

CONSERVATION OF ASIAN ELEPHANT

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INTRODUCTION

The most well known among the wild animals of south east Asia is probably the elephant. In India for instance, only a very small fraction of the population of over 900 million Indians may have seen it in the wild but almost everyone except perhaps in the remoter areas of the western Himalayas may have seen it in its domesticated form at some time or other. Perhaps this is the reason that people are unable to comprehend that the elephant is a highly endangered species. The elephant is deeply interlinked with man in Asia in his religious and cultural heritage. In spite of this close association, amounting often to veneration, the elephant has now quite often become, to the people who live in the vicinity of its habitat, one of the most destructive species of wildlife and that is the crux of its relation with man. It is useful to have an occasional recapitulation to remind us of the genesis of our problems.

The distribution of the Asian elephant in the past was enormous in terms of area, stretching as it did from the Tigris and Euphrates valleys of present day Syria and Iraq to south-east China up to the Yellow River in the east and Sumatra in Indonesia in the south. Today the distribution is fragmented, and the Asian elephant occurs in small fractions of its former wide ranging habitat in India, Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar (Burma), China, Thailand, Laos, Cambodia, Vietnam, Malaysia and Indonesia.

At the turn of the present decade, the population of the African elephant was believed to have come down to 600,000 from the more than one million that had existed two decades earlier. In comparison, the Asian elephant with an estimated population of approximately 34,000 to 54,000 is truly endangered. The population decline of the Asian elephant however has not been as catastrophic as that of the African species; rather a gradual erosion over the centuries, which has accelerated in the second half of the present century. The historical and present day distribution of the elephant record the continuing deterioration of the elephant's habitat. Within historic times there has been a progressive desiccation of West Asia. This deterioration is largely man made and the elephant has disappeared from areas where the forests were destroyed for human needs.

The problem facing the elephant and its ecosystem is uncontrolled increase of human population and the demands on the natural resources for the needs of this population. The

example of India is illustrative. The human population of the Indian subcontinent was 251 million in 1921. In 1971 the state of India alone had a population of 547 million. Population projections estimated 734 million for 1986, 872 million for 1996 and 945 million for the year 2001. This projection *assumed* that the birthrate will drop to 25.7 percent in 1996-2001. Conditions in India do not support this assumption and the current population is in excess of projected figures.

In India an enormous area of prime elephant habitat has been lost since 1860 to the plantations of coffee, tea, rubber and teak which were carved out of existing forests. After 1950, hydroelectric projects ravaged elephant habitats through the submerging of forests and unscrupulous exploitation of the remnant forests. In Central India the forests holding elephants cover the single largest deposit of iron ore in Asia and mining has been a continuing process since 1909. The states of Northeast India, which used to be the main stronghold of the elephant in India, are the areas where the main human-elephant conflict has developed. Exploding human populations have destroyed crucial elephant habitats for cultivation and plantations, extinguishing traditional migratory routes; and slash-and-burn cultivation has devastated habitats, making the survival of the elephant in some of the states, unlikely.

The demand for forest produce both for Industry and fuel to support an increasing human population has been rising rapidly. In India firewood remains the main source of energy fuel. The demand increased from 8 million m³ in 1967 to 24 m. m³ in 1976 and that was twenty years ago. Firewood position in India's energy resources at that point of time can be gauged from the fact that in 1970 India used 51.35 million tons of coal, 15.31 million tons of oil and 122.76 million tons of firewood, or twice the amount of coal and oil (Anon, 1978). The situation has now further deteriorated.

The elephant occurs in states which have the highest human density per square kilometre, Kerala (549), West Bengal (509), Bihar (324), Tamil Nadu (317) and Uttar Pradesh (300). The elephant and its ecosystem face severe pressure as the human population keeps on increasing. The elephant is unlikely to be exterminated but it will be much reduced in numbers and restricted to a few national parks and perhaps finally seen only as a domesticated animal.

