

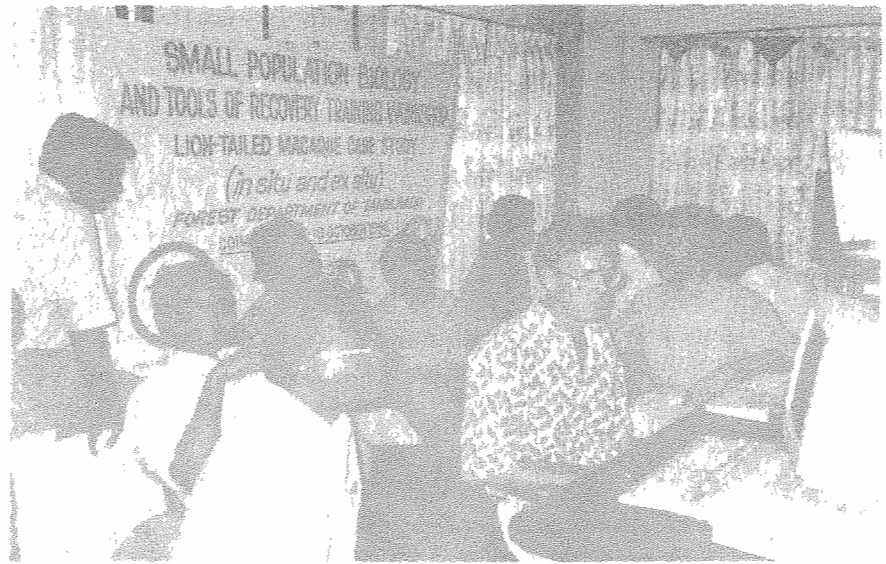


In 1993 a Population and Habitat Viability Assessment Workshop was held in Arignar Anna Zoo and also a meeting of Species Coordinators of southern Indian species. After some time it was apparent that the recommendations which came out of these meetings were not moving along very fast. It seemed that one reason could be the frequent movement of officials in administration, in the field and in the zoo who could implement the recommendations through departmental programmes. Some of the field and zoo personnel at ranger and DFO level are closer to the animal and also may have a better chance of sticking on to one place, therefore, it seemed a good idea to train them in principles of small population biology and recovery so they could put up proposals and implement them at the grass roots level. We also hoped to communicate a new perspective and encourage a more analytical way of solving problems of specific taxa in the protected areas.

One of the methods which we have found effective to do this is to use computer simulation models which encourage managers and researchers to bring data and manipulate it in the simulation model. While working with the model, a manager thinks of many different facets of his park and a researcher will become aware of areas he has not covered. In the process manager and researcher can find more common ground and interact over issues which may never be verbalised.

The course was divided into two parts, the first week for field or *in situ* managers and the second week for *ex situ* managers. A common field trip over the weekend provided a link between field and zoo.

Welcome and introductions were made by Sanjay Molur of ZOO who introduced Mr. V. N. Singh, Conservator of Forests, Coimbatore and Chief Guest related some of the problems of wildlife and the need for training for meeting the challenges of contemporary wildlife management. Sally Walker of CZA and ZOO related the background of the course. The Resource persons, Dr. Robert Lacy, Population Geneticist, Chicago Zoological Society ; Dr. Jonathan



Participants practice simulation modelling with their own data.

Ballou, Population Manager, National Zoo; and Dr. R. Sukumar, Population Biologist, Centre for Ecological Studies, who all contributed some good wishes for the training workshop. Walker presented a specially-produced clock featuring Lion-tailed macaque faces to Mr. Singh, commenting that "Time is Running Out for the Lion-tailed macaque."

In Part I or the *in situ* course, teaching emphasis was on small population biology including genetics oriented towards *in situ* populations, genetic and demographic stochasticity, modelling with stress on its practical application, effective population size and meta-population issues by Dr. Bob Lacy and Jon Ballou. Presentations by local Resource persons including R. Sukumar of CES and S. Molur of ZOO reviewing the LTM PHVA and Ajith Kumar of SACON on LTM Ecology in Topslip and Valparai and K. K. Ramachandran of KFRI on LTM Ecology in Silent Valley linked theory to practice. Participants from different parts of Tamil Nadu and Kerala presented data on LTM in their area and that information was linked with researchers data and information previously gathered from the PHVA to do further modelling. Participants practised modelling themselves in groups of two and three to a computer first using previous runs from the LTM PHVA and later their own information. Field trips to Valparai and Silent Valley and informal talks and discussions with field

personnel in those areas completed the first part of the course.

Participants of Part I made commitments for future action at their own level, of projects they could carry out themselves including revisiting census figures, organising capsule workshops for their forest guards, bringing specific population issues to be modelled to experienced modelling persons and conducting local education programmes. Participants in general reported that they had been exposed to an entirely new set of tools and concepts and wanted further instruction in these and other aspects of population dynamics.

In this course, simulation modelling was used as a teaching tool to communicate principles of population dynamics. It was pointed out that the utility of simulation modelling was not to come up with absolute management conclusions from the model as both the model and the information fed into it is imperfect. From the model and the process, however, a deeper and more extensive analysis of issues is possible and people gathering to utilise it discuss these issues together can do so in a very productive manner. No management decisions will be taken from the results of the modelling alone but management directions can be ascertained by trends and discussions resulting from the process.

