows much more than you about his zoo animals and their individual habits. You can learn from him.

Volunteers who display a superior or condescending attitude towards keepers really lose a valuable opportunity. You fail to learn what he knows, and by alienating him you lose the chance to teach him what you know. It is better to remain on good terms with the keepers.

At the same time, don't get too close. Many zoos have labor problems also. Be mindful of this and don't get involved in such things. One zoo society in India failed because volunteers carried keepers complaints to the management and "advised" the Director to give his keepers more salary! So be friendly but don't take sides.

Part 6 : Who -- Help with Zoo Education
Another Society was badly hurt by a member giving money to keepers for allowing him inside enclosures and saving bird feather for him.

Misbehaviour of Volunteers
Some Zoo Societies in India have made a bad name for themselves due to bad behaviour by volunteers who are not sincere. There will always be someone in the administration who doesn’t care for having volunteers around. The misbehaviour of even one or two can be blown up by unfriendly staffers and spoil the good work of many sincere and hardworking members.

Therefore be very tough on your volunteers and let them know they must be on first class behaviour.
- Do not allow boys and girls to work together alone even if they are not up to anything it doesn’t look nice.
- Do not entertain members who buy wild animals to keep as pets.
- Eject volunteers who bribe keepers for animal products such as bird feathers and animal teeth and claws.
- Discourage members who “tell tales” outside the zoo.

Zoo management has its own difficulties. Moreover inexperienced persons can grossly misinterpret things they don’t understand. One of our members went around saying the zoo had made a bad deal by exchanging big nilgai for a pair of Lion Tailed monkeys, because the nilgai were big animals and the monkeys small! In this way many uninformed people got a very wrong idea.

Part 6: Who — Help with Zoo Education
NEVER TRUST A REPORTER
GETTING THE BEST HELP FROM THE PRESS

Zoo Educator Workshop 9 August 2000

An exercise was conducted at the South Asian Zoo Educator Course to “Meet the Press.” Relations between Zoo Directors and the Press are frequently very bad. In Central Zoo, Director R. K. Shreshtha had a very good relationship with the Press. Reporters came with very good will and a request by us to be tolerant of zoo directors whose press might not be so generous.

In order to stimulate a lively discussion, a short and somewhat provocative presentation was given by Sally Walker entitled “Walker’s Rules for dealing with the Press”.

1. NEVER trust a reporter
2. NEVER allow your photo (or even your name) to appear in the press
3. NEVER apologise -- for anything
4. NEVER waffle. Say confidently “I don’t know”
5. NEVER lie. (unless you are dead sure you won’t be caught)
6. NEVER lose your temper
7. NEVER refuse to speak
8. ALWAYS provide (carefully) written information.
9. ALWAYS let your superior officer or (Department) take credit
10. ALWAYS call them (the press) before they can call you (particularly for a “bad news”, if at all possible.
11. ALWAYS be courteous – no matter what.
12. ALWAYS be armed with some good, factual information, i.e. number of zoos in your country, the world, nice stories about your animals (the World Conservation Strategy is a good source of information)
13. ALWAYS praise your superiors and subordinates in press

Writing a Press release: Pointers for pleasing all Media
1. PROVIDE COMPLETE INFORMATION
   who what where when
2. Keep the item of LOCAL interest (but you can bring in foreign contacts)
3. Rephrase information for different media
4. Use a quote if possible. Quote your boss. Have one spokesman for the zoo.
5. Type everything you send.

6. Give name, address, phone, etc. of local contact there are questions.
7. Build up interest with advance news and background information.

KINDS OF MEDIA
Different types of media require different types of information
   Radio
   TV
   Newspapers
   Magazines

KINDS OF NEWS
1. ANNOUNCEMENTS - of general interest programmes and activities to which the public are invited
2. HARD NEWS - Something specific happens, i.e. a birth, a death, an acquisition
3. FEATURES - Articles background, profile (animal or human), general

POINTER FOR SPECIFIC MEDIA
NEWSPAPERS
Press release of item
Can be longer than radio but not too long
If your press item is too long they will edit it; this can lead to BAD mistakes
Photos: inclusion of a good photo almost guarantees inclusion of a press item.
Rules of thumb for length:
   Hard news item - 1 page, double spacing
   Announcement: 1/2 page, d.s.
   Feature: 3-5 pages, d.s.

T.V.
Should be visually interesting and SHORT
T.V. time is costly; each second is gold
T.V. is visual; must SHOW something

RADIO
Should be short and snappy
Radio is audial so try and paint an audial picture of most important items; bring a vocal animal if possible
Seconds are a long time on the radio
Rules of thumb of radio speaking time
   10 seconds = 25 words
   20 seconds = 50 words
   60 seconds = 150 words
Interaction between zoo personnel and press personnel

Zoo Person: Frequently, in press we see reports by a correspondent who has written an article without visiting the zoo or consulting the zoo officials.
Press person: This is a wrong. If this happens, call up the reporter and discuss the issue or report about him to his Editor.

Zoo Person: But the complaints from zoo personnel in the government should go through the right channels and not directly to the press?
Press person: You can talk to the chief reporter/editor at PTI or UNI. Or you can even send a letter.

Zoo Person: If some wrong news was published, the corrigendum that appears in the next day gets very little exposure and is relegated to the last page.
Press person: I agree. Some press people do not understand the importance of this news. It is editorial weakness.

Zoo Person: If an animal dies, the news appears on the first page. But if there is a birth in the zoo, it is not given as much importance. Is it that news coverage is for sensational items only? There is more emphasis on the negative aspects rather than positive aspects that happen in a zoo.
Press person: Readers like sensational news, not good news.

Zoo Person: There should be a special fund to entertain press people. We have to spend a lot of our personal money to wine and dine press people often.
Press person: That is not right. Entertain the press by supplying news, not entertainment.

Zoo Person: But the press makes direct demands for entertainment. If not, the impact is negative.

Press person: This should not be encouraged and should be corrected.

Zoo Person: There are more bad people in the press than good. Some newspapers are good but eveningers cause problems.
Press person: Always give in writing. Otherwise the information will be misunderstood and twisted. Also distorted information will get corrected in a competitive press.

Zoo Person: Whatever a zoo person says, the press highlights only the bad points.
Press person: If there is no big news, press do make up news. Unco-operative/inaccurate reporting is propaganda. There is an ongoing debate within the press circle on this issue. We agree that the press is not problem-free.

Zoo Person: There is no accountability with the press personnel, whereas zoo personnel are accountable.
Press person: That is not true.

Press personnel are also accountable. Propaganda is not considered journalism and there have been instances of press correspondents being fired.

Zoo Person: I have had 12 years experience dealing with the press, but until now no Pakistani press person has been fired.
Press person: I do not know of Pakistan, but it is not so in Nepal.

Zoo Person: What is the solution for such conflicts?
Press person: Contact the Press Trust of your country, like the Press Council of Nepal.

Zoo Person: Press authorities are a community and support each other.
Press person: Find a remedy. Have more talks with the press.

Zoo Person: Zoo is a place of living things, not a museum. So anything can happen to the animals, which is quite natural in such a situation.

Getting the Best from the Press
Press person: The press usually follows the principle of reporting in a way that is sensational in headlines but balanced in content. The press is a watchdog and speaks for others. Justice is usually done, but one has to wait and bear with it.

Zoo Person: If a wrong report is printed can it not be corrected at least on a personal level?
Press person: In some cases it is done. But journalism is slowly moving towards professionalism.

Zoo Person: One newspaper reports something good one day but is followed by a wrong news the next day by another press.
Press person: That is not reporting. There is also professional jealousy, which can come in the way of good journalism.

Zoo Person: To avoid such a situation we should send a press release to all newspapers, not one or two.
Press person: That is the compulsion of a competitive market.

Zoo Person: We cannot eliminate tension between press and zoo personnel. I have had the experience of releasing a press information to 8 press people, but it was printed in 8 different versions the next day. Always fax late afternoon. Fax by name plus cc to others by name in the office.
Press person: Have more contact. Give more information about the background details of your institution to the Press. Never take the Press for granted.

Zoo Person: If somebody does not want to talk to the Press, the press become suspicious.
Press person: Every institute should have somebody to talk to press all the time. The press has to contact somebody. By its nature, the press just cannot keep quiet.

Zoo Person: The Press does not spare people the time to do their work. During the tragic tiger deaths incident in India, the press were actually interfering with the zoo to solve the problem of tiger deaths.
Press person: This is crisis reporting. Maybe the press people were not happy with some official in the zoo and sometimes tend to take revenge.

Zoo Person: After the tiger incident in India, any small information is reported including even unimportant things.
Press person: If tiger news is not reported, nobody might benefit. If published, the tiger will benefit. There should be supply of information and frequent talks.

Zoo Person: Zoo officials (Director – keeper – vet) are at a crossroads. Reporters should not exploit these situations.
Press person: The reporter should be reliable. Be friendly and not rude with the press.

Sample Press release session
Participants were given a “situation” for writing a sample Press Release. These were handed over to the press persons for comments.

Situation 1 for sample press release
Time: 11 pm. During the day, a white tiger gave birth to three perfect cubs. The Press have been informed. The watchman notices the cubs dead. The mother is distraught. The cubs appear to have died of giant rat bites, clearly suggesting a management mistake. It is only a matter of an hour or so before the press shows up. What do you do?

Situation 2 for sample press release
Same situation as above except in this situation it appears as if the mother has eaten the cubs. What do you do?

1. Do you go back to sleep and pray it was a dream
2. Go to the zoo, lock the gate and take the phone of the hook
3. Refuse to speak to press
4. Write a press release and send it immediately to all press.

Situation 3 for sample press release
The birth of 3 valuable white tiger cubs this morning has been over-shadowed by the unfortunate death of these cubs through the bite of rats. This is a hazard which, although unusual is by no means unknown in wild animals which are brought into close contact with human habitation.

The cubs were discovered already dead. So, no
preventive action could be taken. However, post mortem examination is being done and the results of these will be released as soon as available.

The cub's mother is quite nervous and distraught. So we appeal to the press to refrain from harassing the tiger by crowding around her cage for photos/pictures.

While not in any way defending this crisis, we would like to state that rats are natural predators of young and helpless animals so we will take appropriate steps to try and eradicate the rats from these areas to prevent a repetition of this tragedy.

Humayun Taher
Madras Crocodile Bank

Press Release
In carnivores we have observed some specific & amazing behaviours, among these behaviours is canibalism. Due to certain reasons the carnivore species eat up their own cubs. I think this behaviour also controls the population of some wild species which are increasing from the threshold level.

We had inducted a white tiger last year and had given very good enclosure. Yesterday on 8th August 2000 our tigers have delivered three healthy cubs but unfortunately due to the canibalism behaviour in carnivores species the tiger has canibalised her cubs. This is not abnormal for a first birth.

M. Mansoor Qazi
Karachi Zoo

Press Release
Ahmedabad Zoo is having only one male White Tiger which is 15 years old and is very popular among visitors. We brought a normal coloured tigress carrying the gene for white colour as a mate for this tiger. The mating was successful and three cubs were born yesterday. However the mother has littered for the first time, and lacking practical experience in motherhood, she has eaten the cubs. This is not uncommon in carnivores and particularly in captivity and in a first birth.

R. K. Sahu
Ahmedabad Zoo

Press release
Today morning I was informed by the Director that a White Tiger delivered three cubs and it was the first occasion of tiger bred in our zoo. At 11 PM it was noticed by the veterinary doctor at the zoo that three cubs died because of rat bites. This is due to inexperience of the mother. Such an incident is not common in our zoo. I would be grateful to you, if you could kindly publish the news on factual basis as this was a tragic accident.

V. Kalaiarasan
Chennai Snake Park

Press Release
It is very sad to inform you that the 3 white tigers cubs born today at 11 PM have died because of bite of the giant rats noticed on location. Management had made all arrangements and managed all possible means to save these very important cubs.

Unsigned

Press Release
The Lahore Zoo authorities are extremely dejected to inform that the 3 white tiger cubs which were born a day before died last night due to the maternal negligence which is a major cause of 37% infant mortality in large cats, according to the studies conducted by the San Diego Wildlife park. Due to the negligent behaviour of the mother the unattended cubs were killed by rats inside the den. The zoo is taking precautionary measures to control the rat population inside the zoo premises.

Director of the Zoo
Tel: 6314684

Press release
Death of three tiger cubs:
White tiger gave birth to 3 cubs on 08.08.2000 watchman informed that all 3 cubs were found dead due giant rat bites.
The Director immediately visited the site and confirmed that the were cubs are dead. Next morning Post Mortem examination conducted by a veterinary officer and found that cause of death was due to severe injury and shock caused by predator rats. The Director immediately issued instructions for filling the gap of the cage and destruction of predators through proper eradication so that this incidence would not happen in future.

Dr. M.A. Salam & Dr. Ganesh K. Dubey

Press Release
Office of the Zoo Officer Gandhi Zoological Park Gwalior: Last night at 11 pm the Zookeeper informed me on telephone that 11 tigers died due to unknown cause. On reaching the zoo called the team of veterinary doctors from nearest Veterinary college and Hospital to assist my veterinary doctors to know the cause of the death of the tigers.

Dr. Pradeep Shrivastava, Zoo Officer
Gandhi Zoological Park, Gwalior

Part 6: Who -- Help with Zoo Education

Getting the Best from the Press
Part 7

Fundraising and grantwriting
Funding Education Projects

In the South Asian Zoo Educator Course, in describing their zoo situation, most participants indicated that they did not have either a designated education officer or an education budget. Therefore several presentations on funding were given, one by Sri R. K. Shreshta about the fundraising strategy of Central Zoo, by R. Suwal, in reference to the Lumbini Sarus Crane Sanctuary, an ECCA representative in reference to marketing strategy, and by S. Walker on fundraising outside the region from foreign sources, from non-traditional local sources, the latter consisting of simple tips specifically for education projects in zoos which had no education facilities. A presentation was given on budgeting for education and one on proposal writing.

Participants were given two funding formats (also reproduced here) and requested to draw up a funding proposal for submission to a foreign zoo or conservation organisation by the course organisers. They were not constrained to any particular subject matter except zoo education (which could be related to a field conservation project) so it was gratifying to see that most participants selected subjects which had been presented in the workshop.

These proposals have been edited and reproduced here. They will be further edited and submitted to zoos and conservation NGO’s in USA and UK for consideration.
Fundraising
Sally Walker

For almost everything we can imagine to do in the zoo, the same obstacle comes up -- funds. It takes additional funding to conduct almost any activity. Finding money is not impossible but you have to really work at it. For small, underfunded or government zoos, in particular, which don't have a marketing department or gift shop, the task can be formidable. Government zoos often get their funds directly from the government which covers the basics - feeding, infrastructure, staff, etc., but a zoo is more than basics. In many zoos, Education is not even considered a "basic" and zoos are on their own as far as the education "budget" goes. Sometimes rules do not permit accepting money from any source (particularly government funded zoos) and accepting money from foreign sources is banned in some countries.

Listed below are some "rules" of thumb for finding funding.

Some Rules of Thumb for Finding Funding:

1. It costs money (and time) to find money Have a strategy or you will waste your time (and money) thus exacerbating the problem rather than solving it!

2. Research your subject Find out where money is and if there is a protocol for asking. There may be rules or guidelines and a format for applying, particularly for specific funds. In other situations, asking donations may be a simple request or a long procedure.

3. Be positive Confidence is all-important in fundraising of any kind. Know that you are good, that you deserve to be funded. Have faith in the worthiness of your cause -- conservation education.

4. Put yourself in their (donor's) place. Imagine you are the donor. Try and speak to their needs and constraints.

5. There is no "free lunch" Often when accepting money for a project, there are strings. Don't be surprised! Try and find out if there are hidden conditions. It may not be worth it. Such conditions may include special privileges at the zoo, advertising a product that is not environmentally friendly or doing something that is not so good for the image of your zoo.

Some Questions to Ask Yourself First.

1. Can your institution accept money directly?

2. Is your institution eligible for tax deductible status?

3. Can you create a separate organisation? (Such as a zoological society or Friends of the Zoo which in unencumbered with governmental regulations and could limit itself to an education programme for the zoo.)

4. What do I need? (You may need "in kind" donations more than money. If so, some of your problems indicated in the questions above could be solved.)

5. Is it worth it? (No free lunch. What is the price of the donation?)

6. Can you maintain your institutions' integrity; your personal integrity? (Your institution is teaching people simply by existing and what you do conveys the most powerful message. If you talk conservation and don't exemplify it by how you act, you have defeated your purpose).
Some Local Sources of Income and Materials

Small Shops and Businesses
You can collect lots of small amounts from small shops and businesses which will add up to what you need for an education project. Sometimes these small companies appreciate being included by a zoo or conservation organisation if they get a little publicity and the amount is what they can afford.

Publications and Souvenirs
Many businesses have an advertising budget with which they can cover any type of ad. They don’t mind spending this money as it is tax deductible. Periodicals, education material, etc. can be funded this way. Also putting together a “Souvenir” for an educational event can bring in a lot of money to cover other aspects of the event and also provide conservation education material for the participants of your event.

