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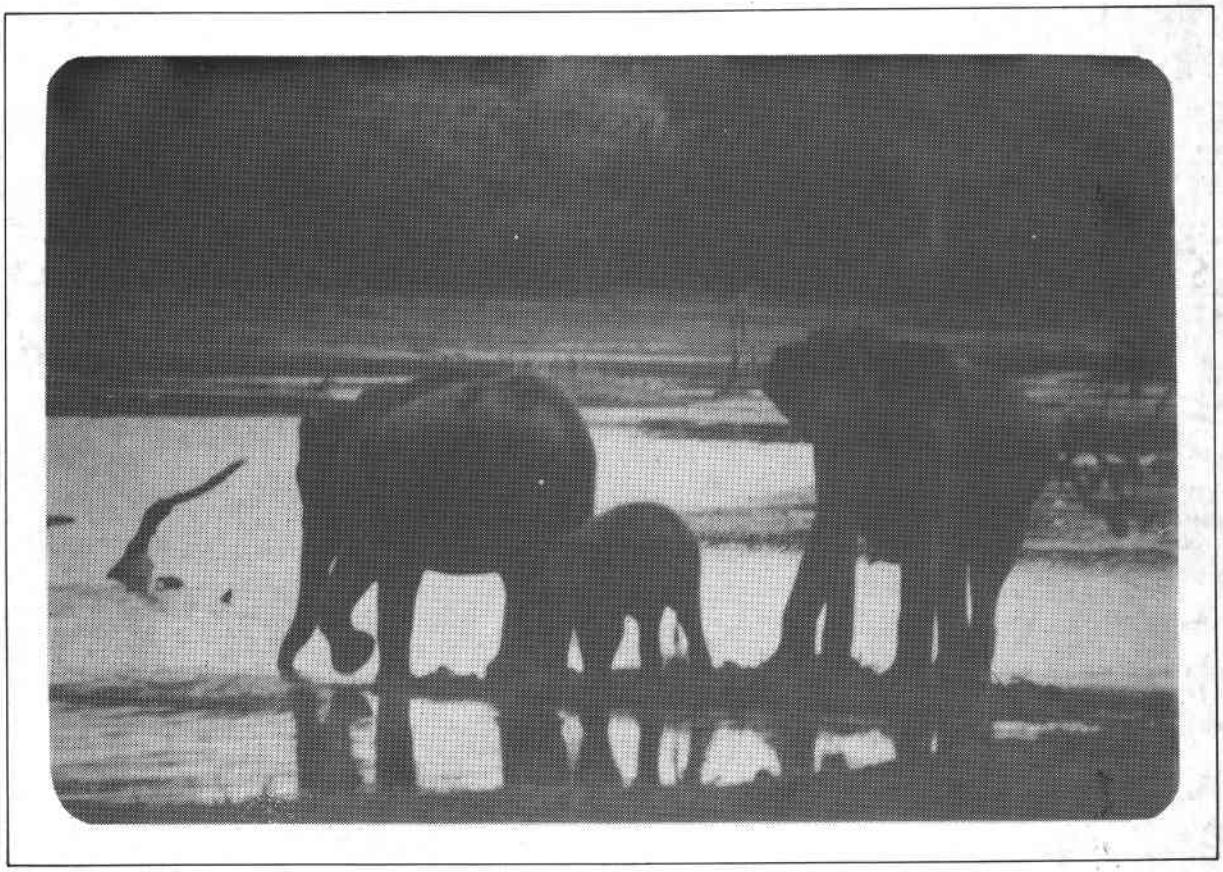
NEWSLETTER



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Asian Elephant Specialist Group NEWSLETTER
Number 8 **Spring 1992**

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The Asian Elephant Specialist Group Newsletter is published with the following aims: -

- to highlight the plight of the Asian Elephant
- to promote the conservation of the Asian Elephant
- to provide a forum for communication amongst all the members

Newsworthy articles are invited for consideration for publication and should be sent to Dr Charles Santiapillai at WWF - Asia Programme, PO Box 133, Bogor, Indonesia. All articles may be reprinted. Reprinted articles should give credit to the Newsletter. The editors would appreciate receiving a copy of any article so used. The opinions expressed by the authors do not necessarily reflect the policies of either WWF or IUCN.

Cover : A small group of two adult female elephants and one calf drinking at the Patanangala water-hole in Ruhuna National Park, Sri Lanka. (Photo: Charles Santiapillai/WWF).

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COMMENT

The Asian elephant estimated to be between 34,000 and 56,000 exists in a number of small, scattered and discontinuous populations from India in the west to Indo-China in the east. The population size ranges from a few animals (often pocketed with little prospects of long-term survival) to over 4,000 animals. In addition there may be up to 16,000 animals in captivity throughout Asia especially in India, Thailand, Myanmar (Burma) and Sri Lanka. With few exceptions, the numbers of both elephants in the wild and in captivity are on the decline throughout Asia. The question is whether this trend could be reversed?

