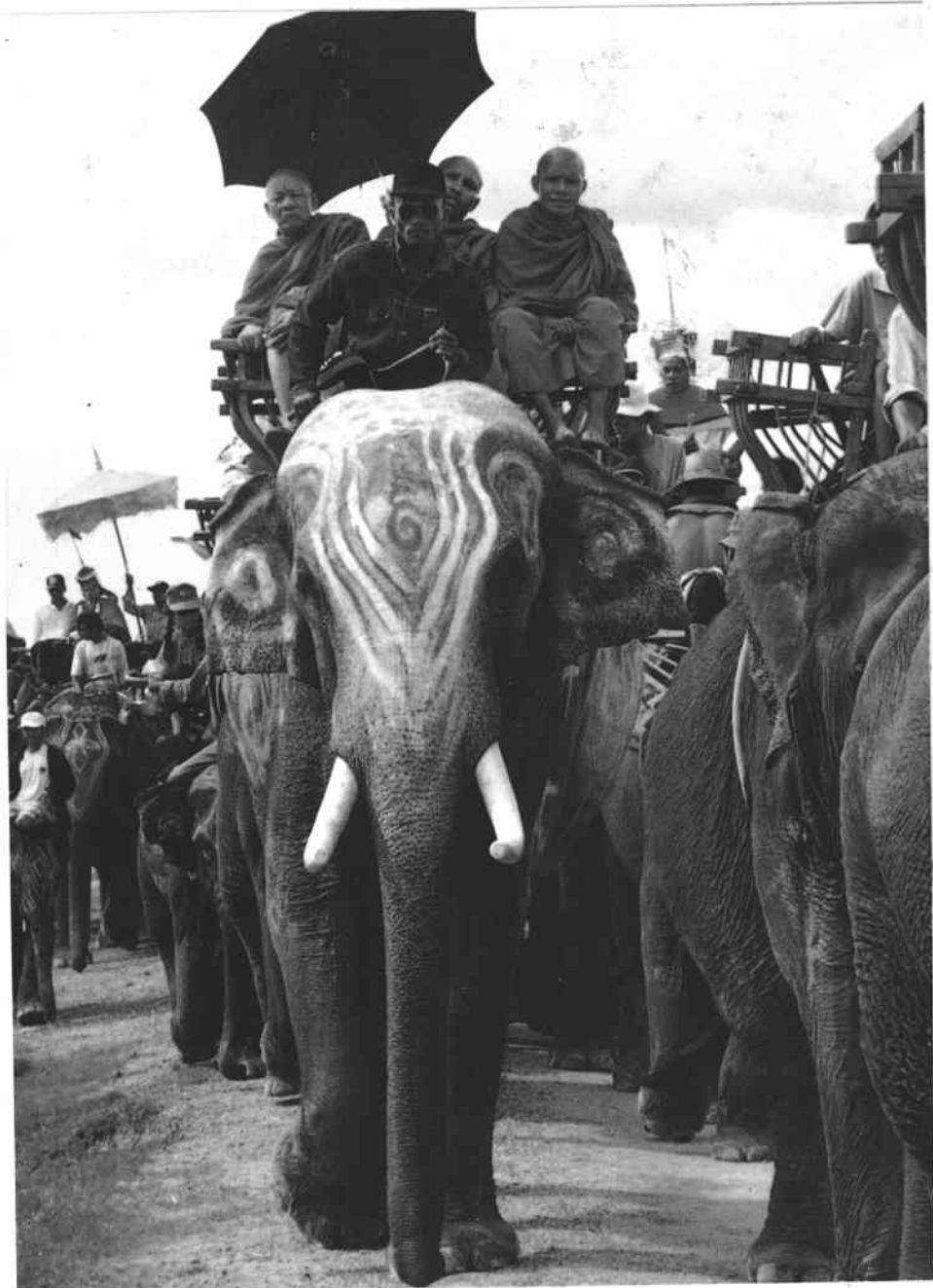


GAJAH

JOURNAL OF THE ASIAN ELEPHANT SPECIALIST GROUP



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1. To highlight the plight of the Asian Elephant
2. To promote the conservation of the Asian Elephant, and
3. To provide a forum for communication amongst the members of the Asian Elephant Specialist Group.

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MITIGATION OF HUMAN - ELEPHANT CONFLICTS IN SRI LANKA

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INTRODUCTION

The basic inability of human beings and wild elephants to co-exist without some conflict was recognized in the ancient Indian treatise called "*Arthashastra*" written by Kautilia between 300 BC and AD 300 (Lahiri - Choudhury, 1991). Today, throughout Asia, elephant depredation has become a way of life. Increasing human population and increasing agricultural land use have considerably reduced the area available to wildlife in general and the elephants in particular in Sri Lanka since the turn of century. In addition, the activities of the ivory poachers and guerrillas have also tended to concentrate elephants into smaller ranges of relatively greater safety such as national parks. The obvious corollary to a decrease in a species' range is a decrease in its resource base (Croze *et al.*, 1981). The continuous contraction of the habitat available to elephants serves also to cut off certain channels of their response such as emigration and dispersion (Watson & Bell, 1969). For a wide-ranging species like the elephant, this means that the animal's flexibility to buffer the effects of local resource depletion by moving elsewhere is lost. Such a situation has led to an escalation of conflicts between man and elephant in Sri Lanka.