Sometimes small businesses (such as print shops, etc.) will do your printing free or at a good discount in exchange for an ad on your educational material. Simple souvenir items (as opposed to printed Souvenirs) also might be donated (keychains, etc.) which could carry a conservation message on one side and the donating company’s ad on the other.

Absorption of other Expenses
Sometimes big, generous companies can put a staff member on their own payroll. The company pays the salary but the staff person works for you. Companies that have rules about giving outright donations are often willing to help in these ways.

Find out where goods are stockpiled
Sometimes paper, pencils, consignments of lumber, card, etc. are simply taking up space and can be had for the service of carrying them away. Sourcing such items is time consuming but at least know about it so that if you hear of something, you can scoop it up!

‘End of Financial Year’ Problems
These can be a solution for you. Sometimes government departments are left with money at the end of the year that they have to spend or it reverts back to government. At those times a Conservation Education Project looks good to them, where it may not have done earlier in the year! Be aware of these situations as they are potential gold mines.

In so many of these tips, someone’s Problems are your Solution. Be alert – you can help them and yourself if you think creatively and opportunistically. Be an entrepreneur for your zoo.

Some things that are true for all countries

1. Money is available; it is just a matter of finding out who has it and how to get them to part with it.

2. Everybody wants to “look good” and get something out of what he gives. Always make the donor look like a hero and see that he gets something (even a letter, free admission to the zoo, a certificate, a photo).

3. Laws and loopholes in laws (particularly in relation to income tax) create situations which can be (legally) exploited by charitable causes.

4. Materials and services are as good as hard cash. Often businesses will be far more generous with goods and services than with money. This is both psychological and practical, depending on their accounting system.

5. People personalised what they invest in. Convincing people to donate something to the cause is sometimes more valuable in creating awareness of the cause and good will for your institution than the actual donation.

Part 7: Fundraising & grantwriting

Finding funding
Education Budget -- One Year’s Programme

In planning a Zoo Education Programme you will need the following basic items.

Staff  Education officer(s), guides, volunteers bata, artist, driver, etc.

Signage  Visual, interactive

Publications  Brochures, Leaflets, Guidebook, etc.

Equipment  Audio visual, Slide projector, Video, Films, Silkscreen unit, Loudspeaker, DTP Computer, Graphics software, etc.

Transport  Van, Jeep -- on hire or outright purchase

Communications, Phone, Fax, postage

Conservation Fund Application (an American zoo) Format
Name:
Affiliation:
Phone No:
Check payable to:
Mail to:
Title of Project:
Geographic location:
Amount requested:
Description of Project:
Amount requested:
Field Contact Person(s) and Affiliations:
Other sources of Financial or Technical Support:
Financial:
Technical:
Project Goals:
Methodology:
Benefits to Indigenous People:
If an ongoing project, what result to date:
Intent to Publish? Where and When:

A Conservation Fund (British Zoo) Format
Title of project/funding initiative
Dates/duration
Total budget
Amount requested
Project aims
Goals so far achieved
Conservation/welfare relevance
Local involvement/support/benefit
Expected outcomes
Project monitoring/evaluation
Proposal for Funding
Muhammed Mansoor Qazi, Karachi Zoo, Pakistan

Ex situ Conservation of Cheer Pheasant

We have prepared a plan for the *ex situ* conservation of Cheer Pheasant.

**Background:** Cheer pheasant was once found plentiful in the Margalla Hills situated near Islamabad in Pakistan. But due to urbanisation, colonisation, hunting, poaching and jungle cutting in this area this beautiful species completely vanished and became top of the endangered species list of IUCN and now we have only 200 numbers in the natural environment of Cheer pheasant and 10 pairs in Islamabad Zoo. *Ex situ* conservation of this beautiful species is necessary.

**Duration:** 1 year

**Total budget:** Rs. 50,000/-

**Amount Requested:** Rs. 50,000/-

1. Incubator (1 No.) Rs. 20,000/-
2. Brooder (1 No.) Rs. 5,000/-
3. Literature and Signage Rs. 25,000/-
**Total** Rs. 50,000/-

**Project Aims:** Marghazar Zoo, Islamabad, provided us with five pairs of Cheer pheasant. We have a number of cages for captive breeding in Karachi Zoo which fulfill all the habitat requirements of a species. We will fire the glass in front of one cage and place the incubator and brooder. This will enable us to exhibit the whole activity of hatching and brooding easily. One keeper will educate the general visitors, students and researchers about the whole procedure of hatching, breeding habits, feeding and development of hatching.

**Goals so far achieved:** We have good pheasantry, laboratory and quarantine facilities along with sufficient skilled staff. We are successfully breeding other pheasants of different species also.

**Conservation/Welfare relevance:** This project is relevant to the conservation activities of birds in South Asian region and found at the top of the list of endangered species of IUCN Pakistan.

**Local involvement/Support/Benefits:** With the support of local people who live in the vicinity of Cheer Pheasant forest area, we hope to achieve our goals in the expected time. For the education of these peoples some signages and literature in local languages is required.

**Expected outcomes:** Achievement of our goals of *ex situ* conservation of Cheer Pheasant with right efforts.

**Project monitoring/evaluation:** We have sufficient skilled staff for the proper monitoring of this project/evaluation.

Part 7: Fundraising & grantwriting
Proposal for Funding
Central Zoo staff, Central Zoo, Nepal

Conservation of Freshwater Dolphin

Country: Nepal
Location: East of Nepal, Koshi River
Implementor: Central Zoo, Kathmandu
Duration: 12-18 months (Project period)
Implementing date: 2001
Principal investigator: XYZ
Estimated Budget: US $ 2000/-
Date: August '2000

Objectives: Within the whole country currently, with respect to Freshwater Dolphin, not more than 20 to 30 individuals so far recorded. (10-15 in Koshi and 5-10 in Karnali river, West Nepal). It has therefore been quite urgent to preserve the eco-system of dolphin from this part. Therefore there is a requirement of:
1. Educate the people living around to its value and importance and its contribution to river eco-system
2. Investigate the possibility for captive breeding economically and technically.
3. Finding the causes of its depletion and measures for protection.

Output: Timely undertaking of the project would be instrumental in preserving the animal from its extinction

Technical Source: Lahore Zoo

Funding for:

a. Principle investigator-1
b. Support staff – 3
c. Total 4 US $ 1200.00
d. Equipment 400.00
e. Transport 200.00
f. Others 200.00
Total 2000.00

Contact person:
Address: Kathmandu, Nepal.
Proposal for Funding
Dr. Narayan Chandra Roy, Rangpur Zoo, Bangladesh.

Conservation of Gharial in the River Tista

Dates/Duration: January 2001 to December 2001

Total Budget: Tk 56,000/- only

Amount requested: Tk 56,000/- only (i.e. 1000 US dollars)

Project aims: For welfare of the wildlife especially for reptiles for conservation of long snouted crocodile or gharial. The Gharials are fish eaters and an endangered species of reptiles. Very often they are hunted by the fishermen of the river Tista during fishing. The aim of the project is to create awareness among fishermen not to hunt the gharial.

Goal so far achieved: Not achieved due to lack of funds.

Local involvement/support/benefit: By supports of the existing staff, benefit of the project is to conserve the gharial, to develop awareness of the fishermen of the river Tista.

Expected outcomes: Develop awareness of the fishermen that they might not hunt gharial as the gharial is very important for conservation of nature.

Project monitoring/evaluation: Awareness of the people.

Budget: for posters, vehicles.

Methodology: I will contact the fishermen of the river Tista where they fish to spread the message as not to hunt the gharial as it is one of the endangered species of our country and they are essential for maintaining the ecosystem. A lecture can be given to the fisherman several times in different batches.

Following information are given to the fisherman to avoid hunting of gharial:

i. The gharial is usually found within 15 to 20 feet depth of water. So avoid their area for fishing.
ii. Throwing of dead fish in water
iii. Throwing of big stones into the water.
iv. Stones skimming across water.
v. Avoid using gharial habitats.
Proposal for Funding
Dr. M. Shahidullah, Dhaka Zoo, Bangladesh

Zoo Education

Title of Project: Zoo education project of Dhaka Zoo, Bangladesh
Duration: 7 September 2000 to September 2001
Total budget: 1000 US. Dollar = TK 55,000.00 Local Currency
Government of Bangladesh provides = + TK 55,000.00 Local Currency
TK 1,10,000

Amount requested: 1,000.00 U.S. dollars
Project Aim:
   a. Zoo education can be imparted to visitors, student and other specialised groups
   b. Putting boards on some enclosure as right now few sign boards remains.
   c. Printing educational materials brochure, map etc.
   d. Warning boards
   e. Environment and ecology information boards.

Goals so far achieved:
The paper work has already been done.

Conservation:
Welfare relevance: Awareness of people by Zoo education.
Local involvement: Government of Bangladesh.
Expected outcome: Awareness of people about wildlife and nature conservation.
Project monitoring/Evaluation:
i. 30 sign boards have been put up in several enclosures.
ii. Two loud speakers warn more than two thousand people.
iii. creates awareness in about ten thousand people.

Budget provision:
i. Fixation of new signage - Tk 35,000 - 35 signage at Tk 1,000/-
ii. Development of brochures - Tk 20,000/-
iii. Purchase of two loud speakers - Tk 20,000/-
iv. Preparation of educational materials - Tk 15,000/-
v. Training materials for Zoo Volunteers - Tk 15,000/-
vi. Transport - Tk 5,000/-
Total- Tk 1,10,000
Proposal for Funding
Dr. Jayanthi Alahakoon, National Zoological Gardens, Dehiwela, Sri Lanka

Proposal for elimination of Poly-bags from National Zoo, Sri Lanka

Funding initiative: ‘Please save us from Polythene’ – printed in Brown paper bags and exchange with polythene bags brought in by the visitors to the Zoo at the entrance.

Dates / duration: 6 months

Total budget: Sri Lankan Rs. 79,000 (US $ 1000)

Amount requested: Same as above

Project aims: To make visitors aware of the harm/damage caused to animals by polythene bags if not properly disposed.

Goals so far achieved: None due to non-availability of funds.

Conservation/ welfare relevance: Large number of zoo exhibits die due to impact of polythene bags and most of them are threatened and endangered.

Local involvement/ support/ benefit: Awareness programme by the Education officer and by "Friends of the Zoo"

Expected outcome: Proper disposal of the polythene bags and spreading this message to the visitors of the end.

Project monitoring/ evaluation: This could be done by statistics of Post Mortem reports

Part 7: Fundraising & grantwriting
Proposal for Funding
Dr. Pradeep Shrivastava, Gandhi Zoological Park, Gwalior

**Education programme to promote correct procedure of Nag Panchami Pooja in Gwalior region**

**Location:** Gwalior M.P. India (77 25', 70 26')

**Amount requested:** 1000 US dollars

**Description of Project:** Educating people about the harmful effects of Nag panchami on snakes in the name of religion

**Field contact person and Affiliation:** Dr. R.J. Rao and S.O.S. in Zoology, Jiwaji University, Gwalior.

**Other sources of Financial-Technical support:** Nil (We are not targeting any other support for this project).

**Methodology:**
1. By poster presentations
2. By video film presentation in local language as well as in hindi.
3. By slide shows
4. By directly talking to people
5. We can educate the people about the real Hindu mythology which will allow people to get the religious significance without having to harm the snake.

**Benefit to Indigenous people:**
1. Saving crops from rodents
2. Stop killing of snakes for wrong purposes.
3. Change the idea that killing snakes bring good luck.

**Result:** Project not yet initiated

**Intend to publish:** Publication will be done in local newspapers, Zoos' Print and herpetological publications.

**Project aims:**
1. Hundreds of snakes are killed during and after Nag panchmi due to lack of awareness of natural behaviour of snakes by Hindu in Gwalior region.
2. Crop destruction by rodents due to removal of rodents that are biologically controlled by snake
3. Disruption of natural breeding cycle of snakes because of such killings occurs in their breeding season.
4. Intention to educate people about the correct procedure of religious practice.

**References:**
1. News cuttings
2. Photograph

**Abstract:**
During the Nag panchmi in the Sravan month in Hindu religion, hundreds of snakes are caught by snake charmers for religious purpose. These snakes are given milk to drink by Hindu ladies on occasion of Nag panchami. To prevent injury to the devotees the snake charmers stitch the snake’s mouth. Because the diet of snakes consists of insects, rodents etc. the milk which they are forced to drink causes severe health hazard due to which they die within 10 to 15 days after Nag panchami.

**Budget:**

<table>
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<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
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<td>Preparation of poster</td>
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<tr>
<td>Preparation of sticker</td>
<td>10000.00</td>
</tr>
<tr>
<td>Videofilm making</td>
<td>10000.00</td>
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<tr>
<td>Slide Preparation</td>
<td>5000.00</td>
</tr>
<tr>
<td>Expenses on propaganda</td>
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<tr>
<td><strong>Total cost of project</strong></td>
<td><strong>45000.00</strong></td>
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<tr>
<td>or 1000 US $</td>
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Part 7: Fundraising & grant writing
Proposal for Funding
Dr. Arshad H. Toosey and Uzma Khan, Lahore Zoo, Pakistan

Education on Invertebrates for School Children

Starting Date: January 2001
Duration: One year
Budget: USD 1000 or Rs. 50,000

Project Aims:
* To provide invertebrate education that constitutes 97% of the biodiversity on this planet.
* To highlight the significance of invertebrates in maintaining the ecological balance.

Background:
Children are usually interested in the large animals that make only 0.02% of the biodiversity and invertebrates are ignored because of their insignificant size. Such a project will develop the interest in children for invertebrates. We will make large models of invertebrates that would make them equally interesting and attractive for the children, as the large mammals are. The general concept of people about invertebrates is that they are pests; this concept needs to be changed by promoting education about their benefits to the ecosystem. The idea to incorporate such an activity with our existing education programme was realised during the Zoo Educator Workshop of South Asian Region in Nepal from 7-12 August 2000.

Methodology:
Students will be given a lecture about the invertebrates. The constituents of a lecture would entirely depend on the age group of the students a variety of things can be discussed like habitat, range, adaptation, behaviour and ecological role. The colours of invertebrates are also an important feature that will instil the concept of warning signs and camouflage.
The invertebrate models can even be carried to different schools and thus we can provide the talks at the schools. This would make it more manageable and successful. Such activities will lead to the field trips where students can observe different types of invertebrates and can even carry out exercises in their gardens and even homes. This would enhance their ability to observe the invertebrates more carefully.

Goals so far achieved:
Lahore Zoo launched its education programme on October 1998, it is the first and the only zoo so far in Pakistan to carry out a project of this nature. It produced biodiversity and ecology education to the school children through guided tours and education material. Developed information boards to reach out to its 2.4 million annual visitors.

Expected outcome:
Many invertebrates species are still undiscovered and hence such an awareness will promote research activities. It is also promote awareness among children and help them develop a positive attitude towards invertebrates.

Budget:

<table>
<thead>
<tr>
<th>Material</th>
<th>Total number</th>
<th>Cost per unit</th>
<th>Total cost</th>
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<tr>
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<td>Rs. 10,000</td>
<td>Rs. 50,000</td>
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<td>Invertebrate models</td>
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<td>Invertebrate models</td>
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<td>Specimens</td>
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<td>Honeybee</td>
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<td>Dragonfly</td>
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<td>Firefly</td>
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<tr>
<td>Dung beetle</td>
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<tr>
<td>Earthworm</td>
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</table>

Significance to be highlighted
Pollination, metamorphic, honey
Pollination, metamorphic
Bioluminance
Recycling
Recycle soil

Part 7: Fundraising & grantwriting
Proposal for Funding
Central Zoo staff, King Mahendra Trust for Nature Conservation/Central Zoo, Nepal

Educational Tour to National Park for Government School Students

Background: The Friends of the Zoo (FOZ) is a Conservation Education program of the Central Zoo. The main objective of this program is to raise awareness about nature and wildlife conservation. The membership for this program is open to all national and international citizens. But it is specially designed for the school students. So far FOZ has 6200 members and 90% of them are student members. Every year FOZ is organizing a variety of conservation education programs such as: Educational tour, Essay, Quiz, Drawing competitions and basic trainings in Bee keeping, Aquarium management and bird watching. Besides these there are many privileges to the members such as discount facilities from 50 reputed valley based business houses and also many other zoo internal facilities.

Objectives: FOZ, at present is limited to private boarding schools only. So it is trying to find out sponsors to initiate membership drive in government schools and make them involve in different educational programs specially in educational tour. The yearly membership fee for a student is Rs. 150/- (2.1 US$).

Date/Duration: Two tours (one in December and another in January). Duration of each tour will be two night and three days.

Total Budget: 1500 US$ (two educational tour and membership).

Amount requested: 1000 US$ (for transportation, lodging and foods for two tours).

Project aims:

a) to give exposure and understanding of behaviour and habitats of wildlife.
b) to give knowledge about importance of bio-diversity conservation and National Parks.