The conservation Action Plan of the Asian Elephant Specialist Group of the World Conservation Union (IUCN) estimates the total population of the Asian elephant as between 34 and 54 thousand with minimum country population of between 50 to 60 in Nepal and maximum of between 17 to 22 thousand in India. India currently has the largest surviving population of the Asian elephant, approximately 50% of the total world population of the species. The problems that the elephant faces in India are broadly the problems that it faces or will face in other areas of its occurrence in south-east Asia. The Indian population is discontinuously distributed in four major geographical zones: a south Indian population (c. 6000 - 8000) in the forests of the Western Ghat Hills in the States of Karnataka, Tamil

Nadu and Kerala; a central Indian population (c. 2000) in the forests of Uttar Pradesh close to Nepal and a North - eastern population (c. 9000 - 12000) in the States of West Bengal, Assam, Arunachal Pradesh, Nagaland, Manipur, Tripura, Mizoram and Meghalaya

The status of the elephant in adjoining countries is equally bleak. Nepal, which has the lowest country population (c. 50-90), has lost over 80% of its elephant habitat to human settlement. Bhutan (60 -150), though it still has substantial forest cover, is influenced by conditions in adjoining India as the population is shared with India. Bangladesh (c. 200 - 350) is rapidly losing its elephant habitats to development programmes and the population is likely to diminish rapidly. The Myanmar population (c. 2000 - 10000), the second largest, has a reasonably undisturbed habitat and prospects of long term survival. However, its present status needs further study. The elephant continues to be used in the extraction of Myanmar's timber wealth. In Thailand in spite of the elephant having been a protected species since the 18th century, over exploitation of the habitat and the pressure of human population has made the species highly vulnerable. Cambodia (c. 2000), noted in the past for its abundant elephant population, has suffered disastrous environmental loss from the thirty years of war which ravaged the country and its forests. As in the neighbouring countries of the Indo Chinese Peninsula, namely Vietnam (c. 500 - 1000) and Laos (c. 2000), precise information on the status of the environment and of the wildlife, including the elephant, is not available. The elephant population of China (c. 300) is restricted to an insignificant area in Yunnan province bordering Myanmar and Laos where forests still exist. In Sri Lanka (c. 2700 - 3000), where there was an ancient tradition of protection dating back to the 12th century, there was a major loss in the population during the colonial period till the species was given protection late in the present century.

Presently large scale development programmes have destroyed the elephants' habitat and there is no future for the elephant except in a few protected areas. The Malaysian elephant (c. 1300 - 3000) has, like the Sri Lankan elephant, become a victim of development programmes and occurs in small groups often pocketed in unsuitable habitats. There seems to be no hope for the elephants' survival outside protected areas. The elephants of Indonesia (Sumatra 2800 - 4000) and the possibly feral population of Kalimantan, Borneo (100 - 500) suffer from the same type of human population pressure which afflicts elephants throughout the range of the species and there seems to be little chance of survival outside limited protected areas.

The loss of habitat to cultivation is the main area of conflict between man and elephant and will be in the long run, the major cause for the extinction of the elephant over most of its range. Some examples would illustrate this point. The district of North Kanara, the northern most range of the elephant population in south India was largely under forest cover but with the eradication of malaria has now extensive enclaves of cultivation fragmenting the existing forest area. The majority of the elephant herds were pocketed in small islands of forests surrounded by cultivation and in course of time destroyed. In north Bengal, in a period of four years in the seventies of this century (1974-78) the population was reduced

from 250 to 100 through control shooting, poaching and capture. Since 1967 vast areas of standing forests have been brought under cultivation, destroying elephant habitats and blocking migration routes essential for the health of both the elephant and its habitat. The situation has not improved over the years and about 186 elephants remain a problem population subject to a severe human - elephant conflict situation.

This then is the scenario which faces us in the conservation of the elephant. Again taking India as an example conservation has been practised off and on over many centuries. I quote from an article published in the *Journal of the Bombay natural History Society* in 1949 by a hunter-sportsman who wrote, "So far back as the days of Ashoka Maurya (273-242 B. C.), the killing of an elephant was punished by death, and even now the shooting of one without a permit may involve a fine of Rs. 500. But it would be a great mistake to imagine that elephants have always been protected. Prior to 1873 when the Madras Elephant Preservation Act became Law, these grand but destructive animals were classed as vermin, and a government reward of Rs. 50 was paid on each one brought to bag, without distinction of sex or age. In spite of the very inadequate weapons of those days, so many were killed that government became apprehensive lest the supply of elephants for commissariat and forest work might be seriously elected and consequently passed the Act in question, under which it became an offence to shoot any elephant without special permission."