Part II of the course began in the field and continued in the classroom. An informal inaugural was held with Resource Persons on the dias and welcome by organisers. The classes began with presentations on Small Population Biology with case studies from around the world and Population Management in Zoos. Later there was a Site Review of LTM in Indian zoos with reporting of special problems, questions and concerns to be answered in the workshop by the participants followed by a general husbandry and enclosure design presentation with slides of enclosures from U.S. Zoos. In U.S. Zoos, most of the enclosures incorporated chain mesh rather than moats and therefore were not appropriate for the CZA rules. Of these enclosures, only the newest and most elaborate were considered attractive.

Additional presentations included Basic Demography with a Golden Lion Tamarin Case Study followed by a Demonstration of ARKS and SPARKS with participants following on computers. Participants practised data entry using the SPARKS studbook programme and then analysed Arignar Anna Zoo's LTM population to demonstrate how to go through an animal by animal analytical process for placement of individuals. This was followed by a presentation and discussion of health management and a field trip to the upcoming Coimbatore Zoo.

The rest of the workshop was spent in working groups discussing the Indian LTM population as a whole. Shri S. C. Sharma and Dr. J. H. Desai participated in the last two days of discussion and report writing. A Report of the Workshop will be prepared and included in the next issue of ZOOS' PRINT as well as issued as a separate document.

Participants (Part I)

A. Chinnadurai, Forest Range Officer, Manambally Range, Valparai, Tamil Nadu

Jeya Perinba Kumar, Forest Range Officer, Tamil Nadu Forest Department, Srivilliputtur

N. Krishna Kumar, Wildlife Warden, T.N.F.D. I. G. Wildlife Sanctuary, Pollachi

T. V. Manjunatha, ACF, TNFD, C/o Wildlife Warden, Pollachi.

Shekhar Kumar Niraj, ACF & Working Plan Officer, O/o. CCF (Wildlife) Madras

M. Selvanayagam, FRO, TNFD, Ulandy Range Top Slip, Pollachi.

P. Sornappan, Forest Ranger, TNFD, O/o. D.D., Project Tiger, Ambasamudram, TN

James Zacharias, Range Officer Research Forest Department, Periyar Tiger Research, Thekkedy P.O.

Participants -- Part II

N. V. K. Ashraf, Vety. Officer, Coimbatore Zoological Park & Conservation Centre, Pioneer House, Peelamedu, Coimbatore

C. R. Raje Gowda, Jr. Asst., Chamarajendra Zoological Gardens, Mysore

B. K. Jha, Veterinary Officer, Central Zoo, Katmandu, Nepal

T. Kalaichelvan, Zoo Supervisor, Maitri Baag Zoo, Bhilai Steel Plant, Bhilai, M. P.

Brij Kishor Gupta, Development Officer, Coimbatore Zoological Park, Coimbatore

Dr. Navin Kumar, Vety. Surgeon, Nehru Zoological Park, Hyderabad

S. Manimozhi, Biologist, Arignar Anna Zoological park, Vandalur, Chinnai

K. Vara Prasad, Asst. Conservator of Forests, o/o Pr. Chief Conservator of Forests, Hyderabad

Kamal Lochan Purohit, Range Officer, Nandankanan Zoological Park, Orissa

S. V. Raajalinga Raja, Ranger, Arignar Anna Zoological Park, Vandalur, Chennai

B. Rathinasabapathy, Biologist, Coimbatore Zoological Park, Coimbatore

Santosh Singh Rawat, Zoo Ranger, National Zoological Park, New Delhi

K. Shaker Reddy, Assistant Curator, Nehru Zoological Park, Hyderabad

Resource persons

L. N. Acharjyo, Retired Vety Officer, Nandankanan Zoo, Bhubaneswar, Orissa

Jonathan D. Ballou, Population Manager, National Zoological Park, Washington, D.C.

J. H. Desai, Consultant, Central Zoo Authority, New Delhi

Laurence Gledhill, Animal Management Technician, Woodland Park Zoo, Seattle

Ajith Kumar, Principle Scientist, SACON, Coimbatore

Bob Lacy, Population Geneticist, Chicago Zoological Society, Brookfield Zoo, Chicago

K. K. Ramachandran, Scientist, Kerala Forest Research Institute, Peechi

S. C. Sharma, Member Secretary, Central Zoo Authority, New Delhi

Dr. R. Sukumar, Centre for Ecological Sciences, Indian Institute of Science, Bangalore

Visitors

Vivek Menon, Technical Consultant, Asian Elephant Conservation Center, Indian Institute of Science, Bangalore.

Surendra Varman, Conservation Biologist, Asian Elephant Conservation Centre, CES, Indian Institute of Science, Bangalore.

A.R. Mohamed Zachariya, Forest Vet, Wildlife Western Region, Coimbatore

Organisers / Facilitators

Sally Walker & Sanjay Moulr, ZOO/CBSG, India



Time is running out for the Lion-tailed macaque