Goals so far achieved: FOZ program has been able to develop relations with students, teachers, business houses and general people. Its Educational activities have been able to receive appreciation and support from abroad as well.

Conservation/welfare relevance: Government school students will also be aware about Nature and its heritage conservation.

Local involvement/support/benefit: Conservation education message will be spread through the students to their families and society as well.

Expected Outcome: To increase awareness about nature and wildlife conservation among the masses.

Project Evaluation: Two times (immediate after each tour)

Intent to publish: The name of the sponsor will be advertised during the tour and will be published in the Zoo Newsletter (quarterly) and other zoo publications as well.

Contact Address: KMTNC/Central Zoo
Jawalakhel, Nepal

Part 7: Fundraising & grant writing
Proposal for Funding
Dr. Ganesh Kumar Dubey, Maitri Baug Zoo, Bhilai

Awareness programme on Endangered parrots

Location: Bhilai, Madhya Pradesh, India.
Amount requested: 1,000 US $ or 45,000/- Rs Indian.

Description of project: In India some persons purchase parrots from the market and put them in small cages in houses thus increasing the trading of this bird. This bird has become endangered. In this project we create awareness in children of all school levels, scout Guide and Eco clubs in the society. This will ultimately reduce people from keeping the birds in houses, trading and catching birds from forest will reduce. In this project about 2500 school children, Scout guide (100 nos in about 20 schools), 20 peripheral school boys are involved.

Other source of financial or Technical support: Financial : Man power from Maitri Baug Zoo
Technical : Staff of Maitry baug zoo, Jawaharalal Nehru Agricultural University, Jabalpur, India.
M.P. Forest Research Institute.

Project Aims: For saving the parrot from extinction.

Methodology: Lectures can be given in School Eco Clubs and to Scout Guides about the habitat and threats of the parrot and what they can do about it.
Peripheral village distribution of posters and other education material for awareness (self explanatory)

Benefits to indigenous people: Environment education awareness and saving the Parrots.

If ongoing project, what results to date: No project going on

Intent to publish? where and when: In India, Zoos' Print, EG News paper within 6 months after completion.

Methodology:
I. Slide show
   1. Slide of Bird
   2. Bird with habitat (tree trunk sets)
   3. Bird in the cage on seller cycle
   4. Bird young one in hand of seller- when they purchase
   6. Open cage with dead bird - If released
   7. Extinction of bird
   8. Don’t buy, but conserve them.
II. Provide poster to School, public place or display offices.
III. Video-shows:
IV. Provide student a sticker free of cost after presentation.
V. Posters, stickers etc. for peripheral schools provided and training for the teacher about conservation.

Part 7 : Fundraising & grantwriting
Proposal for funding
Dr. R.K. Sahu, Kamala Nehru Zoo, Ahmedabad

**Preparation of “Zoo guide” (book) for Ahmedabad Zoo**

<table>
<thead>
<tr>
<th>Durations:</th>
<th>Six months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total budget:</td>
<td>One Lakh rupees</td>
</tr>
<tr>
<td>Amount requested:</td>
<td>Fifty thousand rupees</td>
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</table>

**Project aims:**
1. To create general awareness about different endangered species of animals available in my zoo.
2. To educate different age groups of students.
3. To give the conservation message to zoo visitors.
4. To develop sympathy about wild zoo animals
5. To convey developmental message of Zoo.

**Goals so far achieved:** We have printed/distributed pamphlets to visitors now they are not teasing or feeding our zoo animals, they have also understood aims of zoo.

**Conservation/Welfare relevance:** This project will be useful for both purpose, conservation as well as for welfare of wild animals by conservation message. Feeding, teasing will be in future avoided so ultimately wild animals will be benefited.

**Local involvement/ Support/Benefit:** We will also involve local volunteers to participate in conservation education programme and also involve schools and their teachers and students, so they will gain knowledge about wildlife and ultimately all wildlife including endangered animals will be benefited.

**Expected outcomes:** Visitors, students will be benefitted and we will easily convey the message of conservation along with other details of animals of our zoo.

**Project monitoring/ evaluations:** After this project we will evaluate this project with the help of Zoo Outreach Organisation by the survey of our Zoo visiors, we will also take the help of Z.O.O. and W.W.F. for better implementation of this project with better design of our zooguide along with zoo map and the details of zoo animals and beautiful photographs.

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Part 7: Fundraising & grant writing
Proposal for Funding
Dr. M.A. Salam, Jawahar Lal Nehru Biological Park, Bihar.

To discourage (stop) monkey shows by madary by creating awareness amongst school children, villagers

Location: 65°N - 25°E. Bokaro Steel City, Bihar

Amount required: 500 US $ or 22,500 in Indian Currency.

Background: In so many places in India, Madaries have the habit of putting rope in the neck of the monkeys and moving from one place to another place in villages for monkey shows. By doing so, they earn money, but do not take care of those monkeys nor provide them with proper food. In due course, the monkey becomes exhausted and is under stress due to teasing and torturing.

Description of Project: To discourage the monkey show and create awareness, we have to organise programmes in school at least twice a month. We hope to get volunteers from different schools will help to conduct awareness programmes amongst villagers at least for 3-4 months. Due to this, capturing of monkeys will decrease and the population in wild will increase resulting in the success of conservation and awareness programme.

Methodology:

School Education
I. Slide shows:
   1. Monkey
   2. Monkey
      +
      Tree
   3. Monkey
      +
      Madari

II. Posters:
   1. Animal with chain and madari
   2. Poster Pasted on walls and boards in villages and school.
   3. Field contact person (s) and affiliation: Sri Om Prakash
   4. Other sources for financial or technical support: Local NGO's

Other Sources of
Technical/ Financial support: Financial: J.N.B. Park, Bihar
                              Technical: Forest Dept., NGO's and Professor of Zoology Dept., Social Workers.

Project Aims: For saving the monkey from teasing and torturing by madary.

Methodology: To create awareness amongst school children and village people through lecture, eco-club, volunteers, social workers, NGO's and forest department.

Benefit to indigenous people: Educational awareness, save the life of the monkeys of Bihar region.

If an ongoing project, what resources to date: No ongoing projects, but awaiting results in 3-4 months.

Intent to publish? where and when: In local news papers and primate journal.
Proposal for Funding  
Dr. Md. Serazul Islam, Dhaka Zoo Gardens, Dhaka, Bangladesh.

Conservation of the Lesser Adjutant Stork

Location: Dhaka Zoo, Gardens, Dhaka

Amount Requested: Tk 56,000.00 (Tk fifty six thousand only)

Description of the project: The project is on the Lesser Adjutant Stork, which was once found abundantly in Bangladesh and is now on the verge of extinction. If necessary steps are not taken to conserve the Lesser Adjutant Stork right now, it will became extinct from the country.

Other sources of financial/technical support:  
Financial: The Columbus Zoo Conservation Project.
Technical: The WWF, IUCN, Bangladesh, The Dhaka Zoo Gardens

Project Aims: To increase the number of Lesser Adjutant Stork through ex situ breeding and rehabilitation in nature.

Methodology: Rearing two or three pairs of Lesser Adjutant Stork in captivity in Dhaka Zoo. The Dhaka Zoo is having at the moment four female Lesser Adjutant Stork. Every year that are laid do not hatch due to infertility. So attempts have been made to collect the male birds for forming pairs. The Dhaka Zoo had bred Lesser Adjutant Stork in the past. The fund will be used for mass awareness, cage enrichment, making ideal cages etc.

Benefit to local people: The birds live on rats, rodents and carcasses, thus preventing crop damage caused by rats and keeps the nature clean by consuming dead things.

If an ongoing project,  
What results to date: No ongoing project now.

Intent to publish? Yes, after completion of the project
Proposal for Funding
Shital Kumar Nath, Chittagong Zoo, Bangladesh

Conservation the Rosy Pelican (*Pelecanus onocrotalus*)

Location: The conservation project will be in Chittagong Zoo, which is situated in a hilly area of the South East Part of Bangladesh.

Amount requested: Tk 56,000.00 only (i.e. $1,000)

Description of the project: At first, during the project one bird house will be built in which all types of facilities for the bird will prevail as artificially as possible like a water pond, some tall tree, a grassy land, some weeds etc in the net of the house. After building the house two pairs of Rosy pelicans (supported by the Sri Lankan National Zoological Park) would be introduced.

Field contact persons and affiliations: A contractor will build the house as per schedule. Three of the zoo’s staffs will also work with the constructors labourers. Curator of Chittagong Zoo will monitor the whole work.

Other sources of Financial/Technical support: Technical support: WWF, Bangladesh and IUCN, Bangladesh will help by supplying technicians. One engineer and architect of Chittagong Zilla parishad will also serve his duty properly at the project.

Project Aims: The main goal of the project will be to conserve the Rosy Pelican at our zoo and country which is endangered in the world. In the past, it was available in our country. So, once upon a time this land was its feeding and breeding ground. If all types of opportunities prevail in captivity then it may breed. If it breeds successfully, we will conserve it by *in situ* and *ex situ* methods.

Methodology: Already there are several types of aquatic birds conserved in Chittagong Zoo. The Chittagong Zoo has 3 trained bird care takers methodologically it will be helpful to conserve the new bird in the Zoo.

Benefits to Indigenous People: If the Rosy Pelican can be conserved in Chittagong Zoo, the public will see it and become aware of the necessity to conserve them. This will also help in spreading the awareness about conservation of other wild animals too.
Proposal for funding
Dr. Kalaiarasan, Chennai Snake Park, Chennai

**Awareness programmes on Snakes and Supply of Anti-Snake Venom treatment kit to the rural communities**

**Duration:** 1 year from date of Sanction of grants

**Total budget:** Rs.45,000/-

**Details:**
- Preparation ASV treatment kit 20 Nos. @ Rs.1250/-
- Designing and printing posters on 2000 Nos.
- (i) Common venomous snake 1000 Nos.
- (ii) Common nonvenomous Snake 1000 Nos.
- Conveyance expenses for awareness programmes 20 x 100
- DA for Education Officer 20 x 150
- Evaluation visit 20 x 100
- Miscellaneous (Photography, Preparation of Report).

**Project Aims:**
The major obstacle to snake conservation in India and in other countries is probably fear of snakes by humans. The basic aims of the Snake park is to remove unreasonable inherent fear of all snakes, make the public aware that snakes have an important ecological role to play especially in controlling rodents, impress on people’s minds that only a small number of them are poisonous. Hence, the proposed project plan to remove the fear by identifying the venomous snakes namely cobra, krait, Russell’s viper and saw-scaled viper and popularising ASV treatment by awareness campaign through video film slide show and distribution of posters and ensure the availability of ASV treatment for Snake bite. In addition ASV treatment kit will be prepared and supplied to villages on trial basis. This kit will be given to the Head of the village to make it available to the victim on the spot. A hand out prepared along with the kit will explain how to use the kit in the case of snake bite by a local doctor or para medical person who is available on the spot before reaching to the nearest hospital for further treatment. For identifying the villages a survey will be undertaken from the rural people who visit the snake park on the attitude towards snake, snake bite incidents and need for awareness programmes.

**Goals achieved:**
The Snake Park disseminated the role of reptile in the ecosystem, identification of medically important snakes (four big ones) and snake conservation. However the rural communities are in one way or other not able to visit the Park and learn about reptiles.

**Conservation/ Welfare relevance:**
Once the people get rid of the inherent fear and myths about snakes, identify the venomous snake and ensure the availability of treatment for snake bite it will certainly give positive attitude towards conservation of snakes. This will be very helpful to save the human life as well as snakes.

**Local involvement/ Support/Benefit:**
Already the Snake Park is running the education programme on snakes to the teaching community now they are very much interested to go further to the rural community on conservation issues and treatment of snake bites. Necessary infrastructure from the snake park will be made available to this project.

**Expected outcomes:**
1. Removal of the inherent fear
2. Positive attitude towards snake
3. Able to identify venomous snakes
4. Providing proper treatment for snake bites
5. Achieve the conservation goal

**Project monitoring/ evaluation:**
This project will be continuously monitored by the Snake park authorities. Evaluating the project performance by identifying venomous snakes through the following: competitions, photograph for adults and small children by quiz, painting, etc will be conducted. Attitude changes will be evaluated at the end of the project. This project result also may be evaluated to number of snake bite victims saved through the ASV treatment compared with previous years.

Part 7: Fundraising & grant writing
Proposal for Funding
Humayun Taher, Madras Crocodile bank trust, Chennai.

**Education Plan: Crocodile Interactive Signboards.**

**Location:** Chennai, South India

**Amount registered:** Indian rupees 45,000.00, US $ 1,000.00 (U.S. One Thousand dollars)

**Description of project:** Building of interactive signboards for zoo education of visitors to the Madras Crocodile Bank. These signs would promote visitor interaction and above all spread the message of reptilian conservation to the visitors. This project is being particularly targeted towards children.

**Field contact persons:** The Education Officer, Madras Crocodile Bank (Humayun Taher).

**Other Sources of Financial/Technical Support:** Currently, our only source of funds is our gate collection (ticket sales). As a project our project has not been implemented due to severe shortage of funds. Technical assistance would be provided by our Director in-house.

**Project Aims:** Education of visitors, particularly school children towards the message of reptile conservation throughout the world.

**Methodology:** We would enlist the help of local craftsmen and develop/design and build signboards which would require some simple action on the part of visitors such as pulling a string or sliding panel, which would then replicate the action which is given on the sign. Eg. A crocodile hatching emerging from the egg.

**Benefit to Indigenous people:** The interactive signages would be printed in both English and the local language (Tamil). Thus, the message would also reach the local people, majority of whom can read Tamil.

**Results to date:** We have not yet started the project. However, our educational activities have been going on for several months and we have had very positive response from schools and colleges. Visitors have shown great interest in crocodiles and other reptiles and expressed concern at their global threatened status.

**Intent to publish:** The nature of the project does not lend itself to publishing. It will, however, be mentioned in our Director’s report to the Trustees and the Donor agency that will be published in our annual report to the Trustees.

**Brief description of some of the proposed signs:**

1) (A)* Crocodiles lay eggs like birds—Pull string to see a Crocodile egg hatch
   (B)* Crocodiles lay eggs like birds—Pull String to see a Crocodile egg hatch
   A*= Inactive sign.
   B*= Activated sign

2) (A) Crocodiles are related to birds—Slide panel
   (B) Crocodiles are related to birds—Slide panel

**Others:**
3) Illuminated sign of swimming crocodile (electronic)
4) Touch panel of crocodile skin with voice “Please touch and feel my skin”
5) Sign showing leather briefcase when touched, a voice says “Your travel bag to my journey to oblivion”.

Part 7 : Fundraising & grantwriting
Part 8

Masterplanning for Zoo Education
Masterplan for Education -- course project for the South Asian Zoo Educator Course, Central Zoo, Kathmandu

Initiating an Education Programme for a zoo in South Asia is not easy. Most of the zoos are government institutions which are beset with problems. The variety of problems were illustrated in the SWAT exercise, e.g. finance, no post of education officer, deficiency in educated staff, lack of training in educational techniques, understaffing, frequent transfer of officials, large visitation, rowdy visitors, many languages, illiteracy, climate, etc.

In many of the South Asian zoos, education has been haphazard or ad hoc. One or two special days a year might be celebrated but there has been nothing like a systematic and ongoing education programme in which something goes on every day.

In government organisations, it is crucial to have a systematic plan. If a zoo officer can submit a reasonable and effective programme he is more likely to get funding. The problem is that officials have not been trained for education and do not have an idea of the variety of activities which are possible in a zoological park.

A good zoo education training programme for South Asia, therefore, should start with basic ideas which don't necessarily require an Education Officer, which are simple, which can be done with a minimum of staff, finance and which reach a varied target audience. Not all ideas are possible or even desirable in every zoo; the director and/or education officer must find out what is right for their institution.

After presenting participants with a variety of ideas and trying to impart certain skills (presenting, designing a sign, etc.), we then tried to help them draw these ideas together in a plan for one year with a modest budget. This is the most important aspect of the course -- creating a Master Plan for Education which will fit the participant's own zoo.

We hope that other zoo educators or stranded zoo directors might get some inspiration and help from the efforts of others.

Part VIII : Masterplanning for Zoo Education
Master plan for the educational research activities in Ahmedabad Zoo

Outline:
Ahmedabad Zoo is one of the famous zoos of India. Every year 2.5 millions visitors visit this zoo & out of this 0.5 million are children. We are interested to conduct some research on “Asiatic Lion” in ex situ and in situ condition as well as to educate zoo visitors about the project.

The Gir Forest in India is the only place where Asiatic Lion is available in Asia. Their Population is decreasing due to many factors like deforestation, poisoning by local people, poaching, diseases, etc.

A. Project details:
1. Study of Lions in captivity.
2. Study of Lions in Wild
3. Research materials
4. Staff required
5. Materials for general awareness for Gir area for zoo visitors & Tools for educational activities.

I. Study of Lions in captivity:
Volunteers/Biologists/Veterinarians will be hired honorarily to note down all activities including problems, as well as ecological and behavioural data.

