

Conservation and Management Study of High Altitude Nainital Zoo (Uttarakhand) with Special Reference to Ecotourism

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Abstract:

The conservation and management of wild species in Zoo need a proper planning and expenditure, which provides us the information of our nature gift of wild life and promotes the ecotourism activities. The Zoo management and wild life requires new research planning for their better management and sustainability. [Nature and Science. 2009;7(6):39-42]. (ISSN: 1545-0740).

Key Words: Wildlife, Management, Conservation and Planning

Introduction:

Many wild species both plant and animals have become extinct from their natural habitats, because of destruction of forests as well as the other natural unit areas by the anthropogenic pressure. Therefore the remaining species are not in a position to cope up with the changing conditions of the environment. Expanding human population resulted in to expanding needs of man with the scientific progress and technology development; man started utilizing natural resources at a much larger scale. Conservation and management of wildlife not only preserving the remaining flora and but also helping in promoting economic activities that brings money through tourism. It also contributes towards maintenance of biodiversity of landscape. Many wild life such colorful birds, animals and other forms of life in the forest are the important in maintaining the ecosystem. Distraction of forests will cause disappearance of much wild life. Therefore it imperative to conserve and manage the forests as well as wildlife, which are in endangered and threatened condition, this also needs both conservation and management programme. The ministry of environment and forests of India has setup the separate wild life department for coordination between states and the central for speedy and faithful implementation of the steps to be taken in programme of wild life management in the country (Gopal 1992). As far as the concern of Indian region it has total area of 32 million hectares with rich in biological diversity. As we know that India is one of the 12 mega biodiversity centers in the world. It is estimated that about 45,000 species of plants comprise 15,000 species of which several hundred species are endemic to India. In 1976 the 42nd constitutional amendment acts (CAA) the forestry and wildlife are put in on the concurrent list. This has enabled the government of India to directly take the decision on the forest and wildlife conservation practices (Khanna, 1994). The origin of Zoo may be said to have commenced with the opening of the London Zoo in 1828, most of the older Zoos in North America and Europe were founded in the later part of the 19th century after 1870. During that period animal species were being regularly discovered and the various Zoo were keen to collect as many different kinds of animals as possible for public display. These animals were housed in cages behind or in small pits or in- enclosure having compounds, which did not differ much from the old menageries of the mediaeval times (Sharma, 2000). The Zoo movement in India is also one of the oldest in the world. The first Zoo was setup in Madras in the year 1855, which was seen followed by Trivandrum (1887), Bombay (1863), Hyderabad (1959) and Assam state at Guwahati (1960). During the last 30 years modern building material have been extensively used in the construction of animal enclosure. This is resulted in better ventilation and living space. Apart from improving the public viewing with the advancement of scientific knowledge pertaining to the biological requirements of captive animals. So as to facilitate captive breeding an ideal enclosure should enable on animal to freely display its various behavioral patterns. The nature based tourism involves education and interpretation of the ecologically sustainable natural environment. Ecotourism is viewed as a means of protecting natural areas through the generation of revenues, environmental education and the participation of local people. In such a ways, both conservation and management would be promoted in sustainable forms. The main objectives of study were given below. (i) To study the diversity of animals & birds (ii) to study their conservation and management procedure (iii) to study the relation between Zoo, ecotourism, education and awareness programme among the people.

Study area and Methodology:

Nainital is situated at 1938 m from sea level in central Himalaya of Uttarakhand state. Mr. P. Barren of Shajapur known as ‘Pilgrim’ was the first man who discovered the Nainital. The well known Nainital lake comes in the category of National lake. The area of the lake is 487639.40 m² and its perimeter is 3429 m. The length is 1372 m and breadth is 366 m. (Rawat, 1998). The Nainital zoo is situated at an elevation of 2100 m above mean sea level on the hill of Sher – ka – Danda where the mountain quail was last seen in 1876. this is also known as Pandit Govind Ballabh Pant high altitude Nainital zoo. The zoo was established in 1984 and is spread over an area of 4.69 ha. The zoo was declared open to public on 1st June 1995 and is managed by “The Bharat Ratn Pandit Govind Ballabh Pant High Altitude zoo Management Society” from 1st March 2002. The main objectives of zoo are to conserve the high altitude Himalayan birds and animals which all endemic and endangered and to create awareness about our rich Himalayan fauna among the general people. The zoo has also been created to facilitate the research and coordinate breeding of endemic and endangered Himalayan fauna and flora of many species of trees, shrubs and herbs.