Today the elephant is on Schedule I of the Indian Wildlife Protection Act and also of CITES list of completely protected species. However, whether this is of advantage in the management of the elephant in India is a question that has to be examined by AESG. The history of elephant conservation in India has been described in detail by D. K. Lahiri - Choudhury in his Keynote address at the Seminar on Asian Elephants held at Mudumalai Sanctuary in South India in 1993, Briefly in India, which has the largest population of elephants, special attention to their conservation commenced with the formation of the Asian Elephant Specialist Group of the IUCN in 1976.

The status survey that was made between the years 1976 - 80 and reported in the document published in 1980 has not been repeated in similar detail in India, the trend turned to research on identified areas of prime elephant habitat, by scientists of the Centre for Ecological Sciences, the Bombay natural History Society and Wildlife Institute of India. The sustained interest in the conservation of the Asian elephant fostered by IUCN and Indian Institutions such as the Bombay natural History Society, Wildlife Institute of India and Centre for Ecological Sciences, promoted the Government of India to plan the organization of a PROJECT ELEPHANT similar in principle to PROJECT TIGER. A task force was established to spell out the problems facing the elephant and to frame a long term conservation programme for the elephant in India under a specially funded initiative, namely the PROJECT ELEPHANT. The objectives were defined as :

- ensuring the long - term survival of identified large populations.
- evolving management plans for the smaller populations, mainly with a view to reducing man-elephant confrontations and ensuring their survival pending further review of the ground situation.

Elephant Reserves were conceived to:-

- ensure the long-term survival of identified large populations: the target in the first phase was to protect habitats and existing ranges;
- link up already fragmented portions by established corridors wherever possible and protecting corridors at present under threat;
- improve the quality of the habitat wherever necessary by attempting ecosystem restoration and other measures keeping the main objective of range protection in view; and
- attend to the socio - economic problems associated with this, especially the problem of elephant depredation, loss of employment, and problems arising out of restrictions on use of forest produce by the human populations living on the fringe.

The Committee appointed by the Government of India identified the major problems facing the Indian population as loss and fragmentation of habitats, loss of habitat quality or range degradation and the inability of such areas to support existing elephant populations, loss of forest lands to meet the needs of increasing human population. The conservation strategy recommended by Committee has as its goal (a) ensuring that each elephant holding state maintains one or two natural viable populations of elephant. (b) assure that the local communities in the environs of such areas are not adversely affected. (c) ensure that individual problem elephants do not mitigate conservation efforts aimed at the whole population.

The Project is now in operation and is on a much lower level of public awareness than Project Tiger. This is a key point which needs our attention. It is also funded at a much lower level than project Tiger. Similar exercises in Conservation are in operation or have been proposed in Sri Lanka, Myanmar, Malayasia and China as became evident from the papers presented at the Seminar on the Conservation of the Asian Elephant held in 1993 in south India.

A basic tool for elephant management is research on its ecology. Curiously enough, even though the elephant has been a part of human history in India from time immemorial and treatises such as Palakapyas *Hastayurveda* (Treatment of Elephants) had been written

in the past, scientific enquiry into the ecology of the elephant in India was not undertaken till the late seventies of this century. The elephant had however, been the subject of serious scientific enquiry in countries adjoining India, particularly Sri Lanka and Malaysia. Nevertheless there is an abundance of natural history notes published in the *Journal of the Bombay Natural History Society* from the time elephants value as an adjunct to forestry practices was recognised.

Pioneering research on the ecology of the species in India was undertaken by R. Sukumar in the late seventies with the assistance of the Asian Elephant Specialist Group and funded by World Wide Fund for Nature. Subsequently research undertaken by the scientists of the Bombay Natural History Society funded by the Fish and Wildlife Service of the U. S. Government has brought out very interesting data on elephants and their effect on the habitat. For instance, Sivaganesan's studies on habitat utilisation have shown that over-exploitation of food does not lead to the destruction of forest ecosystem but the selective disappearance of the most favoured species of trees fed on by the elephants in the different habitat types. What is required are methods for regeneration of favoured food species. The problems facing the wildlife manager in the conservation of the elephant have been clearly brought out by Ajay Desai. In a recent paper he showed that home ranges of herds cover areas with different levels of protection in a conservation area and a herd or for that matter a population of elephants living within National park or Wildlife Sanctuary is therefore not assured of complete protection throughout its range. Studies by Hemant Datye in Dalma Wildlife Sanctuary, Bihar and Ramesh Kumar in Tamil Nadu/Karnataka, on an isolated elephant population and peripheral elephant population respectively, have shown how desperate the situation is for populations subjected to severe biotic pressure from human encroachment. It is therefore necessary to assure that there is a strong research component not only to collect basic data but also to examine management oriented problems.