II. Study of Lions in Wild:
Collection of data and recording of lions’ activities from members of the Forest Department as well as from volunteers.

III. Research materials:
Computer, software, tranquillizers, drugs, etc.

IV. Materials required for general awareness / Tools for activities:
a. leaflets
b. handbooks
c. stickers
d. In both languages Gujarathi, English
e. Children, quiz, painting, competition
f. Better signage
g. T.V., VCR, Slide projector, Projector etc.

B. CBSG PHVA Review on Asiatic Lion.

Budget required:
I. Study of lions in captivity: continuously Rs. 5,000.00
II Study of lions in wild:
Honourarium for volunteers Rs. 15,000.00
Driver Rs. 50,000.00
Vehicle Rs.1,00,000.00
### III. Research materials:
- Computer with software: Rs. 1,00,000.00
- Equipments with drugs: Rs. 50,000.00

### IV. Staff: As per II

### V. Materials required for general Awareness/Tools for Education activities

<table>
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<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Loudspeaker</td>
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<tr>
<td>Projector (OHP) &amp; Slide</td>
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<tr>
<td>Signage</td>
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<td>Booklets</td>
<td>20,000.00</td>
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<tr>
<td>Stickers</td>
<td>10,000.00</td>
</tr>
<tr>
<td>Talk, Quiz competition, painting competition etc</td>
<td>15,000.00</td>
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<tr>
<td>T.V. VCR video films</td>
<td>40,000.00</td>
</tr>
<tr>
<td><strong>CBSG PHVA on Asiatic Lion</strong></td>
<td><strong>50,000.00</strong></td>
</tr>
<tr>
<td><strong>(Two days) Rs.</strong></td>
<td><strong>10,85,000.00</strong></td>
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</tbody>
</table>

If we will conduct research projects & educational activities then we require Rs. 5,85,000.00

If we are thinking it globally we can also organise CBSG & PHVA on Asiatic Lion that will cost extra Rs. 5,00,000.00 than our above activities but this PHVA & CBSG will add extra-ordinary expertise with the scientific opinion of scientists from all over world.

We hope that with the help of your funds, we will be able to save our very prestigious & rare Asiatic Lions.

R. K. Sahu, Superintendent
Kamla Nehru Zoo, Ahmedabad
Master plan for the educational research activities in Chennai Snake Park

Preparation of education materials in Indian languages other than Tamil on reptiles.

The Chennai Snake Park Trust was started in 1972 to create awareness and promote education and conservation activities. For last 28 years the CSPT has continued its services towards its objectives.

The CSPT attracts 1 million visitors in a year from all over the country being the first institution of this kind. By analysing the visitors it was learned that most of the visitors from outside Tamil Nadu. The details of visitors from various states are:
- TN-40%
- AP-30%
- Gujarat-8%
- WB-7%
- Rest-15%

Right now the signages, information board, pamphlets, booklets, PPC and slides are produced and made available in bilingual languages i.e., Tamil and English.
Considering the great potential to educate the visitors from Andhra Pradesh /Gujarat / West Bengal, this is a project plan to develop educational materials in Telugu, Bengali, Gujarati and Hindi.

How to go about it?
Already the materials are available in English; it just requires translation and printing the materials in the above languages.

The signages and information boards cannot be kept in Hindi in the snake park as the state policy did not permit it. However, the other materials such as handouts – general visitors, booklets – serious visitor, can be prepared and made available to them on request.

BUDGET

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<td>Printing and pamphlet - 1,250 x 4</td>
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<td></td>
<td>5000</td>
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<tr>
<td>Printing and booklet - 10,000x4</td>
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<td></td>
<td>10,000</td>
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<tr>
<td>Honoration for translation - 1250x4</td>
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<td></td>
<td>5,000</td>
</tr>
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</table>

**TOTAL**

Rs. 20,000
Master plan for the educational research activities in Rangpur Zoo, Bangladesh

Master Plan for Zoo Education of Rangpur Zoo, Bangladesh

1. Staffs: As there is no education officer in my zoo I need a temporary staff for zoo education who also knows art.
   @ TK. 5,000/- per month X 12 = TK. 60,000/-

2. Signage: I need about 50 signages for better education of the mass people in two languages (i.e. Bengali & English)
   TK 25,000/-

3. Publication: Publication, Guidebook, leaflets etc. are important for zoo education
   I need TK 1,00,000/- Quiz competition & art competition.

4. Audio visual - I need Television, V.C.R, Slide Projector, etc. TK 2,00,000/- Micro phone

5. Transport: Air Bus/ jeep for diff. times - TK 65,000/-

5. Communication:: Phone/Fax/ Postage TK 50,000/-

Total -TK 5,00,000/-

In my zoo I have some signages but they are short & incomplete which does not cover information and they are not attractive at all. So we should have the signages more attractive for the mass as well as school children.

My target is about 500 school children of about 20 schools, colleges for special zoo education programme.

* Training of teachers may be conducted.
* For zoo education for the mass about 5000 posters, booklets and brochures are to be published.

500 T-shirts which have information about conservation of animals may be given to the zoo keepers, also.

* A color TV & V.C.R may strengthen the zoo education programme. Slide projector etc also is required for zoo education

* Hired vehicle is required for education tour to national park and showing any other habitat for different species. Eg. River Tista, Brahmaputra etc.

Communication is essential for monitoring zoo education as well as maintain liaison to all other zoo association.

Dr. N.C. Roy, Deputy Curator
Rangpur Zoo

Part VIII: Masterplanning for Zoo Education

Rangpur Zoo, Bangladesh
Master plan for the educational research activities in National Zoological Gardens, Colombo, Sri Lanka

Title: Strengthening of Zoo Education Programme for the National Zoological Garden, Sri Lanka

Introduction: The present zoo education programme is only confined to zoo-based students educator programmes consisting of lectures, slide-shows, video shows, guided tours, publications and educational signage only. The extension programmes include demonstrator and lecturer only. These need to cover many aspects and requirements of the public which is 2.5 million per year.

Objective: To strengthen the existing zoo education programme to accommodate more-attractive and easy zoo education programmes covering many aspects of the environment and many segments of the public.

Duration: years from 2001-2006

Activities:

i. In-house programmes: lectures, video shows, slide shows, discussion films and computer simulation

ii. Mobile exhibits, recorded programmes

iii. Signage, Descriptions and computer simulation

iv. Radio & T.V. programmes

v. Newspaper supplements & magazines

vi. Brochures and leaflets

vii. Internet - website for Zoo

viii. Environmental enrichment (already borne under capital budget)

ix. Visiting lectures (borne under item II)

x. Picnics, nature camps & field trips

xi. Poster, photo, essay, poem, story quiz and other type of competition

xii. Exhibitions (Games under above)

xiii. Research (Visitor numbers and configuration)

xiv. Training of trainers for zoo clubs etc

xv. Training of Zoo staff

Zoo inputs

Logistics: 200 m² floor area video & audio equipment, transport

Stall - part time, full time to librarian

Printer: 2, million other: 1.3 million

Trends: Rs: 2 million (to be met by Zoo authorities)

Output (intangible): Increased awareness and participation of zoo visitors (tangible)

Increase the membership of Foz, Zoo Clubs & Small inflow to the zoo.

Other parties involved: Foz

YZO Zoo club in School (proposed)

Assistant Required: 3 computers (3 million)

S. Gunasena, Sri Lanka, Director

National Zoological Garden, Sri Lanka
Introduction of Environmental education programme at the National Zoological Gardens of Sri Lanka

National Zoological Garden in Colombo is the only zoo in Sri Lanka. Presently there are some education programmes being carried out and the introduction of environmental education is being considered. This zoo is visited by a large number of visitors a majority of whom are school children. School children could be considered as the best persons to teach environment education as they can carry this message and implement it in schools. Another reason being that Environment education has been included into their syllabus in school.

In addition to this, "Touch Tables" to be introduced as biofacts are available.

Duration of this programme will be a month starting from January of each year as the examinations are held towards the end of the year.

The initial budget for introduction of this programme will be in Sri Lanka. Rs. 5,00,000/-

To purchase audio visual, over head projectors, table for biofacts, newspapers, silk screens will require a sum of Sri Lankan Rs. 3,00,000/-

To educate the school children on environmental education as the Bio-diversity is completely dependant on environment. Find out how much they have learnt by conducting essay competition and multiple choice questions.

Budget:

<table>
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<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary for the education officer</td>
<td>Rs. 1,02,000.00</td>
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<tr>
<td>Cost of Purchase AV/J</td>
<td>Rs. 50,000.00</td>
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<tr>
<td>Cost of Silk Screen</td>
<td>Rs. 15,000.00</td>
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<tr>
<td>Cost of transparencies</td>
<td>Rs. 10,000.00</td>
</tr>
<tr>
<td>Cost of Transport</td>
<td>Rs. 25,000.00</td>
</tr>
<tr>
<td>Cost of Communication</td>
<td>Rs. 20,000.00</td>
</tr>
<tr>
<td>Cost of Publications</td>
<td>Rs. 25,000.00</td>
</tr>
</tbody>
</table>

The balance Rs. 2,00,000 will be utilized to continue the programme annually for the other schools. Later this could be even extended to the village level.

Jayanthi Alakoon, Addl. Director
National Zoological Gardens,
Sri Lanka

Pinnewala Elephant Orphanage is part of the National Zoological Gardens Organisation, Sri Lanka
Master plan for the educational research activities in Gwalior Zoo

Environmental Education Programmes in Gandhi Zoological Park Gwalior

Dr. Pradeep Shrivastava
Zoo Officer, Gandhi Zoological Park

Education Programme Masterplan

1. Project Title : Zoo Education Programmes

2. Implementing Agency : Gandhi Zoological park
   Gwalior, Madhya Pradesh

3. Contact Person : Dr. Pradeep Shrivastava

4. Collaborating Agencies : School of studies in zoology, Jiwaji university, Gwalior

5. Project details :

   - Target Groups : Teachers, students, administrators Legislators, social workers, industrialists Representatives of NGOs, animal welfare groups, media persons.

   - Location : Gandhi Zoological Park, Gwalior

   - Dates and duration : During all environmentally important days

   - Justification : The objective of the zoo education programmes is to provide a forum for the promotion and exchange of scientific information related to the impact of human activities on the environment to create awareness among local people to involve in various in this region.

   Besides above objectives we want to give stress on following objectives-
   1. To use Gandhi Zoo as a site for education
   2. To learn about wild flora and fauna of the zoo
   3. To understand what is the Gandhi Zoological Park
   4. To understand about importance and the need for conservation of Gandhi Zoological Park
   5. To understand the concept of eco-development
   6. To take active support of student teachers and NGO’s
   7. To trend the teachers to carry out their student for Gandhi Zoological Park

Plan for Implementation:

After obtaining approval to organize the education programmes the following activities will be carried out.
1. The potential participants will be identified and invitations will be sent for participation in the zoo education programmes.
2. The Madhya pradesh forest department and wildlife experts from Jiwaji University and other colleges will be requested to participate in organizing the education programmes.
3. The resource persons will be contacted to deliver their talks. Articles of each speaker will be obtained in addition to published literature to prepare a briefing book for participants.

4. Different approaches will be used for the programmes like
   (i) Seminars
   (ii) Workshops
   (id) Competitions (Drawing, Essay writing, Photography, Debate, Quiz)

Part VIII : Masterplaning for Zoo Education

Gandhi Zoological Park, Gwalior
(iv) Dramas /Plays
(v) Nature walks
(vi) Radio / T.V. talks
(vii) Visits to various schools
(viii) Forming students groups

Follow up:
The action taken by each participant in their respective capacities will be collected through a questionnaire survey method. Monitoring of their activities will be encouraged to submit the results for university degrees / diplomas.

The students of various colleges, university and representatives of various NGOs will be engaged to collect data on the follow up action. The students will be encouraged to submit the results for university degrees / diplomas. Resources to be provided by the implementing agency.

The Gandhi Zoological Park is moderately equipped with facilities for seminars and workshops. The required infrastructure and equipment for organizing the education programmes are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditorium</td>
<td>15,00,000</td>
</tr>
<tr>
<td>Signboards</td>
<td>50,000</td>
</tr>
<tr>
<td>Stickers and education material</td>
<td>1,00,000</td>
</tr>
<tr>
<td>Nature trail facility</td>
<td>1,00,000</td>
</tr>
<tr>
<td>Posters</td>
<td>10,000</td>
</tr>
<tr>
<td>Library</td>
<td>1,00,000</td>
</tr>
<tr>
<td>Information brochures</td>
<td>1,00,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,60,000</strong></td>
</tr>
</tbody>
</table>

Various communications systems will be used like:
- T.V.: 25,000
- V.C.R.: 12,000
- Projection screen: 10,000
- Wildlife films/slides: 10,000
- Projector: 2,00,000

**Total Project cost**: 22,12,000

Zoo education programmes are being taken up specifically on days specified for various activities. In addition, specific programmes are time to time in the year.

- 14th January to 30th January: Animal welfare fortnight
- 21st March: World forestry day
- 22nd March: World water day
- 22nd April: World early day / Water resources day
- 5th June: World environment day
- 1st July: Agriculture day and vanmahotsva first day
- 16th to 18th September: Clean up the world campaign
- 27th September: World tourism day
- October 1st week: Wildlife week
- Second Wednesday of October: International nature disaster prevention day
- 5th October: World habitat day
- 16th October: World food day
- 1st November: World ecology day
- 19th to 26th November: National environment month
- 21st November: WWF conservation day
- 24th November: World biodiversity conservation day
- 3 December: World conservation day

Part VIII: Masterplaning for Zoo Education
Master plan for the educational research activities in Dhaka Zoo

Education Budget for One year

A. Expenditure involved for new persons

1. Education officer - 1 No.
   Salary - TK. 8000.00 P.M. x 12 months
   TK 96,000.00

2. Guide - 2 nos
   Salary - TK. 2500.00 P.M. x 12 months
   30,000 TK x 2 Nos
   TK 60,000.00

3. Volunteers - 3 Nos
   TK 1000 P.M. for each of them
   3000.00 x 12
   TK 36,000.00

4. Artist - 1 no
   Salary -
   5000.00 x 12
   TK 60,000.00
   Total TK
   TK 2,52,000.00

B. Expenditure involved for Signage etc
   Lump sum TK
   TK 50,000.00

C. Expenditure involved for Equipments
   1. Slide projector 1 Nos
      TK 25,000.00
   2. Video projector 1 Nos
      TK 50,000.00
   3. Video film
      TK 30,000.00
   4. Publication
      TK 1,00,000.00
   Total
      TK 2,55,000.00

D. Expenditure involved for Transport (Lumpsum)
   TK 80,000.00

E. Expenditure involved for Communication
   TK 50,000.00

F. Expenditure for unseen items (Lump Sum)
   TK 40,000.00

So the grand total :
(2,52,000.00 + 50,000.00 + 2,55,000.00 + 80,000.00 +
50,000.00 + 40,000.00) Total of (A,B,C,D,E,F)
(Taka Seven Lakhs and Twentyseven thousand only)
   TK 7,27,000.00

Dr. S. Islam, Curator
Dakha Zoo, Bangladesh
Microplanning of Zoo Education Programme-Maitry Baug Zoo, Bhilai

Task Analysis
One of the objectives of a zoo is imparting education about wildlife to the visitors. Maitry Baug Zoo is a middle category zoo, as recognised by CZA and run by Bhilai steel Plant. It is the biggest zoo in Chattisgarh region of Madhya Pradesh State. It contains 19 species of mammals, 12 species of birds, 3 species of reptile about 413 animals including Tiger, Lion, Leopard, Sambhar, Spotted deer, Sangai, LTM, Python, crocodile, Gharial and Birds. Most of them are Endangered native species.

Visitors come from the various area of Madhya Pradesh, adjoining areas of Orissa and Maharashtra. Bhilai has a number of schools from preprimary to higher secondary and college level. Being an industrial town, Bhilai population is cosmopolitan in nature comprising of people from all states of India. Foreigners also visit Bhilai.

This education plan is meant to fulfil the enthusiastic visitors, children, students of specialised fields and other students.

Objective:
Zoo education can be imparted to visitors, students and other specialised groups such as veterinary & biology students, by the following means:

i) Putting boards on each enclosure giving basic information about specific animals/birds.
ii) Printing educational material, brochures and map.
iii) Warning boards.
iv) Environment and ecology information boards.

This will be completed by December 2001

Resources:
1. Professional Expertise.
2. Wild Life Institute of India.
4. I.T.C. Jersey network.
5. Public Relations Department.

Constraints:
1. Budget provision.