Ratnam (1984) in discussing the problem of crop depredation by elephants in peninsular Malaysia considers the phenomenon into three categories :-

1. where a group of elephants has been marooned by development into tiny pocket of forest which, being unable to meet the food requirements of the group, forces the animals to raid the surrounding agricultural crops.
2. where a group of elephants with sufficient useable habitat. for various reasons, still raids large adjacent development areas with a broad but unified boundary with the forest.
3. where a group of elephants with sufficient useable habitat raids a patchwork of villages, farms, orchards or smallholdings with no clearcut or unified boundary between the forest and the developed areas.

To this in Sri Lanka must be added the fourth category of crop deprecations and human fatalities caused by the solitary bulls during their wanderings in search of oestrous females. The long-term survival of the elephant in the wild in Sri Lanka will depend on how effectively the human - elephant conflicts are mitigated. The problem of elephant depredation is a complex one and there is no easy solution to resolve the problem. In Sri Lanka, man and elephant have to live together with mutual adjustment.

METHODS TO KEEP WILD ELEPHANTS AT BAY

Although it may be impossible to eliminate the human-elephants conflict totally, except by exterminating the offending animals, there is no doubt that this problem must be minimised if conservation efforts are to succeed in developing countries facing harsh socio - economic realities (Sukumar, 1991). There are several methods to keep the wild elephants away from cultivated areas and according to Lahiri-Choudhury (1991), they can be divided into two categories :-

1. Methods of combat which deal with elephants actually raiding crops, and
2. Preventive measures, which are designed to prevent elephants from such raiding.

Combative Methods :

Use of Spotlights :

Powerful car battery-operated spotlights have been found to be very effective in India (Lahiri-Choudhury, 1991) to deal with most crop raiders since elephants with a few exceptions, move away from powerful beams of light. The light must be strong and powerful to be effective. The use of torch light in fact attracts curious elephants to move towards the source (as happened in Xishuangbanna in Southern China). In the cultivated areas, a tractor or a jeep fitted with spotlights can be fairly effective in dislodging wild elephant provided the vehicle can be taken close enough to the animal. But once the vehicle is withdrawn, the elephant may come back (Sukumar, 1986).

Use of Domesticated elephants :

In India, domesticated elephants (called *koonkies*) are often used to drive back wild elephants into the forest, usually during the daytime (Lahiri-Choudhury, 1991). By using *koonkies*, a herd of about 60 wild elephants was chased away in 1980 successfully in West Bengal in NE India.

Use of fire crackers :

This is one of the most commonly used methods to chase wild elephants off cultivated areas by farmers. But elephants soon learn to recognize such psychological bluffs. Rockets that end with a bang appear to be more effective, particularly with family groups. Bamboo gun rockets have been successfully used to chase wild elephant out of cultivation in India (Morris, 1958). In the past, Wildlife Department officials in the field used to provide farmers with thunder flashes. Although these devices could not eradicate the elephant raids, they were able to mitigate the problem (Punchihewa, 1989).

Use of Loudspeakers:

In southern India, the play back of a tape containing a jumble of noises, through loudspeakers was effective in keeping away a raiding bull elephant from a coconut farm (Sukumar, 1986). On the other hand, results of controlled experiments with tape recorded tiger calls have not been conclusive (Lahiri - Choudhury, 1991). The use of high frequency sound "beepers" along with an electric fence may have potential in repelling elephants (Picse, 1982).

Use of infrasound:

Asian elephants are known to communicate with one another using calls that range in frequency from 14 to 24 Hz (Payne *et al.*, 1985). Given that the Asian elephants can perceive calls at such low frequency better than calls at higher frequency in grassy savannahs or woodlands, over large distances (1.5 km or more), the play back of recorded distress calls of elephants could be used to drive back the wild elephants along cultivated areas. But this needs further research in identifying a frequency that is intolerable to elephants in the wild.

Use of fire arms:

Shooting with fire arms and guns over elephants may be effective in driving the animals back into the forest. But some belligerent bulls may ignore such noises and move into cultivated areas.

Preventive Measures:

Common sense:

Gamini Punchihewa (1989) asked some Veddas in the Gal Oya Scheme the most important question as to how they managed to save their crops despite their small number vis-a-vis the density of wild animals in the area. To this question, one villager replied,