

Zoo and zoo animals: ex-situ and in-situ conservation

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ABSTRACT

Aim: Purpose of the study was to determine to focus the overall management of a zoo for the welfare of animals.

Method and materials: The study was carried out on Alipore Zoo in Kolkata, National Zoo of Bhutan, Zoo Negarain Kuala Lumpur, Kuala Lumpur Bird Park, Safari World in Bangkok, Beijing Zoo in China.

Results: Results revealed that strategic plan as capture, restrain, handling, animal house, hygiene and parasitic control, nutrition, animal dealer/caretaker are important stages where management needed to taken over.

Conclusion: It was concluded that strengthen the research on the behaviour of all zoo animals and appropriate manpower whose will have fascination to conserve animals.

Keywords: Zoo, animals, ex-situ, in-situ, conservation, management

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Introduction

Animals have rights to live well. Domestic animals are our common accompany in rural areas and a great source of food for human consumption. If we maintain an in-situ habitat in zoo but when people enter to visit this zoo this could be ex-situ. So, scientifically it is not completely possible to maintain a real habitat for an animal in the zoo. Without human interaction, animals cannot survive in nature. When any thunderstorm occurs, birds nest, eggs, and young destroys easily. For animal conservation especially the endangered and vulnerable animals, zoo is important for captive breeding (Kabir, 2019a). Some animal poachers, illegal traders, and hunters are responsible to do many unethical animal activities. Dublin Zoo was opened for medical profession in studying animals while they were alive or dead (Costello, 2011). Bangladesh zoos are associated to donate or exchange of the animals with Saudi Arabia, Iraq, Kuwait, and Bahrain. In a perfect zoo, need an animal museum, taxidermy laboratory, animal hospital, and research section (Kabir, 2019a). Ecotourism services of Bangladesh are going smoothly with its potentialities for the welfare of animals as well as the country (Afjal et al., 2005).

Zoo can be a key point to the practitioners and academicians for research (Malakar et al., 2007). Wildlife Sanctuary, Safari Park, Game Park, Ecopark and Game reserve all are different for surviving animals. We should ensure the actual environment in all animal habitats. Excess sound, huge gathering, and unwanted photography should be prohibited in zoos. One should remember that zoo is not a recreational place, it is a research organization. In Game-park there will be an option to hunt animals if the authority allows; fishing is also included in this section. A zoo could earn a lot of revenue from its pond lease, canteen, children park, parking, and garden. The objective of this paper is to focus the overall management of a zoo for the welfare of animals.

Materials and Methods

Alipore Zoo in Kolkata: A perfect zoo with spacious area for the animals. It was an ancient zoo with available animals. *National Zoo of Bhutan:* This is a national park. Animals are living well in their own habitat. Since animals were few in numbers but their living environment was mentionable at all Zoo. *Negarain Kuala Lumpur:* This is a zoo both ex-situ and in-situ thoughts. Inside the zoo, there was a car facility to observe all of the animals perfectly especially for old, sick, or children. *Kuala Lumpur Bird Park:* This is an outstanding natural habitat for all the birds. This place was very enjoyable for everybody to see and observe their real behaviour

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in real habitat. Birds can make their nest and care their young naturally. For birds' conservation, there is no alternative of this park. To observe birds learning behaviour through the 'bird show', this park was awesome. *Safari World in Bangkok*: A nice natural place for all animals. This type of safari park is always acceptable for the conservation of animals. Animals are in nature but visitors will see them inside vehicles. Need to drive carefully and slowly while observing animals. *Beijing Zoo in China*: A modern zoo with all facilities. Chinese giant panda is the main attraction of this zoo because this is their national animal. This zoo is a research centre on panda breeding, and has successfully completed artificial insemination of Chinese giant panda (Das and Kabir, 2025)



Fig 1. Elephants entertaining in Safari



Fig 2. Inside zoo

Results and Discussion

Capture: Capture is the first step in a zoo for introducing a new animal. To keep an animal in zoo, need to understand their behavior first (Fig. 2) (Kabir, 2022). In safari park, riding on animals especially horse and elephant are sometimes causes for human-animal conflict (Fig. 1) (Kabir, 2019b). At the time of capturing animals, anaesthesia needs to be implemented by a veterinarian. How many distances and time will be needed to transfer those

animals in a particular zoo, the veterinary officer will decide. For larger animals, import of their young is easy and risk-free. **Restrain:** Stop feeding is the first and very old method for restraining animals. For providing learning behaviour, sometimes, need to do this act. At the time of stop feeding, we should provide them sufficient water. In severe cases, saline water may inject to the animals. **Handling:** A real zoo is always dedicated to appoint sufficient manpower for handling of animals. Sometimes, expertise to a specific animal is needed. To protect animals, fascination to animals is the major concern of humans (Kabir, 2016). Zoo professionals became aware of the need to engage themselves in conservation programs, and the American Zoo Association said that conservation is the highest priority (Kisling and Vernon, 2001). To maintain heavy weight animals especially python, need to introduce incubator machine for hatching successfully. **Animal house:** Space of each animal depends on the size and behaviour of animals. Swift or running animals need extra space in house and surroundings. Birds need a large area for proper flying, herbivore animals for grazing, and ferocious animals need to get extra protection for avoiding conflicts. Plant-enriched enclosures are important in some cases. Safari Park is the best for animals and this is ideal for in-situ example. **Hygiene and parasitic control:** If the environment in a zoo is ensured by zoologist and veterinary officer, serious diseases will not be happened. Some parasites are very helpful for some species. Symbiosis, commensalism, predator-prey relationship all are very common phenomena in nature. Fresh and balanced diet and adequate space for exercising are two major events for the fitness of zoo animals. Anorexia and vitamin deficiency are very common to the zoo animals. Elephants in European zoos have shorter lifespan than their wild counterparts at only 17 years, although other studies suggest that zoo elephants live as long those in the wild (Mott, 2008). There are animals that are injured in wild but live healthy and happy life in zoo. **Nutrition:** Calorie is depended on the size and activity of the animals. Very fast, growing and large animals, and pregnant and lactating animals, need huge calories. Moreover, during laying, lactating, and pregnant animal, it is needed different feed ratio for fulfilling the nutrients. A malnourished animal suffers a lot in their entire life.

Animal dealer: An animal dealer is important for a zoo. They could supply an animal in a zoo in an

emergency. Forest adjacent people could help for collecting animals. Some animals are neglected by their mother or caught by local people, in this case, zoo authority could rescue those animals. Wildlife Biologist, Forest Officer, Police Officer, Zoologist, and Animal Lover all are concerned to the welfare of animals.

Conclusion

It was concluded that zoos of Bangladesh are devoid of zoologist; a zoologist knows very well about the behaviour of wild animals. Get special emphasis on the particular environment for a particular species. It should be strengthen research on behaviour of all zoo animals and appoint manpower whose will have fascination to conserve animals.

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