Step by Step Planning:

<table>
<thead>
<tr>
<th>Job to be Done</th>
<th>Responsibility</th>
<th>Resources</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Visitors Survey</td>
<td>Dr. G.K. Dubey</td>
<td>The information will be collected in the</td>
<td>2000-2001 December</td>
</tr>
<tr>
<td></td>
<td>T.K. Chilvan</td>
<td>Format available in the rainy summer &amp; winter</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>season. After getting the results, necessary</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>corrections will be made in the educational</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>plan</td>
<td></td>
</tr>
<tr>
<td>2. Fixation of new sign boards on zoo</td>
<td>Dr. G.K. Dubey</td>
<td>BSP Printing Press</td>
<td>27/07/2k to 10/08/2k</td>
</tr>
<tr>
<td>enclosures. Providing writing material</td>
<td>T.K. Chilvan</td>
<td></td>
<td>10/08/2k to 10/09/2k</td>
</tr>
<tr>
<td>and design. Translation into Hindi.</td>
<td>Dr. N.K. Jain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Painting &amp; Fixing of boards.</td>
<td>A.K. Dubey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Development of Brochures (a)</td>
<td>Dr. G.K. Dubey</td>
<td></td>
<td>30/08/2k to 01/09/2k</td>
</tr>
<tr>
<td>Providing writing material</td>
<td>T.K. Chilvan</td>
<td>BSP School Scout Guide</td>
<td></td>
</tr>
<tr>
<td>(b) Printing of material</td>
<td></td>
<td></td>
<td>01/09/2k to 01/10/2k</td>
</tr>
<tr>
<td>4. Development of zoo education program</td>
<td>AGM PHD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for school children: Selection of theme</td>
<td>Dr. G.K. Dubey</td>
<td>By discussion with team members for</td>
<td></td>
</tr>
<tr>
<td>for programs: Presentation at various</td>
<td>T.K. Chilvan</td>
<td>2000-2001 (Caged Parrots) Eco Club of</td>
<td></td>
</tr>
<tr>
<td>Eco Clubs of Schools</td>
<td></td>
<td>BSP School (which changes annually)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>&amp; other schools</td>
<td></td>
</tr>
<tr>
<td>5. Preparation of Educational material</td>
<td>Dr. G.K. Dubey</td>
<td>Also can be obtained from Zoo Outreach</td>
<td>Oct 2000</td>
</tr>
<tr>
<td>for Pre-Primary School: Distribution of</td>
<td>T.K. Chilvan</td>
<td>Organisation</td>
<td></td>
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<tr>
<td>alphabets of zoo animals</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Create awareness about the annual theme</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Photo exhibition of wild animals</td>
<td>PRO Department</td>
<td>PRO of BSP can organize competition</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) Putting up Banner</td>
<td>Supervisor</td>
<td>b. Open for Public</td>
<td>31 Sep. 2000</td>
</tr>
<tr>
<td>(c) Quiz Competition (d) Prize Distribution</td>
<td>A.K. Dubey T.K.</td>
<td></td>
<td>Oct. 2000</td>
</tr>
<tr>
<td></td>
<td>Chilvan</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>A.K. Dubey T.K.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Chilvan</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>T.K. Chilvan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Biology Students</td>
<td>T.K. Chilvan</td>
<td>Mahu Veterinary College</td>
<td>Every year</td>
</tr>
<tr>
<td>11. Request Lectures at School &amp; visitor</td>
<td>T.K. Chilvan</td>
<td></td>
<td></td>
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<tr>
<td>groups</td>
<td></td>
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Master plan for the educational research activities in Lahore Zoo

Education Programme Masterplan, Lahore Zoo, Pakistan
Arshad Toosey, Director and Uzma Khan, Education Officer

New Structures:
1. An Education Centre needs to be constructed with seating arrangement for 100 students with audio/video facilities. The estimated cost is about Rs. 7 million
2. An Aquarium at an estimated cost of Rs. 40 million
3. A Nocturnal House to exhibit insects and reptiles at an estimated cost of Rs. 50 million
4. An Amphibian pond at an estimated cost of Rs. 50,000

Activities:
1. Public Talk Time- A microphone is required which would cost Rs. 50,000
2. Arrangements for Brass rubbing plates and Touch tables have to be made.

Equipment:
1. Audio/Visual, TV, Video, Projector (slide & Overhead) multimedia projector at an estimated cost of Rs. 600,000.
2. Computer, Printer and Scanner at an estimated cost of Rs. 150,000
3. One Microphone at an estimated cost of Rs. 80,000

Education material:
Brochures about 10 million in number at an estimated cost (Rs. 5 per brochure) of Rs. 5 million

Animal Fact Sheets:
1. Animal fact Sheets (4 colour, A4 size) about 1.2 million in number (Rs. 2 per brochure) at an estimated cost of Rs. 240,000
2. Volunteer Guide books about 10 in number (Rs. 100 per book) at an estimated cost of Rs. 10,000

Education Tools:
1. Invertebrate Models about 10 in number (Rs. 10,000 per model) at an estimated cost of Rs. 100,000
2. Brass rubbing plates about 10 in number (Rs. 200 per plate) at an estimated cost of Rs. 2,000

Staff:
1. Volunteers, Badges, Uniforms, Transportation & Snacks about 5 in number at an estimated cost of Rs. 100,000
2. Appointment of an Education Officer (Rs. 8000 per month)-about Rs. 100,000
Master plan for the educational research activities in Bokoro Zoo

Jawahar Lal Nehru Biological Park, Bokaro, Bihar (India)
M. A. Salem, Superintendent

1. Project title:- Zoo Education master plan of Jawahar Lal Nehru Biological Park, Bokaro, Bihar (India).
2. Implementing Agency:- Jawahar Lal Nehru Biological Park, Bokaro, Bihar.
3. Contact person:- Dr. M. A. Salam, Sr. Dy. Director, Jawahar Lal Nehru Biological Park, Bokaro, Bihar.
4. Objectives:- According to new zoo policy adopted by Govt. of India, zoo education is one of the most important objects of zoos in India. To achieve the goals, fund is a main barrier specially in those zoos run by private agencies/Government of India undertaking like Jawahar Lal Nehru Biological Park, Bokaro, Bihar, which is being owned and managed by SAIL/Bokaro Steel Plant and facing financial crisis. Management of zoos is a costly affair in the present scenario. Many tribal and slum people reside in the neighbouring villages of Jawahar Lal Nehru Biological Park. Due to illiteracy and poverty they are engaged in activities which are threats to wildlife. In the circumstances mentioned above, Environmental education and awareness is necessary in the surrounding / neighbouring areas of Jawahar Lal Nehru Biological Park. To achieve the above objectives JNB park has prepared an environmental education plan.

5. Justification:-
   (i) Teachers training:- There are about 100 schools run by different organisations in Bokaro Steel city and neighbouring areas, in which about 400 science teachers are working. The training program will be useful and beneficial to these teachers to speed up environmental education and awareness among school children.
   (ii) Training of school children:- Atleast 2/3 children from each school have to be trained as volunteers by the zoo for environmental education and awareness.
   (iii) Education of slum children - Some children from the neighbouring slum area have to be involved by JNB park for their environmental awareness and education.

6. To achieve the above objectives JNB park needs the following infrastructure:- Short term program
   (a) Training program:- Project cost [Budget]
      i. Audio-visual equipment Rs. 50,000.00
      ii. Refreshments for teacher Rs 10,000.00
      iii Conveyance for participants Rs. 20,000.00
   (b) Upgradation of signages Rs. 50,000.00
   (c) Publication of brochures, guide books, leaflets, stickers etc., Rs. 25,000.00
   (d) Organisation of programs on special days i.e., Animal welfare fortnight, world environment day, wildlife week etc., Rs. 30,000.00
   (e) Organisation of nature camp for school children Rs. 20,000.00
   (f) Recreation activities for awareness i.e., mask and cartoons of zoo animals Rs. 10,000.00
   TOTAL Rs. 2,15,000.00

7. Expenditure of required staff:-
   (i) Education officer - already available
   (ii) Volunteers - Have to be prepared
   (iii) Guide - Already available
   (iv) Artist - Already available
   (v) Driver - Already available

If the above project is sponsored by some organisation or agency like CZA, India or WWF, India then it will be possible to achieve the objectives of zoo educational programs successfully as per the new zoo policy of India.
Master plan for educational/research activities in Madras Crocodile Bank

Education Master Plan for Madras Crocodile Bank
Humayun Taher

Visitor survey: Develop questionnaire and also interact with visitors to get ideas of what the average visitor wants/expects to see or learn here. Through this exercise we would be able to identify target groups and modify or develop the educational activities accordingly. Also see your age group visitation.

Education officer appointment: Although the MCB has an acting education officer playing a dual role as administrator there needs to be an education officer with capacity to interact with the visitors full-time and generally be available all the time for such activities.

Interactive signage: Using local expertise (which is available) interactive signs can be developed. Eg: Pull this string to see a baby croc. emerge from its egg*. Such signs would not need to be made too expensive. Local talent can be tapped (even school children competition). Also a touch table with a croc skin and croc eggs for visitors to touch and experience.

Ad hoc competitions for school groups: Using may be a Crocodile Bank T-Shirt as a prize, have sudden non scheduled contests such as "This croc is 16 feet long. How heavy is he? etc. This would encourage students.

Educative signs: Placing educative and fun signs around the Crocodile Bank is ongoing. We already have several such signs around which educate visitors. Eg. "Voyage of Disaster" Your expensive travel leather briefcase is the Crocodile's road to extinction.

Brochures: We are designing and developing a brochure for distribution to both visitors and children (school group). We had originally intended to sell this but it has been felt that it might be better to build it into the cost of the entry ticket. This folder would detail the education activities at the Croc. Bank and also carry the education message itself.

School groups: Rather than waiting for the schools to come to us, we would rather go out to schools. The appointment of the education officer would help in this because he/she would be able to go out to schools on mondays (Croc bank holiday) and address them.

Audio - Visual room: On a very small scale, we have already started this. We are going to expand this to include a film projector, crocodile skulls and skeletons (real and plaster models) videos, lectures, poster presentations etc. The major target would be children. However, this activity would by no means be restricted to children.

Proposed / Estimated budget for education master plan:

Staff requirement:
1x Education officer for 1 year @ Rs.5000 60,000.00
3x Volunteers for 3 months @ Rs. 1500 54,000.00
The Education officer is a permanent appointment.
Volunteers would take part in the initial visitor survey.

Signage publications:
Signage development 75,000
Touch Table 5,000
Interactive signs 15,000
Total 95,000.00

Publications:
Brochures @ 10/- per copy (10,000 copies) 1,00,000
Stickers / Posters 25,000
Total 1,25,000.00

Equipment:
Audio visual equipment (i.e. television, video, projector) 1,75,000
Plaster casts of skulls and bones 40,000
Total 2,15,000.00

Miscellaneous:
Ad-hoc competition prizes, refreshments 25,000.00
Education officer transport to schools, etc.
Total Budget: Rs. 5,74,00.00

Part VIII : Masterplaning for Zoo Education

Madras Crocodile Bank Trust
Central Zoo Masterplan for Education

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   - Time Table (Short and Long Term)
   - Coordination with Other Zoo Departments
   - and Conservation Organizations
8. On-Going, Evaluations and Adjustments to Programs
9. References
10. Appendix
    - A. Zoo Ed Section from World Zoo Conservation Strategy
    - B. Sample Zoo Enclosures Labels, Signs, and Graphics
    - C. Sample Pilot Project: Zoo/School Educational Program
    - D. Sample Visitors’ Survey (Bilingual)
    - E. Central Zoo Slide Show Script (Bilingual)
    - F. Educational Sites on Architectural Design of Masterplan

Acknowledgements
COLLABORATION WITH OTHER MEMBERS OF THE MASTER PLAN TEAM
Fatima de Zonne, Colin Pringle, Linda Kentro, Nils Eddy, and Helen Sherpa

The Conservation Education program at KMTNC/Central Zoo will be greatly facilitated and enhanced by both the proposed new architectural/landscape design and by the animal management and technical recommendations of the zoologist and animal behaviorist consultants. As stated in those sections of the masterplan, both the physical design and animal management of the zoo are educational- for all of the public. By seeing well-cared for animals in humane setting, grouped according to natural habitats, sends strong conservation message to all.

Every aspect of the master plan must be coordinated with every other aspect, as is nicely illustrated through out this document. Many hours have been spent by the masterplan team in collaboration. Hopefully, this approach will continue in the implementation.

1. INTRODUCTION:
The purpose of this paper is to help the KMTNC/Central Zoo to design and implement conservation education programs that will effectively bring improved environmental management. First, the current status of the Central Zoo is described. Second, the philosophy goal and objectives of the Central Zoo’s conservation education program are presented. In the third section, it is suggested that target audiences need to be carefully identified to understand their diverse backgrounds and needs. In the fourth section, it is suggested that the major conservation themes and topics should be identified and matched to the needs of each target audiences’ environmental and socioeconomic characteristics. In addition, techniques and strategies for the information dissemination should be carefully selected, considering the target audience’s backgrounds and knowledge. The information dissemination techniques should be determined on the basis, of the designed programs’ goals and objectives.

Beside these, this paper also deals with the necessary staff, equipment and budget requirements to implement the designed conservation education masterplan. Finally, an ongoing evaluation is required for the continued improvement of the conservation education programs.

2. BACKGROUND STATUS:
A "zoo" as a “institution for managing and exhibiting a collection of living specimens of wild animals” has a unique and enormous potential for conservation education. It can play a vital role in bringing environmental and conservation awareness to the Nepali population. KMTNC of Nepal, as a non-governmental, non-profit, autono-
mous environmental organization, has taken the challenge of renovating Nepal's only zoo, the Central Zoo, into an Experiential Conservation Education Center. With its already established audience of over a million visitors every year, half of them from rural areas, the Central Zoo must not miss its opportunity to educate these diverse groups of Nepalese. Having said that, it is clear that improving animal management and the zoo’s infrastructure are priorities for achieving that defined goal. At the same time, education needs to be a major part of the Master Plan process as it requires equal research, design, staff training and long term planning. Some “fast track” programs will also be essential to change the image of the Central Zoo, and it should progress concomitantly with the each stages of physical and architectural layout designed by the Master Plan team. Currently, the only form of education for visitors is watching the animals and, for the illiterate (in Nepali language) visitors, exhibits signs. In the case of school children, they visit the zoo merely as a form of recreation and as a school outing. The students travel around the zoo in an average group size of 40, usually with only one or two teachers or supervisors. The group size, in combination with the layout of the zoo, makes close observation and inquiry nearly impossible. Teachers are forced to rush the students along in order to maintain order and prevent blocking the walkways. In addition, many of the teachers do not have a basic knowledge of wildlife, as it is beyond the scope of regular classroom material. Therefore, the animals in the zoo should be properly exhibited and be well cared for and a physical location for educational activities should be provided. Secondly, unless a variety of educational programs are offered, visitors will continue to only see animals and miss a wealth of educational opportunities. Keeping this challenge in mind, the following projects and programs are recommended to be launched and initiated by KMTNCI Central Zoo to meet the needs of different target groups.

3. PHILOSOPHY, GOALS AND OBJECTIVES:

"People will not initiate change unless they believe they will benefit from it"

No nation is free of environmental problems. In terms of Third World countries like Nepal, poverty, overpopulation, poor planning, and overemphasis on short-term economic gain without consideration of environmental consequences are major causes of environmental degradation. Fortunately, environmental problems are no longer considered inevitable. Throughout the world, national governments and private groups have begun to realize that improved management of their countries' natural resources means an improvement in the lives of their citizens. Although public education is often overlooked, it turns out that it is vital to the success of environmental management efforts. The most reliable way to obtain people's cooperation in this endeavour is to demonstrate how it will benefit them. This is, in short, the role of conservation education in the zoo.

Broadly, conservation education can be defined as "any type of education that brings about improved natural resource management and reduces environmental damage". *(See Appendix A for the detail of philosophy and rationale for conservation Education in the Zoo). It can include a wide range of subjects, especially within the science and natural resource management, and can be directed, formally and informally, to a variety of target audiences.

Its major goal and objectives are:-

Goal: To help people to appreciate the importance of their environment and to motivate them to act in an environmentally responsible manner to improve environmental management.

Objectives:
1) to help people become aware of and appreciate the value of natural resources and the ecological processes that maintain them.
2) to help people know and understand what threatens the well-being of their environment, how the environment should be managed, and how they can contribute to its improved management.
3) to motivate people to do what they can to improve environmental management.

The task of meeting all three of these objectives distinguishes conservation education from other types of education and instruction. To fulfill the above objectives, the target audiences need to be identified first and conservation education themes and topics should be matched accordingly. Each education program's objectives, information, communication methods and audiences must be carefully identified if the programs are to realize their ultimate goal - improved environmental management.

4. IDENTIFICATION OF TARGET GROUPS:

"We cannot expect to change people’s behavior without an understanding of the social context in which they live"
For successful conservation education first the target audiences must be identified. To identify different target groups and their education needs, a broad and representative survey needs to be conducted. The inclusion of a wide range of public (both visiting and non-visiting) from different economic, political, social, and religious backgrounds, will be helpful in identifying broader needs. In identifying these groups, not only the people who directly cause the problems should be considered, but also others, such as intellectuals, community leaders, government officials, and to general public, who can influence these people and their decision making. People in position to support or initiate wise environmental management who are not effectively doing so, are as much a target group for education, as those who directly cause degradation.