Methodology:

According to study plan we visited weekly and collected the respective data based our objectives. Thereafter we developed the data tables for the finding obtained from the zoo like animals and birds details, expenditure for each animal and birds, category of tourists and their numbers, amounts earned from the tourists. Apart from this, we also studied the persons and organizations who adopted the zoo animals and birds for their annual expenditures.

Results: Conservation and Management

Zoo is an important ex – situ conservation procedure. It is not only for the conservation and management of endangered, rare and threatened wild animals and birds but also play a very crucial role in the ecotourism, education and public awareness about the wildlife. As far as Nainital zoo is concerned, it is an only zoo many species of birds and animals belongs to the high Himalayan regions is being conserved. The following animals and birds are being managed by zoo are-

1. Carnivorous

- Siberian Tiger (*Panthera tigris*), Snow leopard (*Panthera unica*), Leopard (*Panthera pardus*), Leopard Cat (*Felis bengalensis*), Tibetan Wolf (*Canis lupuschanco*) and Hill fox (*Valpus vulpus Montana*).

2. Omnivorous: Himalayan Black Bear (*Selenarctos hribetanus*), Palm Civet Cat (*Pagumo larvata*) and Himalayan Civet (*Martes flavigula*).

3. Primates: Japanese Macaque (*Macaca fuscota*) and Bonnet macaque (*Macaca radiata*).

4. Herbivorous: Sambar (*Cervus unicolor*), Sika Deer (*Cervus Nippon*) Barking Deer (*Muntiacus muntjak*), Goral (*Nemorhaedus goral*), Serow (*Capricornis sumatraensis*), and Rodents.

5. Birds: (a) Pheasants: Lady Amherst pheasant (*Chrysodophys amherstae*), Silver pheasant (*Pucrasia macrolopha*), Kalij pheasant (*Lophura leucomelanos*), Japanese Green pheasant (*Phasianus versicolor versicolor*), Chinese Ring Neck pheasant (*Phasianus colenicus*), Golden Pheasant (*Chrysolophus pictus*), Silver Golden Pheasant (*Syrmaticus humiae humiae*), Brown eared pheasant, Bornean Fireback (*Lophura Ignita*), Linnneated Kalij pheasant (*Lophura hychthemira lineate*), Edwards Pheasant (*Lophura edwards*), White Pea Fowl (*Pavo mutant*), Red Jungle Fowl (*Pavo cristatus*) and Swinhoe.

(b) Parakeets: Rose Ringed Parakeet (*Psittacula krameri*) and Blossom Headed Parakeet (*Psittacula cyanace phala*).

(c) Prey Birds: Steppe Eagle (*Aquiola nepalensis*), Indian Great Horned Owl (*Bubo bubo*) and Spotted Bellied Eagle Owl.

(d) Partridges Small Birds: Hill partridge (*Arborophila torqueala*), Scaly Brested Munia (*Lonchura punctulata*) and Red Advadat.

Zoo Management:

Zoo management is a very complicated task. It needs continuous watch and supervision of zoo animals and birds in the context of their diets and health care and sanitation works. The zoo authority and concerned zoo staff performed all these tasks regularly. Certain works performed daily by the zoo staff are mentioned below.

1. Checking of Flesh (Meat) for carnivores and food for Herbivores and omnivores:

Before providing flesh to carnivores, it is examined time to time by the experts. Available flesh should be odorless, proper in color and un- chopped. Food material like fruits, vegetables, green vegetables and millets are given to the herbivores and omnivores. The detail of animals and birds diet is given the following table.