If we follow the enlightened policies adopted in some countries as far as wildlife conservation is concerned, then there is indeed some room for optimism. But what we see in many Asian countries leaves no cause for such euphoria. The good news is from South India where under sensible management using nothing more sophisticated than simple common sense, there had been a spectacular increase in the number of calves born to elephants in captivity. In the State of Tamil Nadu, between 1950 and 1983 about 74 calves were born to 37 adult female elephants in captivity. The Tamil Nadu foresters and wildlife managers who were responsible for the success maintained the elephants in captivity in semi-natural conditions, in the vicinity of a reserve where wild elephants occurred. Furthermore, instead of keeping the elephants tied up day and night, they let the hobbled animals to roam in the forest and graze in the nights. This enabled the wild bulls to seek out oestrus females and mate with them thus siring the calves and improving the genetic stock of the elephants in captivity. This is the way to go about if we hope to increase the number of elephants in captivity. Artificial Insemination (AI) and other high-tech methods may work but these are prohibitively expensive to carry out in many Asian countries given the meagre financial resources available for wildlife conservation.

The wild populations of Asian elephants, as Shanthini Dawson and Tim Blackburn point out in this issue (under Short communications) are being threatened more by habitat loss and fragmentation as a result of escalating human population, than poaching for ivory. Only one third of the Asian elephant habitat is in protected areas. Poaching cannot be the terminal threat in the case of the Asian elephant as it is in the African elephant where both sexes have tusks. In Asia only a proportion of the male elephants have tusks.

Many Asian countries with elephant populations face a dilemma: on the one hand, as custodians of biodiversity and charismatic megafauna they are forced to assume responsibility for their protection. Yet at the sametime, most of these countries faced with expanding human populations, collapsing economies and crippling foreign debts are in desperate need of new resources to bolster their ailing economies and thereby keep the body and soul of their human populations in communication. Therefore conservation of elephant *per se* may rank rather low in their scheme of things.

The Species Survival Commission of the International Union for Conservation of Nature and Natural Resources (IUCN) has achieved enormous success and recognition through its production of the so called Action Plans. There is also an Action Plan for the Conservation of the Asian Elephant but it remains just an achievement on paper. Sadly, it has not achieved its desired objectives. This may be due to the fact that it is already out-of-date and is therefore of little use now. This may be the case as far as the conservation of elephants in India is concerned. But in many other instances, the countries concerned have neither the financial resources or the trained manpower needed to implement the recommendations the Action Plan identified. Without money and manpower, very little indeed can be achieved in Asia.

One of the surest ways of creating public awareness of the importance of conserving the Asian elephant and its habitat is to encourage and promote the study of elephants across their range in Asia. The emphasis of such studies should be on resolving human-elephant conflicts in order to create a climate of public opinion conducive to the long-term survival of the elephant as an integral part of its ecosystem. Conservation of elephants and their habitats, perceived by the local populace to be of direct economic importance, is far more likely to be successful in the long-term than by conservation for its own sake.

Lyn de Alwis and Charles Santiapillai

Feature Articles

POPULATION STRUCTURE, ACTIVITY AND DENSITY OF ELEPHANTS IN THE RUHUNA NATIONAL PARK, SRI LANKA

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Summary

Block I of Ruhuna National Park with an area of 140 km^2 can support seasonally up to 84 elephants. This gives a crude density of 0.6 elephant per km^2 and an average biomass of 1,086 kg per km^2. The recent survey carried out in June 1991 indicates that since 1978–1980, the elephant biomass may have increased by 29% in Block I. The increase may be due to the influx of animals from other Blocks. The population structure was normal with adult males and females accounting for 53% of the total. Calves formed 13.8% of the population. Of the 29 groups classified, the most frequently observed category was that of the solitary animals (48. 28%), 86% of which were adult males. Average herd size was 5.8 – excatly as it was when the survey was carried out in 1978–1980. The largest herd consisted of 10 animals. A total of the 13 herds were classified. Within the herds, the ratio of adult males to adult females was heavily biased in favour of the cows (1: 7.5). But the adult sex ratio in the total number of animals classified was 1: 2.1. The solitary animals showed a bimodal pattern of diurnal activity with peaks at 0800 and 1700 hrs while the herds activity picked up from 1500 hrs and increased up to 1800 hrs when maximum feeding activity was noted. The number of young animals observed indicate that there could be a seasonal pattern in the birth and breeding of elephants in RNP. But this needs further study before it could be confirmed.