Survey questionnaires should be designed for different target groups. For example, we should include the general public, both zoo visitors and non-visitors; foreign tourists; and the whole spectrum of both well educated to uneducated persons. We especially want to include people who cannot read and write, and therefore must be surveyed orally, in their mother tongue. *(See Appendix D for the samples of Preliminary Visitor Survey)*.

**Probable target group(s):**

A: General Public  
1. Adults  
a. Educated public  
b. Uneducated public  
c. Foreign tourists  
d. Children (not-in-school)  
B: Students  
1. Pre-school  
2. Primary (class 1-5)  
3. Secondary (class 6-10)  
4. Tertiary students (campus)  
5. Handicapped students

5. CONSERVATION THEMES AND TOPICS:

For conservation education to be effective, it must be tied closely to the environmental and social characteristics of the target group itself. The conservation education programs should be sensitive to the local cultures, languages and different ethnic backgrounds. They must also consider various groups, such as women and minorities, since these latter groups are the major users and collectors of firewood, for one example. However, an understanding of key environmental issues is important for the development of successful conservation education programs. Although major conservation and environmental problems of Nepal are already identified and known to us, the general consensus upon which environmental issues and problems that need to be addressed from the zoo conservation education programs need to be agreed upon. To reach a consensus on which are the major environmental issues to focus on, a joint effort of different environmental organizations and experts is required. To do this, the above survey(s) could be used or this question could be included in the survey questionnaires.

**Suggested Themes and Issues For Major Target Group:**

**Children:**

*Themes*

Environmental and Conservation awareness; respect for the environment, awareness of our interconnectedness.

*Topics*


**Adults: Educated and Uneducated**

*Themes*


*Topics*

- Population Explosion: Encroachment of Marginal Lands
- Deforestation: Disappearance of valued forest products, disruption of ecological processes, etc.
- Soil Erosion: Loss of topsoil, underproduction of crops
- Habitat Loss: Loss of aesthetic values
- Wildlife Depletion: Wildlife management problems, poaching, illegal trade, etc.
- Misuse of Insecticides: Environmental hazards, health hazards, etc.
- Abuse of Parks and Protected Areas: Human and wildlife conflicts
-Pollution (Water, atmospheric, noise, etc.)

6. STRATEGIES AND TECHNIQUES:
How do people receive new information and ideas (formally and informally) are important aspects of the conservation education program. In order for it to be effective, the program should be flexible and long term in nature and emphasize 'Experiential' than 'Traditional' learning techniques.

Suggested Strategies:
1. Extension or Outreach Programs
2. School Programs
3. Club and Non-Governmental Organizations
4. Mass Media- Television, Radio, Newspapers, Magazines, etc.
5. Special Printed Materials: Brochures, flyers, coloring books, comic books, story books, photo novels, etc.
6. Exhibits and Demonstrations
7. Street Theater, Road Shows (Sadak Natak)
8. Special Events (Bhoto Jatra, Nag Panchami, etc.)
9. Audiovisual Programs - such as the Zoo Slide Show, etc.
10. Hindu and Buddhist Myths, Nepali folk-story telling, songs (dhohori gits), proverbs, poems, art displays and contests, parables, dancing (contests, etc.)
11. Miscellaneous Materials Bumper stickers, T-shirts, posters, games, toys, etc.
12. One-to-one Communication (Word-of-mouth)

Suggested Programs:
I. Public programs
   1. School Programs
   2. Workshops, Lectures, Special Events
   3. Press, TV, and Radio
   4. Volunteer Activities and Friends-of-the-Zoo Groups

II. Interpretive Programs
   1. Signage, Labels and Graphics
   2. Interactive Stations
   3. Tour Guides and Zoo Keeper Talks
   4. Audio / Visual Programs
   5. Visitors’ Center
   6. Printed Materials

III. Conservation Education Outreach Programs:
   1. Zoo Street Theater Shows (Sadak Natak)
   2. Coloring Poster Publication in the Newspapers, the Colorful-Friends of the Central Zoo, etc.

Each of the above-suggested programs is defined briefly in the following sections.

I. Public Programs
Having established a captive audience of diverse groups and backgrounds, it is essential to design a variety of programs for various target groups and to present them in different ways. This should also take into account visitors' existing value systems and knowledge, and how they receive information. Furthermore, a conservation education program's content should be carefully selected and organized so that it will meet the needs of each target group. *(See Appendix F for Educational Sites on Architectural Design of Master Plan).*

1. School Programs
   A school program should be an immediate priority as an average of two hundred students visit the zoo daily. The public's perception of education is often limited to formal school learning. In the zoo, the school program is the only visible form of education since signs, graphics and other methods may not be directly perceived as education by the public.

Despite the fact that school programs are a priority, they should not be implemented before the zoo is prepared to offer quality programs. Therefore, the long term goals for school programs should be determined and different phases of implementation should be established first. Curriculum and the necessary materials will need to be designed. Individual topics for different age groups should be identified, and games and activities collected and designed for each group. *(See Appendix C for the senile of Zoo School Education Pilot Project)*
2. Workshops, Lectures, and Special Events
Besides school children, conservation education should also be available for the adult visitors, campus students and children who are out-of-school. A variety of education programs can be designed to meet the need of these audiences, too. There are numerous means through which these groups can be attracted for conservation education. The zoo could offer a calendar of events that changes periodically. The program structure and topics could be designed according to their interests and what is marketable.

The zoo staff could run program for adults and/or for children. The zoo could invite and coordinate outside resource people to offer lectures for the public and university students at the zoo. University students could also do research that could be beneficial for the zoo animal management. The zoo should also sponsor special community events such as World Environment Day or incorporate religious festivals such as Bhoj Jatra and Nag Panchmi, as many carry considerable environmental messages and significance. However these types of programs require staff to be creative, motivated and organized to facilitate the events. In many cases other organizations or individuals can run the programs, but the zoo needs to take the initiative and organize events. The zoo needs to be active in any program that takes place at the zoo. Even if another organization sponsors an event, whether or not it is successful, it still reflects on the zoo.

3. Press, TV, and Radio
Education should not be limited to the zoo itself. Mass media could also be an effective way to educate the public. It will also help in the publicity and advertisement of the zoo. Press releases should accompany any zoo news, such as the birth of a new baby animal or about the changes taking place, and to prepare the public for their implementation. Nepal TV and Radio Nepal could both offer programming that is educational and entertaining. Again it requires staff creativity and initiative to make the arrangements and get them interested.

4. Volunteer Activities and Friends-of-the-Zoo Programs
Most of the zoo depends on volunteers in some way. It is great way to get the community involved and to help the zoo to achieve some of its goals. Volunteer activities can include one-day events or long-term volunteer activities.

A Friends-of-the-Zoo Organization should be established and could be multipurpose with different types of memberships. Local businesses could be donors or sponsor exhibits or individual animals. Individuals could also join as financial supporters of the zoo or as active volunteers, such as tour guides or school program facilitators. Running a volunteer program requires extreme organization and a major time commitment. A volunteer program of any size requires a coordinator. Volunteers must be recruited and matched with the responsibilities they are interested in and capable of. They need to be trained and evaluated regularly. It is essential to plan and organize the program before volunteers are recruited in order to provide legitimate projects or work. They must be rewarded for their service through recognition and special events for volunteers.

1. Interpretive Programs
In the context of a zoo, "interpretation" refers to all the programs offered within the zoo for the visitors. Collectively, interpretive programs are intended to explain, demonstrate, and facilitate a zoo experience, thereby interpreting what the visitors are seeing. It is a general term that includes a variety of educational materials. Again, the different programs and techniques should be complementary. Therefore, program design requires long term planning with different phases of implementation. The following is a list of programs that should be included in zoo education.

1. Signage, Labels, and Graphics
Signs, labels, and Graphics need to be visually pleasing and interesting. They need to have consistent/complimentary color schemes and be located in strategic positions. Long term planning requires knowing the zoo layout and the traffic flow. Signs and graphics should be limited to priority topics so that visitors can comfortably absorb, rather than be overwhelmed by, information. This requires not only knowing what visitors are interested in, but also determining what areas of conservation education the zoo wants to focus on. The target audiences need to be identified and then priority topics should be selected and prioritized. It is essential to know how people receive information because signs, labels, and graphics are open to individual interpretation. Careful planning is required to communicate the intended messages. With all this consideration in mind, careful research and planning is essential for effective visual communication and to avoid wasting effort and money.

a. Signs: Signs should inform visitors about the zoo rules, give directions and locate facilities. Signs should be bilingual (Nepali and English) to enable a large percentage of the visitors to understand, and as many signs as
possible should have non-verbal graphics for those visitors who are unable to read. (* See Appendix B for samples of signs).

b. Labels: Labels for exhibits should do two things: identify the exhibits and give visitors information about the exhibits. How much information and explanation is provided depends on visitors' interests and priority topics. For example, a label for Black Buck may include information about mating and raising young if the zoo has a breeding program. However, the gestation period of porcupines is less interesting than the function of their quills. Some exhibits may require more information which means that others should have less. As stated above, labels should not offer more than visitors can reasonably absorb. (*See Appendix B for examples of old labels, the temporary labels which were made during the transition phase, and some suggestions for future labels - with color illustrations and maps and symbols of habitats.)

c. Graphics: Graphics are the visual representation of a concept. They are essential for illiterate visitors and can provide all visitors with better understanding of certain concepts. Food webs are a good example of a concept that is difficult to convey without graphic representation. Knowing how visitors receive information is especially important for graphic design, as pictorial messages are even more open to interpretation than written ones.

2. Interactive Stations
Interactive stations are participatory exhibits where visitors can touch and feel or do an activity. An example of an interactive display is a cement impression of a cat footprint that shows how its walk is adapted for hunting. Children can put their hands and feet in the footprints and get a better sense of how cats move differently than other animals. It conveys one of the reasons cats are such powerful predators and it is also an example of how animals adapt to their environments. Such experiences are fun and memorable and can reiterate messages by making them more real.

Interactive displays need to be designed to be safe, durable, and to communicate specific messages. They must be designed for specific target audiences. Space and traffic flow need to be considered and again, topics should be prioritized, because there should only be a limited number. *(See Appendix F for the Interactive Stations).

3. Tour Guides and Zoo Keeper Talks
Verbal information transfer and visitor interaction with staff is essential for effective zoo education. Direct communication is one of the most effective ways to educate people because it can be personalized and visitors can ask questions. Positive interactions with staff will often be what visitors remember most.

a. Tour Guides: A variety of programs should be implemented to accommodate the diversity of visitors. Some visitors are interested in general tours about the entire collection. Others want more specific, in-depth tours, such as just birds, or just endangered animals.

Staff training is the most, essential aspect of a tour guide program. It requires knowledge about the collection, and perhaps more important, effective interpersonal skills. A Training is needed to be designed that includes techniques and information for tour content. It should be decided if staff or volunteers will serve as guides. Tour guides should receive regular visitor and peer evaluation so that they can improve their services.

Scheduling is also a major consideration for which knowledge of peak visitation hours is necessary. Tour groups should be no larger than twelve people. Tours need to move throughout the zoo in a way that does not disturb other visitors or create large crowds in one area. Tour guides should have uniforms. It also should be determined in which language tours need to be offered.

b. Zoo Keeper Talks: Zoo keeper talks are opportunities for visitors to see first-hand and understand animal management at the zoo. There can be regularly scheduled talks for activities that keepers do every day, such as mounting the visitor carriage on the elephant. This would allow the elephant keepers to explain the work they do and how complex elephant training actually is. Keepers could also talk at feeding times. The keepers have unique knowledge about the individual animals in the zoo. They can provide information that nobody else can, such as, "This monkey is in a bad mood today." This type of personal information is essential for instilling a respect for animals and teaching people to view them as other living beings. Keeper talks require staff training for proper animal handling and developing interpersonal skills. Scheduling and visitors' interests should also be considered.
4. Audio/Visual
Audio/visual programs have a great potential for bridging experiences in the zoo to the natural environment. Education in the zoo is limited to what can be observed. Slides and videos should be collected and created which present topics that cannot be conveyed at the zoo alone. For example, the zoo can explain why and how rhinoceroses are poached, but we cannot demonstrate or show this. Watching a video on this topic would have much greater impact than just facts. Audio/visuals are also a great technique for teaching illiterate visitors. However they should not be longer than 10-20 minutes to maintain viewers' attention and their effectiveness. There is very limited number of existing environmental videos in Nepal. It will be necessary for the zoo to produce, or hire someone to produce videos, to build up an adequate collection. *(See Appendix E for sample of Slide Show Script -English and Nepali)*

5. Visitor Center
The visitor center should provide visitors with a variety of informations. It should include information on the different programs offered and current zoo events and news. It should be a resource center that has a variety of resources such as books, posters, and pamphlets to be used in the center. Most of all, it should be a place to welcome visitors and prepare them for their visit by explaining the zoo rules, what is offered and what to look for.

The visitor center should be located near the entrance to encourage visitors to make use of it. The layout of the room must be planned and materials must be created and attractively displayed.

6. Printed Materials
A zoo map, guides, and brochures on special topics need to be produced. Guides offer directions within the zoo with limited information. Brochures are more specific and provide more in-depth information. For example, brochures may be produced for the endangered animals or the cats, or the birds of prey. Priority topics and visitor's interests need to be determined. Again, these materials should be bi-lingual.

Printed materials should provide information in clear and simple language (and in the language(s) that the visitors can read). They need to be attractive and interesting. It needs to be determined which printed material will be free and which will be offered at charge. Printed materials need to be updated and new items offered on a regular basis.

III. Conservation Education Outreach Programs:

1. Zoo Street Theater
This could be one of the programs for the general public that Central Zoo can run in collaboration with other organizations (i.e. IUCNIECCA), since they have already launched such programs and they have been very effective in raising people's awareness of and interest in environmental subjects. These programs could also include exhibits, demonstrations, films, slide shows, dramas, puppet shows, etc. The information presented could range from practical guidance in conservation techniques to general ecological concepts.

2. Coloring Posters and Animal Puzzles in Publications
These materials would be helpful both for publicity of the Central Zoo as well as for fundraising. For example, a coloring poster and puzzles containing animals of the Central Zoo could be published in the local newspapers or produced separately as zoo souvenirs.

7. IMPLEMENTATION
All of the above steps are important preparations for the implementation stage. However, it should be kept in mind that the implementation stage is crucial in bringing the above goal and objectives into practice. To implement the above defined programs, the Central Zoo must first recognize the paucity of its existing resources and capabilities. The following requirements must be made before launching any of the above programs.

7.1 Staff, Equipment and Budget Recommendations:
One of the main constraints facing the Central Zoo Conservation Education Section is the lack of trained manpower, and equipment for running C.E. programs. Therefore, staff requirements, equipment, housing and facilities are all major considerations.

First Priority: The Head of the Conservation Education Program should have officer status and be on the same level as Head Curator (as soon as possible).
Second Priority: A School Program Coordinator with training and experience as a teacher should be appointed to work with the Conservation Education Program Officer to develop school/zoo programs (as soon as possible).

Equipment needed (as soon as possible): A back-up generator to avoid computer generated materials being lost due to electrical failures (as well as interruptions of audio/visual presentations, etc.). Second, a Laser printer is also required for the efficient and quality production of C.E Materials. Third, a Video Camera and Photographic Camera is required for the production of videos, photos and slides. For example, events, such as new baby animals born in the zoo could be easily videotaped and used as educational resources for the Conservation Education Programs.

Currently there is only one building to house the visitor center, the school program, and the audio/visual center. This is adequate for the present, but for any of these three to reach its full potential, additional facilities will be necessary. The visitor center should always have a staff member on duty to welcome visitors, answer questions, and monitor the room. This will also require staff training. A quality school program requires well-trained and qualified facilitators. This would make the student group sizes small enough for proper communication and learning.

7.2 Time-table (Short and Longterm)
Educational Projects already completed: Introductory Slide Show, Children's Activity Books, Pilot Project for Zoo/School Educational Program, Information Counter.

Educational Projects - underway: Visitors' Survey, New Zoo Brochure, New Signs with Zoo Rules, New Enclosure Labels. Educational Projects - immediate needs: Graphics at zoo entrance explaining the plans to renovate the zoo and create a conservation education center. Work with the Public Relations Officer to set-up the new Souvenir Shop (providing educational materials for purchasing).

7.3 Coordination with other Zoo Departments and Conservation Organizations
Conservation Education programs must be designed with coordination and participation of those who ultimately will be implementing them. For example the public relations officer and other zoo staff may help generate needed programs and assist in planning and carrying out such programs. The public relations department should absolutely know about all C.E programs for PR opportunities. They should take photographs and write news releases on, especially, all new programs at the zoo. Other zoo staff, such as the curator or veterinarian might also participate in C.E programs. The Conservation Education coordinator has already begun working with the other local conservation organizations, such as K.MTNC, WWF, IUCN, ICIMOD, and others, seeking their advice and suggestions on the Conservation Education part of the Master Plan. It is imperative that these groups continue their collaboration with the C.E programs at the Central Zoo. Conservation is too big a job for all of us not to work together. It needs all of us.

