Elephant and Rhino Conservation and Research Symposium 2016, Singapore: Summary of discussions and outcomes with reference to elephant conservation

S. Paulraj*

The recently held (14th–18th Nov.) 15th International symposium on elephants has highlighted various conservation issues including the 'Rejuvenation camps for the elephants of Tamil Nadu', an initiative of the Tamil Nadu Chief Minister J. Jayalalitha.

Over zoo participants consisting of elephant researchers, veterinarians, zoo pesonnel, NGOs, elephant enthusiasts, educators, managers etc. participated in the five day symposium held at Singapore Zoo. More than 100 scientific papers were presented including 10 posters. The five day symposium was organised by International Elephant Foundation and International Rhino Foundation in collaboration with Wildlife Reserves Singapore group namely, Singapore zoo, River safari, Jurong bird bank, Night safari and Wildlife Reserves Singapore Conservation Fund.

The major category of subjects covered in the symposium include, habitat management, veterinary management, captive management, reproduction, human-elephant conflict, genetics & conservation and education & conservation. Of these, the subject on 'Human-Elephant conflict mitigation strategies' received more attention and about 15 papers were presented on this alone. The major findings and outcomes on the above subjects are briefly explained as follows:

Human-Elephant conflict mitigation strategies

As this is a major problem in many of the elephant range countries, this section was given more importance. Different strategies that are used in various parts of the world were presented. Uses of deterrents such as chemical, sound, honey bees etc. were discussed. Among the physical barriers, the effects of solar fencing, elephant proof trenches were discussed. The effectiveness of some alternate crop pattern in areas abetting the elephant habitat was also highlighted. Few papers on the importance of awareness creation among the stack-holders as one of the mitigation strategies were also presented.

Based on the observation and discussion, the conclusion arrived at was that none of the above strategies found to be 100% effective to mitigate Human-elephant conflicts. The studies on the use of various types of deterrents revealed that, although these strategies worked well initially, it failed as the elephants were found habituated in the course of time.

Regarding physical barriers, it is found that the effectiveness of solar powered fencing depends on the proper maintenance. A new concept introduced for solar power fencing was the use of 'polywire electric fencing system. This new system was stated to be effective for small farm land and could be dismantled and put into use during the problematic season. As it is cost effective, it is affordable for individual farmers. The other form of physical barrier, the elephant proof trenches, has faced heavy criticism in Tamil Nadu context. A study paper presented in the symposium concluded that the elephant proof trench that were created during recent years in some parts of Tamil Nadu were found totally ineffective due to some technical and managements flaws in spite of spending several million rupees. This paper ends with some useful suggestions for the effective management of barriers for preventing wild animals' entry.

A few papers on the importance of awareness creation among the stake-holders as one of the effective mitigation strategies for Human-Elephant conflicts (HEC) were also presented. Human-Elephant Coexistence (HECx) was focused by the

***Member, Governing Board, Society for Wildlife Interface & Forestry Training (SWIFT), Coimbatore, Tamil Nadu. Email: paulrajifs@gmail.com**

Elephant and Rhino Symposium 2016 participants. Photo: Singapore zoo

Presentation on Tamil Folklore and HEC mitigation. Photo: R. Marimuthu, ZOO

presenters for the areas where the conflict is a common and predominant feature. Some of the coexisting techniques discussed are: i. Change of crop pattern, ii. Creating awareness about the problematic elephants and their seasonal invasion, iii. Useful techniques to prevent elephant entry, iv. Awareness about importance of conservation and protection of elephants. A novel awareness creation technique well suited for the local community presented by the Education Officer, R. Marimuthu from Zoo Outreach Organization attracted many participants.

Captive management of elephants

Among six papers presented on this section of study, the paper on the 'Rejuvenation camps for the captive elephants of Tamil Nadu' has received greater attention as it was considered as a unique conservation strategy and practiced nowhere in any parts of the world except in Tamil Nadu. This paved way for following this strategy in other parts of India as well as in other elephant countries. The presenter of this paper Dr. S. Paulraj emphasized the need for further addition of captive breeding to this ongoing programme and, this was welcomed by a funding agency with an offer to fund if an appropriate proposal is received.

