

Forum

Asian elephants in zoos – a response to Rees

R. Sukumar

The real role of zoos in the conservation of threatened animals is increasingly coming under public scrutiny, and this is perhaps natural in the case of intelligent, charismatic animals such as elephants. From Roman times up to the mid nineteenth century the elephant was a curiosity in Europe, and then with the establishment of zoos and the popularity of modern circuses there was a steady influx of animals from colonies in Africa and Asia. Elephants, however, never bred well in captivity, either historically in Asia or in recent decades in western zoos. Kings and other rulers have over the centuries obtained their elephant stocks mainly through capture from the wild, in many instances depleting these populations to the point of local extinction (Sukumar, 1989). Even the stocks of timber camp elephants in British India and Burma during the twentieth century were built up mainly through capture as opposed to breeding (Williams, 1950; Stracey, 1963; Gale, 1974; Krishnamurthy & Wemmer, 1995). The longevity of elephants ensured that sizeable numbers were available at any point in time; there was breeding among the timber camp elephants but in most places this rarely compensated for the mortality rate.

The problems with breeding captive elephants in Asia were similar in some respects to those faced in western zoos; thus even when bulls and cows were kept together the bulls had to be restrained when they were in musth and more likely to breed. Wild bulls have sired most of the calves born to cows in timber camps because of the proximity of such camps to wild elephant populations. The overall record of breeding (as seen from per capita birth rates) in Asian timber camps has of course been far superior to that of western zoos (Taylor & Poole, 1998), although it is not comparable to breeding rates in the wild. However, the only Asian camps that have maintained an intrinsically stable or growing population, as seen from analysis of records, are some in southern India (Sukumar *et al.*, 1997). This has been achieved not only through a relatively high breeding rate but through a low sub-adult and adult mortality rate. I suspect that

the dedication and competence of a few individuals made this possible. Some Burmese camps may also have a similar record of achievement but this is yet to be demonstrated (Khyne U. Mar, unpub. data).

The role of zoos in the future conservation of Asian elephants is undoubtedly debatable. On the positive side, research in zoos has provided us with a detailed understanding of the elephant's reproductive physiology and biochemistry (Hess *et al.*, 1983; Rasmussen, 1998; Brown, 2000), knowledge that is useful both for the management of elephants in Asian timber camps as well as for *in situ* conservation programmes. Some of this research could of course have been done in timber camps, but the scientific establishment in the west used a resource closer to home (work is now being undertaken in some Asian camps). The ambassadorial role of the elephant is obvious; few species have the same power to capture the attention of the public at large. The birth of an elephant calf in a zoo gives a significant boost to revenue through gate collections, and thus zoo elephants may be thought of as raising their own funds! On the negative side, the maintenance of elephants in zoos is very expensive. In spite of modern veterinary care, the overall health and longevity of elephants in zoos is poorer than in Asian timber camps. The lack of physical activity and the overweight condition of animals are probably the cause of elephants' health problems in zoos (Kurt, 1995; pers. obs.).

There is no disputing the urgent need to consolidate captive elephants into fewer, social herds. I agree with Dr. Rees that it is absurd for almost every zoo to keep elephants. It is however unfair to brand the entire community of zoo directors as lacking commitment to manage elephants in viable units. I personally know many zoo directors, and their staff, who are acutely conscious of the need to properly manage elephants in their care, of the limitations of zoos in the broader context of elephant conservation, and who are willing to work with Asian counterparts on both *in situ* and *ex situ* conservation projects. Some zoos have also supported conservation projects in Asia, although this effort has been largely in an individual capacity rather than directly from the zoo community. Much more could be achieved if zoos pooled their elephants, knowledge and financial resources to support conservation efforts in Asia.

R. Sukumar Asian Elephant Research & Conservation Centre, Indian Institute of Science, Bangalore 560012, India.

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The maintenance of elephants in western zoos must be firmly linked to conservation efforts in the elephant's range states.

The irony with captive Asian elephants is that, on the one hand, the maintenance of sufficient numbers has inevitably resulted in depletion of wild populations while, on the other, many more wild elephants are certain to be taken into captivity as field managers struggle with problems of elephant-human conflicts, fragmented habitats, non-viable herds, and even locally abundant populations. The Asian elephant has insufficient space or faces an uncertain future in several of its range states (the sorry plight of several hundred captive elephants in Sumatra is one such example), but zoos can take only a few animals each year. In other words, zoos cannot solve the problem of 'unwanted elephants' in Asia. The development of ultrasound (Hildebrandt *et al.*, 2000) and the recent success of artificial insemination may help zoos to partly overcome their problems with declining populations but this will be a costly proposition.

At several forums I have suggested that the management of captive Asian elephants has to be addressed at the global scale. Lair (1997) has provided an excellent overview of the captive Asian elephant population (updated in October 2000 at a meeting in Bangkok), but this is essentially a status report. We now need a detailed global analysis of the demography and economics of captive elephants, an analysis that looks not only at the linkages among captive populations in various situations (timber camps, zoos, temples and private ownership) but also between captive and wild populations (how many elephants are likely to be taken into captivity because of the straying of calves, the capture of problem animals or removal of non-viable herds?). Such an analysis can help us in planning for the future role of captive Asian elephants.

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