8. ON-GOING MONITORING AND EVALUATION:
"A conservation education program cannot be considered successful unless it is reflected in people's behavior and unless that behavior change favorably affects environmental problems" Is an long term goal and cannot be appraised within a short period. However, evaluation should be carried out while the education program is in progress as well as after the effort has ended on the basis of its short-term and long-term goals. Carrying out periodic evaluation while the program is in the progress can enable to make mid-course changes and improve the effectiveness. Evaluating at the end of effort can benefit further refinement of the program for its future implementation.

Prioritization of tasks:
Stage one:
1 - AN Center set-up, including collection and development of AN materials (underway)
2 - Brochure, sign posting and labeling (underway)
3 - School Program (underway)
   - Design preliminary questionnaire to assess students' existing knowledge background
   - Design and set curriculum for pilot-testing, including goals and objectives of the school program
   - Design post-evaluation questionnaire for assessing what students have learned from this program
   - Evaluation of pilot-test project as whole and prepare report and procedure for future conduction of such programs with other school
4 - Children's Coloring Book -Design, Print (under-way)
5 - Sponsor-An-Animal and Friends-of-the-Zoo (In collaboration with Public Relations) (underway)
6 - Visitor Survey (underway)
   - Questionnaire design
   - Survey
   - Survey results and reporting
7 - Publication and production of zoo animal coloring posters and pamphlets, T-shirts, Zoo puzzles, and other souvenirs

Stage Two:
8 - Grand Public Survey before the implementation of Masterplan
9 - Design new brochures, signs, labels and graphics for the new layout of the zoo
10 - Continue to develop and implement the zoo/school C.E. program and public programs
     - Evaluation and modification of C.E. programs

Next phase:
Similar stages will follow for the development of curriculum for children of higher classes and for the public and their potential and constraints for their continuation will be discovered.

9. References:
Western Regional Environmental Education Council, (1983). Project Wild; Elementary Activity Guide. USA
Part 9

Course Evaluation and Certificate Ceremony
EVALUATION FORM

First South Asian Zoo Education Workshop — 7 - 12 August 2000
Central Zoo, Kathmandu — Asian Regional Network of International Zoo Educators (ARNIZE)

Workshop content
Overall, what did you find most useful about the workshop?

Over all, what did you find least useful about the workshop?

What would you have liked that was NOT in the workshop?

How useful was this workshop compared to other workshops you have attended?

Which type of sessions did you prefer (rate by number in order of preference with 1 least and 10 more)
Zoo Education Lectures __
School programme lectures ___
Conservation lecture ___
Interactive sessions ___
Hands on exercises ___
Videos ___
Zoo visit ___
Zoo demonstrations ___
Panel discussions ___
I love this little bear exercise ___
Masterplanning/proposal writing exercises ___
Participants presentations ___

Comments:

How will your zoo education programme be changed as a result of this workshop?

Hospitality / Ground arrangements

Please tick most appropriate Excellent Adequate Not adequate
Airport pickup & transportation
Briefing materials and handouts
Hotel rooms
Hotel food
Lunch at Zoo
Office facilities
Space for comments and suggestions on hospitality & ground arrangements

Individual lectures
In the third column rating scale, circle the most appropriate number to express your rating, with “1” as most liked and “5” as least liked.

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic or Activity</th>
<th>Rating scale</th>
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</table>
| DAY 1 | MONDAY 7 AUG
Theme Why Zoo Education
9.00-9.15 Opening statement — Why Zoo Education
Dr. U.S. Seal, Chairman, CBSG, SSC, IUCN  | 1 2 3 4 5 |
9.15-9.45 Welcoming and introduction of KMTNC/Central Zoo with video show
Dr. Prahalad Yonzon, Trustee, KMTNC  | 1 2 3 4 5 |
9.45- 10:00 How Zoo Education can help the official wildlife agencies
Dr. Narayan Podel, Director General, DNPWC  | 1 2 3 4 5 |
10:00-10.15 Role of WWF in Conservation education
Dr. C.P. Gurung, CR, WWF-Nepal  | 1 2 3 4 5 |
10.15-10.30 Role of IUCN in Conservation education  | 1 2 3 4 5 |

Part 9 : Course Evaluation and Certificate Ceremony
Day 2
8 Aug — Tuesday — Theme for Day: WHAT is your message?
9:30-10:00 Conservation of Biodiversity — Dr. M.K. Chalise, KU
10:45 - 11:15 Teaching about invertebrates in the zoo — Dr. B.A. Daniel, Entomologist
11:45 - 12:15 The Amphiblian Crisis — how to get the message across — Sanjay Molor
12:15 - 12:45 Animal Welfare message in Zoo Education / Visitor Behaviour — Sally Walker
12:45 - 1:30 Rhino and Elephant Conservation Crisis — DWLNP
2:00 - 2:45 Environmental Education (EE) — introduction Meena Raghavan
2:45 - 3:30 Teaching CE/EE using the zoo as a resource — School teacher (Shuvanurraa)
3:30 - 4:15 Linking CE/EE in zoo to local school curriculum Discussion with participants showing examples of CE/EE curriculum

Day 3
Wednesday — 9 August Theme for Day: WHO is your audience?
9:30-10:15 Know your audience: visitor surveys; targeting different levels and types of visitors — Meena Raghavan
11:15-12:00 Bhanubhakt School CE activities with the reference Essay Competition at Godavary — Teacher of Bhanubhakt School
1:45-2:30 Preparing a presentation for different types of audience — Meena Raghavan
2:30-3:15 School Role in CE — Teacher of Mt Kailash School

Day 4
Thursday — 10 August Theme for day: HOW to organize your education program or plan.
Mechanisms; Special focus
9:15-10:00 HOW to educate: use interpretation — Meena Raghavan
10:30-11:45 In the zoo: Keeper talks; Touch tables; Environmental enrichment devices; zoo trail (using book dev. by Central Zoo)
12:00 -12:30 Conservation education program in relation to Bird Conservation H.S. Baral
12:30 -1:00 Gharial threats and conservation — Narayan Poudyal, Senior Ecologist/ Gopal Upadhya, DNPWC
1:30 - 2:00 How to be creative — 10 steps (and)
2:00-2:45 Designing cage labels and brochures. Slides of different types of exhibits, cages labels and graphic designs — Meena Raghavan
2:45-4:15 Hands on practice session: Participants design an exhibit label or a brochure: report / show and explain their label before tea
4:30-5:30 Design a touch table. Two groups of participants work up a touch table selecting from artifacts provided...
5:30-6:30 Special presentation from Lahore Zoo: setting up an education program. Discussion — Arshad Tosey and Uzma Khan

Day 5
Friday, 11 August — Theme for day: HOW, continued.
Budgeting and fundraising, "in-kind" collection
9:15-9:45 Fund Raising from local sources in relation to Central Zoo, Kathmandu — R.K. Shreshta, Director Central Zoo
9:45-10:15 Marketing strategy in relation to crane conservation — R. Suwal, Lumbini Sarus Crane Sanctuary
10:45-11:15 Marketing strategy in relation to conservation activities ECCA representative
11:15-12:30 Interaction with Zoo and Conservation Community and NGOs for
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>12:30-1:00</td>
<td>Fundraising from foreign organisations and other sources outside the region/ Proposal writing/Budgeting for Education -- Sally Walker</td>
</tr>
<tr>
<td>3:30-4:15</td>
<td>Develop a Master Plan for your Zoo exercise</td>
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<tr>
<td>4:30</td>
<td>Proposal including all budget items exercise</td>
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Part 9: Course Evaluation and Certificate Ceremony
Evaluation
First South Asian Zoo Education Workshop — 7-12 August 2000
Central Zoo, Kathmandu, Nepal
Asian Regional Network of International Zoo Educators (ARNIZE)

Overall, what did you find most useful about the workshop?

- This workshop proved very useful for all of us in preparing master plan for zoo education & conservation in our zoo.
- To refresh the old memory and implementation of theme in our existing environment for the welfare of Animals.
- Friendship - Coordination, Co-operation and understanding about the regional issues especially on educational methods. Where we stand and what we need to do in our respective field.
- How we can start out zoo education programme in zoo for conservation of wild populations. Preparation of master plan, proposal plan and how to carry implementation. Preparation of education plan for various target groups/interpretation. Brochure making. We know about the various education activity taking place in other country. i.e., Pakistan, Bangladesh, Nepal, Sri Lanka.
- This workshop is very useful in making master plan and action plan for zoo education in our zoo.
- I am very proud to join this workshop. I have learned very much from this workshop which is more than I can express. Actually, it was an orientation course to me.
- Over all I find various information about various sp. of birds, mammals, reptiles & their conservation & captive breeding in different zoo.
- I have gathered huge knowledge from this workshop by exchanging views with other participants. Nowadays, public awareness of zoo & wild life is a must. As a participant I have the confidence to implement zoo education activities in my zoo as early as possible.
- Master plans given by different zoo regarding their education activities were very useful. The other very important useful thing about the workshop was to meet people from different zoos of South Asia and at the same time to meet the Zoo Director of our own country.
- The educational plan of the Madras Crocodile Bank was rather hazy. This workshop was most useful in that it helped me to focus my activities into a definite plan which would be structured and thus give a more meaningful message. The most useful session was the development of the Master Plan.
- I believe that knowing all South Asian Zoo people face to face and share the experience & skills is itself one of the biggest achievement of the workshop. Besides this the hands on session was quite useful for all the participants. So that they can go back and implement what they learnt from the workshop.
- Session on funding by international donors.
- This workshop was more informative which dealt with the basics of Zoo education, how to plan, and execute it. The most useful sessions: Master planning, Fund raising and also Education Lectures.
- Hearing what people are doing in different zoo in different countries.
- Opportunity to share and get informed of various techniques and tools of zoo education, especially from the different countries.
- Workshop is well designed and well organized. "Taking ideas from other zoo towards conservation education to my zoo and learning what's happening in other parts of the world towards conservation issues are the important things" was very useful for me. Selling out ideas towards conservation by the zoo and NGO is an excellent session.
- Interactive exercise by Meena was most useful and at the same time gave an excellent break from the boring presentations. Meeting people from different countries was also an excellent experience.
- First time we met other country's zoo officials and heard about their zoo activities. Their problems, new projects, technologies etc.
- We have also learnt many things regarding zoo development like master plan for both zoo development & education.
- Conservation of wildlife through zoo management & getting people concern over the global threatening of nature is not an easy task.
- Exchange of ideas, knowledge through this kind of workshop seems to be very helpful to get to people of my country. Concern over the gradual degradation of nature & for myself having the people to do at least something for the country as well as the globe.
- Lectures of U.S. Seal was very informative, presentation of Sally Walker on education / visitor behaviour and presentation of Meena Raghubram on interpretation, environmental education.

Overall, what did you find least useful about the workshop?

- Time allotted to visitor activity is lot, it can be more comprehensive. All the things were useful.
- Why zoo education is necessary, how can I identify my audience?
- I think, by this workshop it will be very helpful to work together within sub continental zoos.
- Some matters were repeated several times by different presenters. The workshop was lengthy [both days and hours].
- Irrelevant presentation especially like crane conservation. This presentation should have been individual in CBSG workshop.
- I think certain presentations could have been easily left out. An example would be the Gharial threat and conservation. This would have been useful in a wildlife awareness seminar but it did not really present an education message. Also the Little Bear exercise was obviously incomplete. We performed the tasks but were not given told about the objective or the results of the exercise.
- Lecture about conservation.
- None
- None
- None
- Some local presentations.
- Some lectures to do with local conservation efforts, which had no bearing on education.
- Preparation of signages in zoos. The local people may be able to tell you what they want. Stereotypic information boards may be
boring and may lead to local brain drain and originality. This session might have been avoided.

The relevant presentation from different people.

All lectures were useful except some repeated by school teachers on some subjects with almost all similar activities.

Some of the unrelated topics not very close to conservation education.

None

Lecture on conservation

None

Presentation of one NGO of Nepal was least useful.

What would you have liked that was not in the workshop?

- More video shows.
- Video shows all zoo education programme. Exhibition of tools adopted by different countries.
- There were not representations of all subcontinent zoos. So, in some cases the workshop boundary is limited, specially we can say about Indian and Bangladesh zoo representatives.
- In long workshops we would like to have some more field trips for practical knowledge.
- One or two limited gathering of students and members of Friends of Zoo (FOZ) were supposed to be held in one or two session. From this gathering we could have got the real feature of the subjects.
- Outdoor visits and field visits.
- More education officers would have been invited in the education workshop to give their ideas.
- While appreciating that the majority of the South Asian Zoos are mixed, as an educator in a zoo specialising in one genera i.e., crocodilians I would have liked to see at least one lecture or presentation on education in a specialised environment. This would have had more bearing on my area than the mixed zoo environment.
- Use of computers in designing and producing educational materials.
- Field visit in the middle of the workshop to cut down monotony.
- Repetition of some lectures, giving the same information.
- Certain species - specific lectures.
- Night visit.
- More practical games from which a lot more could have been learned.

None

There should have been education officers in the workshop and education materials from the zoos of our region.

More field visits.

Some spare time to observe the natural resources of Nepal, especially wildlife in wild.

Almost all included.

Regarding detail programme about conservation information /lecture.

Some programme on field visit.

Participation of some horticulturists/botanists.

How useful was this workshop compared to other workshops you have attended?

In this workshop it was very clear what they wanted to tell us. Preparation material sent to us was useful in the workshop. The target group was not very big so interaction, flow of ideas and teachers had more close contact with the participants. It is informative in the real sense as per the requirement of the zoo.

Penal discussions and interactive sessions was useful compared to other workshops.

Not applicable to me as this is my first workshop.

Materials supplied were adequate.

Workshop was nice in all respects especially hospitality and close friendship. In comparison to other workshops it was more effective.

This is one of the most useful workshops that I have attended. It was more relevant to my profession and the field in which I am working.

I have not attended many workshops so my comparison would be inadequate. However, certainly this compares favorably to the ones I have attended.

This is first of its kind. It is most useful.

This workshop made me think differently over several subjects.

I have not attended any other workshop.

I learnt more techniques and this workshop was more interactive and had a target to achieve.

Considering it was one week only it was very useful.

Extremely useful. This had "opened my eyes" to zoo education. This workshop had lot more variety and depth than any previous one.

Supplied the most appropriate resource materials and few brain storming sessions by Seel makes it a memorable workshop in the recent past.

This workshop is an excellent initiative, for the first time a workshop has been conducted for our region on the subject which is so important but ignored for a long time - zoo education.

This is a completely different workshop and very very useful especially for education activities in our zoo with different good ideas of conservation message.

This workshop was good, but not as standard as LTM workshop due to lack of skilled resource persons.

Every workshop has its own importance and values, however managers realised that even the press people need to be educated about captive management.

This workshop proved much useful than the other workshops. We have a lot of discussions / interaction on the subject matter in this workshop.

Very much appreciable.

I have learnt a lot and this workshop was very informative from other workshops.
How will your zoo education programme be changed as a result of this workshop?

- The master plan which was developed for MCB through this workshop is the first concrete step in the education program. We now have a logical sequence to follow and have also designed the Hows/Whens/Whereas? etc. I feel our education program can now really be given a major boost to push ahead.
- Definitely the workshop has provided insight into the concept of zoo education program and it will change our presentation, information and interpretation style and content, which will change the visitors attitude towards conservation.
- By adding new items to the list and giving a new outlook to existing programs.
- Extension of the existing program, touch tables, introduce environmental education.
- I will have more hands on work, more demonstration, more interactive sessions and I will cultivate the press.
- Not applicable.
- Some of the educational materials supplied in the workshop are extremely useful and very good. This leads me to prepare good material for students and teachers in my zoo.
- There are certain things that I thought of incorporating in our education programme that I learnt from here like invertebrate models and amphibian pond. These economical ideas can strengthen our education program great deal.
- We will implement many new ideas and techniques of education in our zoo educational activities, we will also produce good educational materials along with new ideas of conservation message. This workshop also developed good relationship with other country's zoos and was useful in all aspects.
- I gained new ideas, learnt skills and approaches.
- We will go for further improvements, activity is to be scheduled for target groups, more practical oriented programs will be introduced.
- Up-gradation of signages, introduction of more attractive posters, up-gradation of interpretation centre, formation of information centre, organisation of nature camp for the school children, program implementation by involving WWF and NGOs.
- Getting ideas and knowledges ways to attract the attention of schools and college students and the people visiting zoo, that are adopted by the other zoos of the region.
- We will arrange signages, audio visual programs, brochures, booklets, touch tables in our zoo. We will establish eco-club, FOZ for community education. We will also arrange sponsors for fund raising.

Rating scale of individual lecture:
Rating instruction was 1 is best and 5 worst.