Oddly enough there were no tuskers seen throughout the study period. In 1978–1980 there were at least 4 tuskers. The break down in law and order in the recent past in Sri Lanka as a result of guerrilla activity in the north, east, north-west, south and south-east had seriously affected the elephants and their habitat. Many of the tuskers had been killed by poachers. The proposed plan to capture 500 wild elephants in Sri Lanka for domestication is a sure recipe for disaster. The only long-term hope for the elephants in Sri Lanka may lie in the effective protection of their habitat.

1.0 Introduction:

The Asian elephant (*Elephas maximus* L.) represents the largest land mammal in Asia. The subspecies found in Sri Lanka (*Elephas m. maximus* L.) is the forma typica. It would be difficult to imagine Sri Lanka without elephants as they are a part of the island's history, folklore, religion, politics and cultural heritage. Elephants have been in use by man in Sri Lanka for at least

the past 2,000 years (McKay 1973). Before the large scale destruction of forests, elephants enjoyed wide distribution and good numbers in both lowlands as well as the hill country. Tennent (1867) estimated the number of elephants around the 17th century in Sri Lanka (then Ceylon) to be 1.5 million! Elephants were reported from present day urban areas as Colombo, Kandy and Ratnapura between 1669 and 1744 (McKay 1973). Even by the turn of the 19th century, elephants were distributed all over the island from sea level to about 2,500 m altitude (Fernando 1973; Phillips 1935). Today however, except for a small itinerarnt population in the Sinharaja rainforest, elephants are restricted to the low lands (Fig. 1). Over the past 150 years, human land-use has forced the animals from the wet and fertile regions of the south-west to much drier areas (Santiapillai & Jackson 1990). Olivier (1978a) argues that the elephant population in Sri Lanka may have declined by over 67% in the past 200 years.

As far as the Ruhuna National Park is concerned, it appears to have had a high concentration of elephants in the past. Norris (1959, 1967) reported as many as 300–380 elephants in an area of about 300 km^2 on a year-round basis.

The first serious study of the elephants in Ruhuna National Park (RNP) was carried out by the Smithsonian Institution in the late 1960's (see Kurt 1974). It was almost two decades later that Santiapillai *et al.* (1984) carried out a two year study of the elephants in Block I of RNP seasonally from May 1978 to June 1980. It was to re-assess the status of the elephants in Block I as a part of the overall large mammal management and monitoring programme (see Dissanayake *et al.* 1991) that this study was carried out in June 1991.

2.0 Study area:

Ruhuna National Park is one of the major conservation areas in Sri Lanka. The park with its north-adjacent reserves covers an area of about 1,200 km^2 and is situated in the low country dry zone in the South-eastern Sri Lanka just above the 6°N latitude. The entire National Park bounded on the south and east by the sea, consists of forest and saline flats irregularly dotted with natural water holes and man made "tanks". Two rivers Menik Ganga and the Kumbukkan Oya, and a number of seasonal streams drain the area and discharge into the sea through a shifting system of sand dunes and brackish lagoons (Woodford 1979).

Block 1 where the study was carried out is roughly triangular in outline with the Menik Ganga forming the northern boundary separating Block I from Block II (Fig. 2). The annual rainfall is about 1,000 mm of which the greatest (750 mm) falls in November, December and early January (North-east monsoon) and the balance in April and May (South-west monsoon). The dry season extends from June to September. However, rainfall can vary considerably between years.

3.0 Vegetation:

The main vegetation cover is woody, mostly scrub, i.e in canopy below 5-m height, but forests occur as larger and smaller islands within the scrub as a continuous cover inland from the coast (Mueller-Dombois 1972). The coastal area in Block I is characterised by numerous water holes surrounded by grazing areas frequented by the elephant and other herbivores. The grazing grounds are dominated by the halophytic grass *Sporobolous tremulus.* These flats give way, on the landward side, to light jungle dominated by *Salvadora persica, Feronia limonia* and *Cassia fistula* (Woodford 1979). The vegetation of the Park has been classified by Mueller-Dombois (1968) as falling into three physiognomic categories: - (a) forest (with at least 20% of crown biomass above 5 m in height), (b) scrub (less than 20% of crown biomass above 5 m) and (c) grassland or plains (Fig. 2). The dominant tree species are *Manilkara hexandra, Drypetes sepiaria* in well drained soil and *Feronia limonia* (Balasubramaniam *et al.* 1980). In the scrub vegetation, some of the common shrubs and treelets are *Capparis sepiaria, C. zeylanica, Dichrostachys cinerea, Flueggea virosa, Randia dumentorum* and *Cretavia religiosa.* The main components of the grassy plains are *Eragrostris viscosa, Dactylotaenium aegyptium, Sporobolous diandrus, Echinochloa colonum,*