S.No.	Animal	Food Material	Amount (Kg.,gm./ Day)	State
A. Carnivores				
1.	Siberian Tiger	Beef	11kg.	Un - Chopped
2.	Leopard	Mutton	3 to5 kg.	Un - Chopped
3.	Leopard Cat	Mutton	3 to 5 kg.	Un - Chopped
B. Omnivores				
4.	Cicvet	Beef & Banana	250 & 200 gm.	Boiled & Fresh
5.	Wolf	Flesh	2 to 2.8 kg.	Boiled
6.	Hill Fox	Flesh	600 gm.	Boiled
C. Herbivores				
7.	Bear	Vegetables(Brinjal, Pumpkin &Cucumber) Fruits, Kheer, Choker, Barley, Maize & Gram Flour	160 gm, 120gm, 120 gm. 160 gm. 240 gm. Rice, 120 gm. Gur & 1lt. Milk. 140 gm., 400 gm., 160 gm. & 140 gm.	Fresh
8.	Monkey	Fruits, Gram, Banana, Vegetables & Onion	400 gm., 100gm., 200gm., 100 gm. & 25gm.	Fresh
9.	Sambhar,SikaDeer, Goral, Barking Deer & Serow	Gram, Choker, Khali & Green Fodder (Small deer to large deer)	100 – 500 gm., 150 – 500 gm., 50 – 100 gm. Khali & 3- 10 Kg. Green fodder	Fresh
D. Birds				
10.	Pheasants	Chopped vegetables, wet wheat, cereals and chopped onion garlic	200 gm.	Fresh
11.	Munia, Eagle & Great Horned Owl	Meat	200gm.	Fresh

Diet Status of Different Animals in Nainital Zoo

- 2. Sanitation of cages:** Cleaning of cages, management of drinking water, cleaning of animal sheds and proper sanitation of bird's cages is very necessary.
- 3. Facilities regarding to animal health:** Health facilities are considered to be the backbone of the zoo. The wild animal kept in zoo are mostly rare and threatened, therefore protection is given to them and their progeny in the zoo.
- 4. Disease:** The disease are spread by the inhalation, food bite of animals and cuts in the skin, contaminated instruments, via coital and polluted water.
- 5. Quarantine:** Whenever a new animal is brought in the zoo, it is kept alone 20-25 days.
- 6. Preventive measures:** Vaccination for rabies and foot and mouth diseases should be done every year.

- Injection for hoof disease should be given before monsoon.
- Anti – worm medicines should be given to the animals in the 3-4 months time. Their fecal matter should also be checked from time to time.
- Blood test for blood protozoa should be done before the onset of monsoon, and the injection is given.

7. Tranquilizing of Wild Animals: It is very difficult to control an injured wild animal because they feel helpless and become aggressive. Therefore, medicines used for the control of wild animals by the giving the injections of Kitamin and xylazine. They should be given in the ratio of 1:1 or 1:2. The injections completely paralyze the animal for 10 – 15 minutes. During this period the possible treatment is given.

Eco – Tourism Activities:

Among tourists visited in the zoo, children (5-12 years age) and adult (>12 years) were 20.75 % and 79.3% respectively. Total numbers of tourists visited in the zoo during 2004 – 2005 were 94,884. Out of them maximum tourists (26.6%) were visited in the month of June, 2005 and followed by the month May, 2005 (15.9%). However, very small number of tourists came in the month of February 2006.

As far the economy is concerned, zoo authority earned total rupees seventeen lakh and one thousands forty only (Rs. 17, 01040=00). Of this amount received from adult and children tourists were 88.4 and 11.6% respectively. Of this total amount, about 26.3 % were earned during June 2005. The amount, 29.8 and 25.8 % came from children and adult tourists, respectively.

Conclusion

As our findings showed that the Zoo animals and birds needs proper management planning because the zoo has such species, which are rare, endangered and threatened in the natural habitats. Therefore such species either they belongs to the animals or to the birds category requires lot of investment for their look after for diet treatment from breeding activities. Managing the wild life species in Zoo also aware us and encourage our education and economy through the activity of tourism. Our findings indicate that the annual expenditure for the management of each species was very high. Therefore the zoo authority has invited the people and organizations are interested in the wildlife conservation and management for the adoption of the wild species kept in the Zoo for their annual expenditure. The money was also collected individually from tourists visited in the Zoo. This first afford to study the Zoo conservation and management programme in high altitude Nainital zoo. We studied the interest of people and other organizations about the wild life species and their relationship in the upliftment of our economy through tourist's activities.

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