<table>
<thead>
<tr>
<th>Topic or Activity</th>
<th>Rate 1</th>
<th>Rate 2</th>
<th>Rate 3</th>
<th>Rate 4</th>
<th>Rate 5</th>
<th>No</th>
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<tr>
<td>Why Zoo Education-- Dr. U.S. Seal, Chairman, CBSG, SSC, IUCN</td>
<td>64%</td>
<td>32%</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Welcoming and introduction of KNTNC/Central Zoo with video</td>
<td>18%</td>
<td>23%</td>
<td>55%</td>
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<tr>
<td>How zoo Education can help the official wildlife agencies-- Dr. Narayan</td>
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<td>18%</td>
<td>46%</td>
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<tr>
<td>Podel, Director General, DNPWC</td>
<td>18%</td>
<td>23%</td>
<td>36%</td>
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<tr>
<td>Role of WWF in conservation education -- Dr. C.P. Gurung, CR, WW-Nepal18%</td>
<td>23%</td>
<td>36%</td>
<td>23%</td>
<td>0%</td>
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<tr>
<td>Role of IUCN in conservation education-- Dr. B.D. Pandey,</td>
<td>0%</td>
<td>41%</td>
<td>45.5%</td>
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<tr>
<td>Acting CR, IUCN-Nepal</td>
<td>9%</td>
<td>27%</td>
<td>36%</td>
<td>23%</td>
<td>5%</td>
<td>0%</td>
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<td>Dolphin Status and Conservation Prof -- Dr. T.K. Shrestha, T.U., Nepal</td>
<td>9%</td>
<td>27%</td>
<td>36%</td>
<td>23%</td>
<td>5%</td>
<td>0%</td>
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<tr>
<td>Red Panda status &amp;Conservation-- Dr. Prahalad Yonzon, Trustee, KNTNC</td>
<td>14%</td>
<td>36%</td>
<td>41%</td>
<td>4.5%</td>
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<tr>
<td>KNTNC overall activities Arup Rajaia, Director, KNTNC - Terai program</td>
<td>5%</td>
<td>36%</td>
<td>27%</td>
<td>27%</td>
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<tr>
<td>Educational Aspects of Central Zoo Masterplan Sanjeev shah, Ph.D., Engineer &amp; consultant</td>
<td>27%</td>
<td>23%</td>
<td>41%</td>
<td>9%</td>
<td>0%</td>
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<tr>
<td>Education in south Asian Zoos Participants presentations</td>
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<td>32%</td>
<td>27%</td>
<td>9%</td>
<td>0%</td>
<td>5%</td>
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<tr>
<td>Master planning for zoo Education: Central zoo Education Master plan as case study Ang Phuri</td>
<td>41%</td>
<td>45%</td>
<td>14%</td>
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<tr>
<td>Public Participation component of education Masterplan: Friends of Zoo, Nature Clubs, field trips, public functions Geeta Shrestha</td>
<td>27%</td>
<td>27%</td>
<td>23%</td>
<td>14%</td>
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<td>Central zoo Visit -- Dr. B.K. Jha</td>
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<td>4.5%</td>
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<tr>
<td>Conservation of Biodiversity-- Dr. M.K. Chalise, KU</td>
<td>9%</td>
<td>27%</td>
<td>46%</td>
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<td>4.5%</td>
<td>9%</td>
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<tr>
<td>Teaching about invertebrates in the zoo-- Dr. B.A. Daniel, Entomologist</td>
<td>36%</td>
<td>41%</td>
<td>14%</td>
<td>4.5%</td>
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<tr>
<td>The amphibian crisis - how to get the message across Sanjay Moler</td>
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<td>32%</td>
<td>23%</td>
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<tr>
<td>Animal Welfare message in zoo Education/Visitor Behaviour, Sally Walker</td>
<td>69%</td>
<td>41%</td>
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<td>Rhino and Elephant Conservation Crisis, DWLNP</td>
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<td>27.3%</td>
<td>36.4%</td>
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<tr>
<td>Environmental Education (EE) - introduction Meena Raghavan</td>
<td>45.5%</td>
<td>36%</td>
<td>14%</td>
<td>0%</td>
<td>4.5%</td>
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<tr>
<td>Teaching CE/EE using the zoo as a resource School teacher (Shuvatara)</td>
<td>14%</td>
<td>35%</td>
<td>23%</td>
<td>9%</td>
<td>18%</td>
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<tr>
<td>Linking CE/EE in zoo to local school curriculum Discussion with participants showing examples of CE/EE curriculum</td>
<td>18%</td>
<td>32%</td>
<td>36%</td>
<td>5%</td>
<td>0%</td>
<td>9%</td>
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<tr>
<td>Know your audience: visitor surveys; targeting different levels and types of visitors Meena Raghavan</td>
<td>55%</td>
<td>27%</td>
<td>9%</td>
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<td>0%</td>
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<tr>
<td>Bhanubhakta School CE activities with the reference of Essay competition at Godavary Teacher of Bhanu Bhakta School</td>
<td>5%</td>
<td>27%</td>
<td>14%</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
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<tr>
<td>Preparing a presentation for different types of audience Meena Raghavan</td>
<td>41%</td>
<td>50%</td>
<td>0%</td>
<td>0%</td>
<td>9%</td>
<td>0%</td>
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<tr>
<td>School Role in CE Teacher of Mount Kailash School</td>
<td>9%</td>
<td>9%</td>
<td>23%</td>
<td>18%</td>
<td>18%</td>
<td>23%</td>
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<tr>
<td>How to educate: use interpretation Meena Raghavan</td>
<td>55%</td>
<td>36%</td>
<td>4.5%</td>
<td>0%</td>
<td>4.5%</td>
<td>0%</td>
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<tr>
<td>In the zoo: Keeper talks; Touch tables; Environmental enrichment devices; zoo trail (using book dev. By Central Zoo)</td>
<td>36%</td>
<td>45.5%</td>
<td>9%</td>
<td>4.5%</td>
<td>0%</td>
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Part 9 : Course Evaluation and Certificate Ceremony

Evaluation analysis
<table>
<thead>
<tr>
<th>Comment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Conservation education program in relation to Bird Conservation</td>
<td>9 %</td>
</tr>
<tr>
<td>Ghanial threats and conservation -- Narayan Poudyal, Senior Ecologist</td>
<td>32 %</td>
</tr>
<tr>
<td>Gopal Upadhyaya. DNPWC</td>
<td>50 %</td>
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<tr>
<td>How to be creative - 10 steps (and) Designing a program around</td>
<td>4.5%</td>
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<tr>
<td>a Species or Special event -- Sally Walker</td>
<td>0 %</td>
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<tr>
<td>Designing cage label and brochures: Slides of different types of</td>
<td>68 %</td>
</tr>
<tr>
<td>exhibits, cages labels and graphic designs -- Meena Raghavan</td>
<td>27 %</td>
</tr>
<tr>
<td>Hands on practice session: Participants design an exhibit label or a</td>
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<tr>
<td>brochure; report/show and explain their label before tea</td>
<td>0 %</td>
</tr>
<tr>
<td>Design a touch table. Two groups of participants work up a touch table</td>
<td>0 %</td>
</tr>
<tr>
<td>selecting from artifacts provided</td>
<td>5 %</td>
</tr>
<tr>
<td>Special presentation from Lahore Zoo: Setting up an education program.</td>
<td>41 %</td>
</tr>
<tr>
<td>Discussion -- Arshad Toossey and Uzma Khan</td>
<td>55 %</td>
</tr>
<tr>
<td>Fund Raising from local sources in relation to Central zoo, Kathmandu --</td>
<td>5 %</td>
</tr>
<tr>
<td>R.K. Shrestha, Director Central Zoo</td>
<td>36 %</td>
</tr>
<tr>
<td>Marketing strategy in relation to crane conservation -- R. Suwal,</td>
<td>36 %</td>
</tr>
<tr>
<td>Lumbini Sarus Crane Sanctuary</td>
<td>14 %</td>
</tr>
<tr>
<td>Marketing strategy in relation to conservation activities ECCA</td>
<td>32 %</td>
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<tr>
<td>representative</td>
<td>27 %</td>
</tr>
<tr>
<td>Interaction with Zoo and Conservation Community and NGOs for</td>
<td>41 %</td>
</tr>
<tr>
<td>obtaining things for the zoo</td>
<td>32 %</td>
</tr>
<tr>
<td>Fundraising from foreign organisations and other sources outside the</td>
<td>14 %</td>
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<tr>
<td>region/Proposal writing/Budgeting for Education -- Sally Walker</td>
<td>14 %</td>
</tr>
<tr>
<td>Develop a Master Plan for your Zoo exercise</td>
<td>18 %</td>
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<tr>
<td>Proposal including all budget items exercise</td>
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</table>

Comments and suggestions on hospitality and ground arrangements:

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<tr>
<th></th>
<th>Excellent</th>
<th>Adequate</th>
<th>Not Adequate</th>
<th>No reply</th>
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<tr>
<td>Airport pickup &amp;</td>
<td>23 %</td>
<td>3%</td>
<td>0</td>
<td>13 %</td>
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<tr>
<td>transportation 64%</td>
<td></td>
<td></td>
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<tr>
<td>Briefing materials &amp;</td>
<td>18 %</td>
<td>5 %</td>
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<td>13 %</td>
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<tr>
<td>handouts 64 %</td>
<td></td>
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<tr>
<td>Hotel rooms 46 %</td>
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<td>13 %</td>
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<tr>
<td>Hotel food 18 %</td>
<td>50 %</td>
<td>18 %</td>
<td>0</td>
<td>13 %</td>
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<tr>
<td>Lunch at Zoo 64 %</td>
<td>23 %</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Office facilities 64 %</td>
<td>23 %</td>
<td>0</td>
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<td>13 %</td>
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</table>

Overall good arrangements pickup at the airport was much appreciable (Particularly after a much delayed flight) I would have liked to see more traditional Nepali food at the hotel instead of the usual continental preparation. The briefing material and handouts could have been more exclusive, some of the important points presented in the CEE sessions would have been very useful to the majority of participants. In this area, a handout would have helped. Otherwise it was adequate.

Very good. Therefore no comments.

It would have been better if arrangements were made to visit a National Park at least one. Also if the programme was not so tight scheduled and if free time was given around about 5.00 p.m. daily.

Everything perfect. It would have been nice to have all participants in same hotel.

They have done very good arrangement for workshop and personal. preparation of workshop, replied email very promptly; They provided the educational facilities like Jersey Wildlife Preservation Trust. It is excellent.

In a sentence — about the hospitality and arrangements was excellent and appreciable.

All participants may be arranged in same hotel. That will be more interesting.

Hospitality and ground arrangements would have been better if all the participants stayed in one hotel. Then more cooperation and coordination might have been seen.

Over all good; but we require more field trips of Nepal. Heartily thank Ms. Sally Walker who invited me to this great assembly of experts. I am sure it will help the course of conservation bringing in more know how on the modern lines.

Participants are coming from different parts of the region. Particularly hotel food served in the hotel may not be liked by all the participants. In that case, hotel authorities may kindly serve or attach a paper on the door of the dining hall about the kind of lunch or dinner being served to-day. Participants may put his choice to the hotel people.

We are very much thankful to the organisers and coordinators of this workshop for providing us hospitality and good arrangement during the stay at Kathmandu, Nepal from 7-13th August 2000 to attend South Asian zoo education workshop.

Overall good arrangements of stay, food and transportation; excellent arrangements made for educational materials supplied by organisers.

Nepal is a tourist country, so in the menu of the hotel there should be provision of halal food for Muslims. It was a problem here but later the hotel was providing halal chicken if you tell in advance. But if you forget be vegetarian.

A few items such as tourist to ecologically important places such as Tiger top, Royal Chitwan National Park heritage sites could have been arranged.

Part 9: Course Evaluation and Certificate Ceremony
Course evaluation and certificates

A detailed course evaluation form was created and participants asked to fill it.

In the explanation of the form, a short discussion on evaluating educational projects was held. The device of “front end evaluation” was discussed, in which the educator makes a simple “mock up” of a graphic or diorama and shows it to random visitors, asking what the text or arrangement means to them.

This type of evaluation is not possible for large projects such as a training course, or a whole animal exhibit. For such projects, a simple preliminary survey should be made to determine visitor or participant interest.

Participants were given certificates at the end of the course in a small and informal private but very moving ceremony. The fact of having come together for the first time as a professional group in the South Asian region was mentioned by almost all participants, who were given a chance to speak their minds and hearts.

Thanks were given all around. The form for the course evaluation follows as well as an analysis of the participants’ answers.
Part 10

Goodbyes and Thanks
Authors: Participants and Resource Persons

The "Authors" of this document are the Participants and Resource Persons who attended the South Asian Zoo Educator Course, August 2000, Nepal

Alahakoon, Jayanthi, Addl. Director/Vety. Officer, National Zoological Gardens, Colombo, Sri Lanka
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Baral, H.S.,
Chalise, M.K.,
Daniel B.A., Zoo Outreach Organisation, Coimbatore,
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Ghimere, Madhav, Veterinary Officer, Central Zoo
Gunasena, S., Director, Department of National Zoological Gardens, Dehiwala, Colombo, Sri Lanka
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Islam, Moh'd Serizul, Curator, Dhaka Zoo, Gardens, Dakha, Bangladesh
Jha, B.K., Veterinary Officer, Central Zoo, Kathmandu, Nepal
Kalaiarasan, V., Director, Chennai Snake Park Trust, Tamil Nadu, India
Khan, Uzma, Education Officer, Lahore Zoo, Pakistan
Maskey, Tirtha, M., (Representative) Director General, Dept National Parks Wildlife Conservation
Molur, Sanjay, Sr. Programme Officer, Zoo Outreach Organisation, Coimbatore, India
Nath, Shital Kumar, Curator, Chittagong Zoo, Bangladesh
Pandey B.D., Acting Director, IUCN - Nepal, Kathmandu Nepal
Poudyal N., Senior Ecologist, National Parks Wildlife Conservation of Nepal
Qazi, Mansoor Director, Karachi Zoological Gardens, Pakistan
Raghunathan, Meena, Centre for Environmental Education, Ahmedabad, Gujarat
Rajauria, Arup, Director, KMTNC-Terai program
Roy, N. C., Deputy Curator, Rangpur Zoo, Bangladesh
Sahu, R.K., Zoo Superintendent, Kamala Nehru Zoological Garden, Ahmedabad, India
Salam, M.A. Director, J.N.B. Park, Bokaro, India
Seal, U.S., Chm, Coconservation Breeding Specialist Group, SSC, IUCN, Minneapolis, USA
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Shag, Poonam, Ph.D., Landscape Designer, Kathmandu, Nepal
Shahidullah, Moh'd, Deputy Curator, Dhaka Zoo, Bangladesh
Sherpa, Ang Phuri, Education Officer, Central Zoo, Kathmandu, Nepal
Shreshta, Geetha, Friends of the Zoo Coordinator, Central Zoo, Nepal
Shreshta, R. K., Director, Central Zoo, KMTNC, Nepal
Shreshta T. K., Tribhuvan University, Nepal
Shrivastava, Pradeep, Superintendent, Gwailor Zoo, India
Suwal R., Lumbini Sarus Crane Sanctuary, Nepal
Taher, Humayun, Madras Crocodile Bank Trust, Chennai, India
Toosey, Arshad, Director, Lahore Zoo, Pakistan
Upadhyaya, S., Department of Wildlife and Nature Conservation
Walker, Sally, Founder/Secretary, ZOO, Coimbatore, India
Yonzon, Prahalad, Trustee, King Mahendra Trust for Nature Conservation

Part 10: Goodbyes and Thanks
Sponsors -- South Asian Zoo Educator Workshop

Gunther Nogge / Cologne Zoo / KMTMC
Germany

Universities Federation for Animal Welfare

UFAW
Established 1926

Appenheul Park, Netherlands

Apenheul

Central Zoo / King Mahendra Trust
for Nature Conservation

World Wildlife Fund, Nepal

World Wildlife Fund

IUCN, Nepal

IUCN
The World Conservation Union

Central Zoo Authority, India

Centre for Environmental Education, India

CEE

American Embassy, Nepal

Our grateful thanks to all of our sponsors and collaborators.
Central Zoo Staff who worked for the Workshop

Achut Raj Pant
Administration Officer

Ang Phuri Sherpa
Conservation Edu. Officer

Dr. B.K. Jha
Veterinary Officer

Dr. Madhav P. Ghimire
Curator

Geeta Shrestha
FOZ Coordinator

Nava Raj Lama
Accountant

Tuk B. Khadka
Administrative Assistant

Ganesh Koirala
Veterinary Assistant

Surat Bom Malla
Administration Assistant

Ramita Rai
FOZ Assistant

Kumar Kant Shrestha
Office Helper

Nil Bahadur Maharjan
Office Helper

Nil Bahadur Maharjan
Driver

Zoo Outreach Organisation Staff who worked for the Workshop

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Programme Officer

Ayyachamy, Daniel
Entomologist

Latha G. Ravikumar,
Sr. Manager

Sonali Lahiri,
Visualizer

V. Sheela,
Office Supervisor

A. Jyothi,
Typist

S. Sudha, Typist

V. Ravichandran,
Office Assistant

Geetha Kannan,
Accounts Assistant

Mrs. Sarojamma,
Despatch and Production Technician

Mrs. Veni,
In-charge, Screen Printing