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The Asian Elephant: Ecology and Management

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Book and Video Reviews

The Asian Elephant: Ecology and Management

Author: R. Sukumar

Pages: 282

References: 237

ISBN: 0-521-43758 X (paper)

Publisher: Cambridge University Press, 40 West 20th Street, New York, NY 10011, USA

Price: \$34.95 (US)

Review by Robert H. I. Dale

This book details a three-year study of 1,200 Asian elephants (*Elephas maximus*) in southern India. The author, Dr. R. Sukumar, emphasizes the population dynamics of this group of elephants, the varied habitat, and the influence of human-elephant conflict on the stability of the elephant population. Both manslaughter and elephant-slaughter are discussed, as are a variety of conservation issues. Throughout the report, the data that Dr. Sukumar collected in his study are compared with similar data from studies of other Asian and African elephant (*Loxodonta africana*) populations. The paperback is a slightly revised version of an earlier hardback edition of the book and includes updates of information originally presented in his doctoral thesis and several journal publications. Incidentally, in his acknowledgments section, the author expresses appreciation to Dr. V. Krishnamurthy, a Forest Veterinary Officer who was featured in the recent *Nature* documentary, "The Elephant Men" (see review, this page).

Dr. Sukumar begins with an historical chapter, pointing out that 2–4 million Asian elephants have been captured over the last 4,000 years. (The Asian elephant has been depleted by capture for domestication and habitat destruction; the African elephant has been depleted by hunting for food or ivory.) Sukumar then provides an elaborate description of the distribution of

elephants in Asia, estimating a wild population of about 45,000 and a domestic population of about 16,000 elephants. Surprisingly, both Burma (Myanmar) and Thailand have larger domestic populations than India. The effects of habitat loss to slash-and-burn cultivation, hydroelectric projects, human transmigration, and grain, timber, and fruit plantations are outlined, as are the effects of poaching and the ivory trade.

Turning to the study population, located in the Eastern Ghats of southern India, Dr. Sukumar describes the widely varied habitats the elephants occupy in the 1,100 sq. km. study area. He describes the seasonal variations in habitat use—dry season browsing and wet season grazing—and the nutritive quality of the elephants' diet. There is some valuable information on herd structures and sizes, home territories, and the age distributions of the elephant population. There are chapters on the elephants' feeding habits, their impact on the local vegetation, crop raiding, and the impact of the human population on the elephants' habitat. Dr. Sukumar's text is liberally supplemented with photographs, diagrams, and tables of data.

The elephants in the study are organized into five main clans of about 100–200 animals each, and Dr. Sukumar uses population modeling techniques to estimate that, with current populations' age distributions, sex ratios, fertility rates, and mortality rates, a population size of at least 150 animals is probably required for a group's long-term survival. Small groups of elephants in isolated habitats are unlikely to survive very long. Several chapters and appendixes cover population structures and dynamics.

The chapter on manslaughter contains many interesting statistics. For example, in a gruesome balance, elephants and humans seem to kill each other in roughly equal numbers (about 150 per year in India). By contrast, rabies contracted from pets kills perhaps 15,000 humans each year. About half of the people killed by elephants die during settlement raids (all at night), whereas the other half are killed in the forest during

the day. The most common method of killing seems to be by throwing or slapping with the trunk. There is apparently no systematic evidence that male elephants in musth are more likely to kill people.

In the chapter on elephant-slaughter, Dr. Sukumar states that almost 70% of male deaths, but only 18% of female deaths, are caused by humans. Most of the male elephants in southern India are killed for their tusks—since about 95% of the males are tuskers—and poaching has a major effect on the male-to-female sex ratio. Overall, about 2/3 of the elephants are female, but for adults over the age of five years the ratio is five females to one male. The annual death rate for males older than five years (10%) is about five times as high as the female death rate.

Recognizing that the long-term survival of wild Asian elephant populations depends on acknowledging the needs of the local human populations, the author concludes with practical suggestions for elephant conservation and management, which also take into account human interests and needs.

Video Review

The Elephant Men

[Nature Television Series: Thirteen/WNET, 1997: Icon Films, 1996]

Length: 54 minutes

Purchase: The Elephant Men: Nature (Telephone 1-800-336-1917)

Mail order: The Elephant Men, P.O. Box 2284, South Burlington, VT 05407

Price: \$19.95 plus \$4.95 postage/handling

Further information about *Nature*: "<http://www.pbs.org>"

Review by Robert H. I. Dale

The Elephant Men summarizes the efforts of a Forest Veterinary Officer, Dr. V. Krishnamurthy, to capture and train wild elephants that have been raiding

rice paddies in northern India (West Bengal). He has captured more than 200 elephants during his career. The opening footage illustrates the problem, showing a night raid of a farmer's fields. The video claims that 300 people are killed each year by elephants, and that religious belief in the Hindu "elephant" God, Ganesh (Son of Shiva "the destroyer"), prevents the villagers from simply killing the elephants.

Dr. Krishnamurthy brings three trainers, or mahouts, from southern India—Anamalai—to tame the wild-caught elephants. The task of capturing the wild elephants falls to other mahouts, from Assam in northern India, who use domesticated elephants to herd and then lasso the wild elephants.

A total of 12 elephants is captured and placed in stockades. The training of three elephants, two male tuskers and one small female, is described on the videotape. It takes about two months. The mahouts first establish "dominance" over the elephants, using only a small stick to reach into the stockade and touch the elephant. The elephant is fed by the mahout, and only permitted to touch food with its mouth, not its trunk. The video shows the "carrot and stick" training method, while Dr. Krishnamurthy describes it.

After about 10 days, the stockades are reduced in size. Soon after, a mahout climbs on the female's back, and foot signals begin to replace verbal commands. The female is then fitted with a leg-chain, and commanded by a mahout standing inside the stockade with the elephant. Finally, the stockades are dismantled, and the mahout handles his elephant on open ground.

There is also brief footage showing treatment of a domesticated male elephant, Jatra, gored by another domesticated male in musth. A four-hour operation was performed without anesthetic. This incident triggers a touching discussion of The Inspector General, Dr. Krishnamurthy's favorite elephant.

The video offers an interesting look into a different culture of elephant handling and training. It also provides a glimpse of the increasing conflict between man and elephant as more and more wildlife habitat is devoured by the demands of feeding an exploding human population.