

WILDLIFE CONSERVATION AND MANAGEMENT

Causes of Extinction

Wildlife is a renewable natural resource and it includes all naturally occurring species of animals and plants, which are not cultivated, domesticated, tamed or introduced for advantageous use by human beings. It may be noted that all living species have distinct place in nature and any change in the community by abiotic or biotic factors disturbs the balance of nature and this directly or indirectly but adversely affects human beings.

In India, protection of wildlife has been a part of our culture. Shesharaga, lion, rat, owl, peacock and ox are linked with our gods and goddesses. Budha and Mahavira strongly advocated non-violence. Charakya recommended severe penalties for killing, trapping or causing harm to animals in protected areas. In spite of this cultural and religious background, our greed for more land, more money and more and more of everything has resulted in extinction of more than 200 species of animals and birds and about

600 species of wild animals are listed as 'endangered' species. They are on the verge of extinction and unless some drastic protective measures are undertaken, they will become extinct in not a distant future.

The most serious aspect of the loss of biodiversity is the extinction of species. Communities can be degraded and reduced in area, but as long as the original species survive, the communities still have the potential to recover. However, once a species is eliminated, the unique information contained in its DNA and the special contribution of characters that it possesses are unlikely ever to be repeated again. Once a species goes extinct, its chances for further evolution are lost. A species is considered extinct when no member of the species remains alive anywhere in the world. If individuals of a species remain alive only in captivity or other human-controlled conditions, the species is said to be extinct in the wild. In both of these situations, the species would be considered globally extinct. A species is considered to be locally extinct when it is no longer found in an area it once inhabited but is still found elsewhere in the wild. There may also be an ecologically

extinct species if it persists at such reduced numbers that its effects on other species in its community are negligible. For instance, few tigers remain in the wild that their impact on prey population is insignificant.

The first noticeable effects of human activity on extinction rates can be seen in the elimination of large mammals from Australia, and North and South America at the time humans first colonised these continents. For thousands of years, the total area of natural grassland and forest in North America, Central America, Europe and Asia has been steadily reduced to create pastures and farmlands to supply human needs. Extinction rates are best known for birds and mammals. The highest species extinction rates during historic times have occurred on islands. The threat of extinction is greater for some groups of species than for others.

The protection of rare species is an important focus of conservation efforts. Rare species are considered to be especially ~~vulnerable~~ vulnerable to extinction. The term rare has a variety of meanings. A species may be considered rare if it occupies a narrow geographical range, like the Venus's flytrap (*Dionaea muscipula*) occurring only in the savannahs of the coastal plain of the Carolinas in

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eastern U.S.A. A species may also be considered rare if it occupies only one or a few specialised habitats. Salt marsh cord grass (*Spartina patens*) is found only in salt marshes and nowhere else. Finally, a species may be considered rare if it is found only in small populations. A species that is found in only a single geographical area and nowhere else is said to be endemic to that area.

When environments are damaged by human activity, the population sizes of many species will be reduced, and some species will go extinct. Ecologists have observed that not all species have an equal probability of going extinct, and particular categories of species are most vulnerable to extinction and such species need to be carefully monitored and managed in efforts for conservation of biodiversity. Following are such species categories:

1. Species with a very narrow geographical range.
2. Species with only one or a few population.
3. Species in which population size is small.
4. Species with low population density.
5. Species that need a large home range.
6. Species that have large body size.
7. Species with low rates of population increase.

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8. Species that are not effective dispersers
 9. Species that migrate
 10. Species with little genetic variability
 11. Species with specialised niche requirements
 12. Species that are characteristically found in stable environments
 13. Species that form permanent or temporary aggregations
 14. Species that are hunted or harvested by people.

Legal Status of Rare Species for the purpose of conservation (The IUCN - 1984, 1988)

- (1) Endangered species
- (2) Vulnerable species
- (3) Rare species
- (4) Insufficiently known species

Habitat Destruction

Dereservation of some reserve forests leading to the depletion of wildlife. This type of destruction may result out of various actions. The species may be needed as food, for clothing. Plants or animals that compete with or depend upon that one for food or space, are the cause of destruction of species. For example, Cheetah has been hunted to its extinction in India. In addition, people

of this age are equipped with efficient and effective methods of catching, transport, processing make depletion of the population. The modern sophisticated whaling vessels and harpoons are equipped with more efficient weaponry and explosives, thus overcome these protective measures.

Commercial Exploitation

Ivory is prized out of the lifeless heads of the murdered elephants, skins are massacred for their horns; deer are butchered for musk; snakes killed for their skins. Snake-skin and tortoise shells are other popular exports on the other hand or ivory products seem almost exclusively sent out from Delhi to Mumbai as the trade centres and craftsmen are concentrated around (Varanasi, Lucknow, Jaipur etc). Srinagar and Delhi are well known major fur-trade centres and Germany is the major importer of furs.

The United States of America (U.S.A), U.K., USSR provide an endless stream of orders for monkeys (used for research).

Overgrazing and Fuel Wood Crises

Besides, the destruction of habitat or commercial exploitation of wildlife, overgrazing and extraction of fuel-wood from the adjoining forests in rural India particularly the hill areas explain much

degradation of wildlife habitat. The livestock population per hectare of cultivated areas in the hills is much larger than that in the plains. It varies from 1.80 in Paghobayra to 5.22 in Harachal Pradant. The livestock population compete with the human population for food and space. Large number of cattle are maintained in rural India (in the hills these cattle are maintained not for milk but mainly for manure).

However, since they are not stall-fed but allowed to graze freely, only a fraction of manure produced by them during the night is utilised. Further, the migratory grazers also pose a serious problem. The grazers, who enjoy rights in sub-plains and alpine pastures during summer and in lower areas during winter, lead to increase their flocks of sheep and goats as the demand for wool and meat products is increasing with the increase in human population.

Problem of fuel wood is another aspect, which is directly related to destruction of many of the favoured species of wildlife.

Mountaineering

Coupled with overgrazing and fuel wood extraction, the other disturbing factor, especially

in the high altitude areas, is mountaineering. For example, mountaineering expeditions disturbs the nature balance in such a way, which affects the high altitude environment, i.e., snow leopard's food supply. "As grazers with their flocks of sheep and goats nibble the wild sheep and goat, their dogs disturb the bhawal ewes, and to them into miscarriage). So also can helicopters that accompany some (military sponsored) mountaineering expeditions. The overpowering overpowering rare in a confined gorge can panic the wild animals into losing their normal sure footedness.

In the Alps, the use of helicopters is considered unporting and banned. In India they used sometimes to deliver fresh pastries, as on the Kanket expedition to celebrate the jubilee of the Indian Military Academy.

Conservation Effort

A number of legislations were enacted for the conservation of fauna and flora. Some important ones are given below:

1. The Madras Elephants Preservation Act, 1873 and 1879.
2. The Nilgiris Game and Fish Preservation Act, 1879.

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3. The Indian Game Act, 1878
 4. Indian Forests Act, 1878
 5. The Wild Birds and Game Protection Act, 1887.
 6. Notification in 1902 under the Sea Customs Act, 1878.
 7. The Wild Birds and Animals Protection Act, 1912.
 8. The Bengal Rhinoceros Preservation Act, 1932.
 9. The Punjab Wild Birds and Wild Animals Protection Act, 1933.

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