The other important part of captive elephant management was semen collection, preservation and artificial insemination techniques. The importance of artificial insemination in conservation and in preservation of genetic diversity was emphasized by the presenters. The specialists in this field offered their willingness to assist in artificial insemination programme if required by any elephant countries.

Veterinary management

Among various health issues, tuberculosis, recurrent keratitis and foot disorders among captive elephants were focused by the presenters. It was emphasized that, an early treatment for foot related diseases is imperative in order to prevent major leg disorder and subsequent torturous life of the captive elephants. The problems of tuberculosis as a zoonotic risk were discussed by some authors. Although the prevalence of tuberculosis is reported as too low especially among north-eastern India domestic populations, its presence is predicted up to 25% for the Indian captive elephants. Use of some modern TB screening techniques that are safe and effective were proposed by American experts in this field.

A global perspective of a fatal hemorrhage viral disease, EEHV (Elephant Endotheliotropic Herpesvirus) was presented by the San Diego zoo veterinarian. He emphasized the need for screening of young captive elephants for this disease as, they are very susceptible and, he recommended further that, an early detection would pave way for easy treatment and cure. The higher prevalence of this disease among Asian elephants is considered as a serious concern. However, a matter for consolation is that, a new vaccination protocol for this disease has been identified and will be ready for use shortly according to the scientists from Baylor college of Medicine who made a presentation on this subject.

Elephant scientists from Kerala highlighted the need for studying some emerging diseases of elephants in captivity and their management protocol. Among several emerging diseases listed by them, the deadly and most important are, FMD (Foot and mouth disease) and osteoarthritis. The authors suggested some successful treatment protocol for these diseases and also proposed screening of evidences on these specific diseases as a part of health management of captive elephants.

Habitat management

The importance elephant corridors and traditional elephant pathways in elephant habitat management was the main focus of the symposium presentations under this category. Method of Identifying the corridor, successful execution of acquisition of corridor areas and rehabilitation of the native people were discussed with examples.

The author presenting a paper on elephant rejuvenation camp. Photo: R. Marimuthu, ZOO

Some advanced and novel findings

Among various findings presented in the symposium the following two findings may be considered as unique and are of applied interest.

i.Application of genetic marker technique using Dung DNA analysis for census and population studies. This technique has been developed for rhinos and elephants by the scientists from Assam. This genetic marker is said to be individual specific and thus will provide accurate census figures. This technique provide wide applications in the conservation and protection of highly endangered species like Rhino and Elephants.

ii. Another interesting finding was the use of the elephant genome protein p53 in the human cancer treatment. Lisa Abegglen, a scientist from Huntsman Cancer Institute, has found out that the major reason for the very low occurrence of cancer among elephants is the presence of more copies of p53 gene (20 copies compare to one copy in human) that are responsible for destroying the cancer cells effectively in the elephant body. This scientist is hopeful of using this elephant gene protein (EP53) as an effective therapeutic agent for controlling the proliferation of cancer cells in human. This finding not only helpful for human but also used to create awareness on the importance of conservation of elephants for human welfare.

INTERNATIONAL ELEPHANT FOUNDATION.ORG

Wildlife Reserves Singapore Group

INTERNATIONAL RHINO FOUNDATION

JURONG BIRD PARK | NIGHT SAFARI | River Safari | Singapore Zoo | Wildlife Reserves Singapore Conservation Fund

---

Announcement

Twenty-fifth Annual Conference
International Association of Avian Trainers and Educators
Atlanta 2017: Where Talent Meets Inspiration
February 22-25, 2017
Hosted in Atlanta, GA USA

Papers, posters, site visits, and workshops. Topics will include avian behavior, training, husbandry, conservation, education, enrichment, and show presentation/production.

IAATE members may apply for our Walter Crawford Memorial Conference Scholarship (to cover expenses of conference attendance) as well as grants to support their conservation and education initiatives. *See website for application forms.*

Paper presenters receive discounted registration fees. Please mail abstracts to:

IAATE Vice President **helen_dishaw@yahoo.com**

For detailed Call for Papers and more information about the conference visit **www.IAATE.org**