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## Closing Comments

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**CLOSING COMMENTS****by Jeheskel Shoshani**

Elephants are not the only mammals that decline in numbers.

A glance at the vertebrate history indicates that large animals are the first group to dwindle. This is a continuous phenomenon, more dramatically so with the emergence of man.

Of the 4,000 or more species in the class Mammalia, the majority are relatively small creatures. Only about 100 are large; i.e., dolphin, whale, cow, zebra, tiger, lion, rhino, giraffe, hippo and elephant. The African elephant is one of the 21 threatened mammalian species, whereas the Asian elephant is one of 260 endangered mammals listed (Endangered Species Technical Bulletin, 4(5):8).

The problem we are facing today is simple, though it requires a complex solution. There is only so much space available and the resources are limited. This space can accommodate a given number of animals.

- Reserving areas for larger species, therefore, implies providing suitable environments for smaller species so that they may live in harmony with the larger, and both large and small shall not exceed the habitat carrying capacity.
- The reverse may or may not be true. That is, not all nature reserves for smaller species can support the larger species.

Thus, accumulating data on the larger mammals and channeling it toward conservation benefits not only the particular species in question, but many other animal and plant communities as well. This knowledge can then be applied to management and conservation of other species, especially if we are dealing with species having similar food requirements and occupying similar ecological niches.

Man himself can benefit a great deal from wildlife conservation: economically, educationally, and in providing an ecological inheritance for future generations. But I feel that man must curtail his exponentially growing population before anything else -- this is the crux of the problem.

**TO SUMMARIZE**

For centuries elephants have fascinated many workers, beginning with Aristotle and including Darwin -- many scholars and non-scholars during the past 2,000 years to the present. Elephants symbolized wealth, majesty and social status.

Elephants played an important role in the history of man. . .

Studies of captive elephants provided valuable scientific information. . .

Elephants play important roles in the survival of many plant and animal species:

- act in seed dispersal
- dig waterholes during dry seasons, and after they drink, many other species quench their thirst.

Elephants and fire complement each other in altering the environment (elephants debark trees and push others down, making them greater fire hazards).

Finally, let me quickly go over some similarities and dissimilarities between elephant and man as outlined by Richard M. Laws (Swara, 1(3):126-128) and other sources. The list is based on long-term studies on the ecology and behavior of elephants and sheds additional light on an understanding of ourselves.

#### ECOLOGICAL AND OTHER SIMILARITIES BETWEEN ELEPHANT AND MAN:

- unspecialized food requirements
- wide range of habitat occupancy, in terms of climate and vegetation type (elephant and man were ubiquitous and successful throughout Africa and the Holarctic during the Pleistocene)
- ability to modify their habitat
- matriarchal social organization of family units, extended families and bachelor herds
- effective absence of predators on adults (if we exclude man as being the only predator of elephant)
- deferred sexual maturity
- post-reproductive phase (similar to human menopause)
- naked skin
- natural mortality pattern and birth interval (elephant mean calving intervals 3-9 years)
- longevity
- long childhood associated with learning
- tool using and manufacturing

## DISSIMILARITIES IN THE REPRODUCTIVE PHYSIOLOGY BETWEEN ELEPHANT AND MAN:

- elephant has 18-22 month gestation period, man 9
- elephant has no menstrual cycle, but is seasonally polyestrous
- elephant has a different type of placenta than that of man (man has discoid and haemochorial; elephant has zonary and endotheliochorial or vasochorial)
- elephant has a different hormonal mechanism than man
- elephant has abdominal testes

Keeping in mind the current status of elephants, one notes that a large percentage of wild elephant populations (1.3 million African and 35,000 Asian) are held in protected areas. Due to their confinement, elephants threaten their own environment and become synonymous with politics since proper controlling and management invariably involves dealing with government officials and agencies. Elephants are important socio-economic animals. We must, therefore, separate emotion from logic; proper management programs must be implemented in such a way that the incentive would be channeled towards conservation.

Papers presented in this symposium show even more vividly the need for long-term studies, both in the wild and in captivity, necessary to implement conservation measures for these magnificent species.

Thank you.