It is now necessary to repeat the status surveys undertaken over two decades ago. True census have been conducted as recently as 1993 but I do not think a comparison with earlier data has been attempted including habitat availability. An attempt to estimate the status of the species throughout its range is essential. There has been considerable difference of opinion on census methods. The method to be used will vary with ground conditions. This has to be appreciated but there can be no difference of opinion that a status survey of the Asian Elephant population throughout its present range is now imperative. One of the major objectives of Project Elephant is to identify and protect complexes of contiguous national parks and sanctuaries as a Composite Elephant Range. These should be the essential conservation target areas for the elephant throughout its range.

A priority requirement is to survey in depth the potential of a complex of sanctuaries as an elephant range for the long-term survival of viable elephant populations through precise assessment of existing elephant populations, assessing habitat status of the component sanctuaries and national parks, assessing the corridors between the protected areas and their viability; assessing the pressures from human activities and their long-term effects on

protected area components of the range; assessing present human/elephant conflict areas within the range; assessing impact of future developmental plans on the range as a whole. This is crucial for all identified elephant ranges as the future of the elephant depends on how best elephant and human needs can be met in a continuously deteriorating environmental situation throughout its distribution owing to the uncontrolled increase in the human population and the constituent escalating demand on natural resources.

A basic research which will be useful in this context and which was is in progress until recently in one identified elephant range, is data collection on ranging behaviour of elephant from radio collared elephants, to assess exact home ranges; to identify crop raiders, extent of such raids and probable causes and to determine the extent to which collared elephants range outside protected areas. Another area for priority conservation is the status of elephants stranded in habitats fragmented by human encroachment. There are several populations which have now been isolated from the main elephant ranges and it is necessary to determine the minimum requirements of such pocketed populations for their continued survival. It is therefore necessary to assess the capacity of such habitats to hold existing populations; to assess the pressures on such populations and the long term viability of the habitat and its elephant populations.

The future of non-viable populations is a cause for considerable concern. Culling as practised in Africa is not acceptable as far as the Asian elephant is considered, at least in India. The only available alternative is capture and domestication. Apparently in India it is now the central government's policy to encourage the use of elephants in forestry practices as they were used in former years. It should also be possible to meet the requirements of non-governmental needs. However, it is essential that a school for capture, management, training and maintenance of elephants and training of mahouts be established immediately. The expertise is available in India and the need is urgent. Capture can now be humanely done using immobilising and tranquillising drugs and the most humane method of training is *Kraal* training as is practised in South India. The major populations in India and elsewhere in its distribution are genetically isolated. It is now necessary to examine the genetic status of isolated populations and to consider ways and means of establishing gene flow between populations permanently isolated. Relationship between clans in stable populations, among domesticated elephants and whether domesticated elephants can be made the gene carriers between permanently isolated populations are problems that now require serious consideration.

I cannot conclude without drawing attention to the question of ivory poaching. Though not on the massive scale as of the African species, the selective removal of tuskers has played havoc in the sex ratio of many populations. The handling of the ivory trade with the infusion of mammoth ivory into the Asian markets needs special consideration by the group. The elephant is an apex species able by its size and its interaction with its habitat particularly in its quest for food to influence the direction of development of its biotic environment. It has been one of the causes for the process of change in its ecosystem.

Such a function is no longer acceptable in an environment managed by man where the process of change has been speeded up. As noted earlier, the range of the elephant had, through the ages shrunk considerably. However, this process was accelerated as industrial revolution in the latter half of this century brought a mechanized commercial culture, into the countries of its occurrence. The tools used by man in a region decides its future and the tools of an alien culture now in use for gathering natural resources for commerce and to meet the needs of an ever increasing human population has destroyed a natural slow moving ecosystem. The elephant has become in the process too large an animal to find sustenance and living room in shrinking world of nature.

The conservation of the Asian elephant in Asia cannot be the concern of only the forest departments and environmentalists. Conserving the elephant involves the conservation of prime wildlife habitats. This needs a multidisciplinary effort where the local people, the administrators and land-use planners at all levels have to be involved. Conserving the elephant therefore means conserving the human environment and it has to be a part of the development plans of each state of Asia as a whole. The Asian Elephant is a part of the culture of man in tropical Asia. It is an integral part of the religions of the region and it is our hope that it will not be sacrificed in the search for a better life for the people of the region.