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Summarized Minutes of the 2nd Meeting Asian Elephant Specialist Group held at Sri Lanka Foundation Insitute, Colombo, 20 - 21 August, 1980

IUCN/WWF Asian Elephant Coordinating Centre
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**Summarized Minutes of the 2nd Meeting Asian Elephant Specialist Group
held at Sri Lanka Foundation Institute, Colombo, 20 - 21 August, 1980
by IUCN/WWF Asian Elephant Coordinating Centre**

LIST OF PARTICIPANTS

ALWIS, Mr. K.C.I. de	Asst. Director (Aquarium and Research), Zoological Gardens, Sri Lanka.
ALWIS, Mr. W.L.E. de	Director, Dept. Wildlife Conservation, and Zoological Gardens, Sri Lanka.
AMUNUGAMA, Mr. Sarath	Secretary, Ministry of State, Sri Lanka.
ARUDPRAGASAM, Prof. K.D.	Head, Dept. of Zoology, University of Colombo.
ATTANAYAKE, Mr. C.P.	Asst. Director (Publicity), Dept. of Wildlife Conservation, Sri Lanka.
ATAPATTU, Dr. S.	Deputy Director (Veterinary and Research), Dept. of Wildlife Conservation, Sri Lanka.
BALASUBRAMANIAM, Prof. S.	Head, Dept. of Botany, University of Peradeniya.
BLAIR, Mr. J.A.S.	Expert in Economic Planning and Evaluation, FELDA Institute of Land Development, West Malaysia.
CRUSZ, Prof. H.	Head, Dept. of Zoology, University of Peradeniya.
CRUTCHLEY, Miss C.	Secretary to Meeting.
DANIEL, Mr. J.C.	Chairman, Asian Elephant Specialist Group.
DAVIDAR, Mr. E.R.	Asian Elephant Specialist Group (S. India).
DITTUS, Dr. W.	Smithsonian Institution Primate Project, Sri Lanka.
EVANS, Mr. J.	USAID, Colombo.
FERNANDO, Mr. A.B.	Asst. Director (Elephant Conservation), Dept. of Wildlife Conservation, Sri Lanka.
FERNANDO, Mr. S.B.U.	Asst. Director (General), Zoological Gardens, Sri Lanka.
HUNDLEY, Mr. H.G.	Asian Elephant Specialist Group (Burma).
ISHWARAN, Mr. N.	Dept. of Zoology, University of Peradeniya.
JAYAWARDENE, Mr. C.V.	Asst. Director (Southern Region), Dept. of Wildlife Conservation, Sri Lanka.
KURT, Dr. F.	Asian Elephant Specialist Group.
LAHIRI CHOUDHURY, Dr. D.K.	Asian Elephant Specialist Group (N.E. India).
LAURENT, Mr. G.	FAO Resident Representative, Sri Lanka.
MISHRA, Mr. H.	Ecologist, National Parks and Wildlife Conservation Office, Nepal.
NAIR, Mr. P. Vijaykumaran	Indian Institute of Science, Bangalore.

- OLIVIER, Dr. R.C.D. Deputy Chairman, Asian Elephant Specialist Group, and Regional Coordinator (Asia), IUCN/WWF Elephant Survey and Conservation Programme.
- PACKEER, Mr. A.S.A. Sr. Deputy Director, Dept. of Wildlife Conservation, Sri Lanka.
- Parthasarathy, Mr. M.A. Asian Elephant Specialist Group (S. India).
- PERERA, Mr. M.M.D. Asst. Director (Northern Region), Dept. of Wildlife Conservation, Sri Lanka.
- PHAIROT, Mr. S. Director, Wildlife Conservation Division, Royal Forest Dept., Thailand.
- REZAKHAN, Dr. M.A. Asian Elephant Specialist Group (Bangladesh).
- SAHARUDIN, Mr. Anan Deputy Director (Elephant Unit), Dept. of Wildlife and National Parks, West Malaysia.
- SCOTT, Mr. R. SSC Executive Officer, IUCN.
- SENEVIRATNE, Mr. E.W. Asst. Conservator of Forests, Sri Lanka.
- SHAHI, Mr. S.P. Asian Elephant Specialist Group (Central India).
- SHANMUGARAJAH, Mr. M. Asst. Secretary, Ministry of State, Sri Lanka.
- SILVA, Mr. R. de President, Sri Lanka Natural History Society.
- SIVASAMBU, Mr. T. Asst. Director (Admin.), Zoological Gardens, Sri Lanka.
- SUKUMAR, Mr. R. Indian Institute of Science, Bangalore.
- SUWAT, Mr. S. National Parks Division, Royal Forest Dept., Thailand.
- SYARIEF, Mr. Bastaman Directorate of Nature Conservation (PPA), Indonesia.
- VIJAYAN, Dr. V.S. Asian Elephant Specialist Group (S. India).
- WICKRAMASINGHE, Mr. C. Dept. of Wildlife Conservation, Sri Lanka (Ret.).
- WRIGHT, Mrs. Anne Asian Elephant Specialist Group (N.E. India).

OPENING

The IUCN/SSC Asian Elephant Specialist Group Meeting was held in Colombo at the Sri Lanka Foundation Institute on the 20th and 21st August, 1980. Mr. J.C. Daniel, the Chairman of the Asian Elephant Specialist Group presided. After a traditional oil lamp ceremony, Mr. Sarath Amunugama, Secretary to the Ministry of State, opened the Meeting officially with a speech.

Mr. Amunugama spoke of the increase in the numbers of reserves notified by the Government of Sri Lanka and the important decision it had taken a few months before, to carve out buffer zones between populated areas and sanctuaries. He said that a second Zoological Park was being created and this would be useful for animals which had become isolated and needed rescuing. He stressed, however, that the major problem confronting decision makers in Sri Lanka was the rapidly increasing population which compelled the Government to work out a new balance between the wants of man and the wants of wildlife. The two cannot be isolated.

Mr. Amunugama concluded his speech as follows:

"I have no doubt that you have heard of the Mahaweli scheme, where Government has invested the biggest part of its budget on taming the Mahaweli River, channeling the water into what was called the dry zone, which has become a priority decision of Government to divert water from the excess area in the hill country to the dry zone so that double cropping and maybe triple cropping will become possible. This has been a dream of all Governments for a long time in this country in order to convert the dry zone into a wet zone.

So in this process one has to reanalyze the role of wildlife, the role of fauna and flora in the new environment, the new civilization that will arise in the dry zone. This is a task that requires tremendous imagination, which goes beyond immediate specialist needs of looking after the elephant, of establishing the parameters between the elephant and its habitat, and I am sure that this is one of the areas you will consider because each of you in his own country would have been subject to these pressures. I am very glad that, at least in Sri Lanka, we have been able to balance to some extent, perhaps not as much as we would like, but still at some satisfactory level we have been able to balance the needs of the environment and the needs of the people to live in that habitat.

We have supported the establishment of the Elephant Secretariat here in Sri Lanka. We are very glad Dr. Olivier is here with us, and I think we will be able to work out a program with his specialist advice and financial assistance. As mentioned we will be able to work out a program for the saving of the elephant, and in drawing up this program - I think we already have some sort of blueprint - your advice, your deliberations, will no doubt be very, very important.

So please forgive me if I am trying to draw the other side of the picture -- I am too amateurish and my knowledge is too little in regard to the areas which you would discuss so I thought it would be more prudent of me to put to you the opposite point of view so that you could consider it in your deliberations.

I do not want to take much more of your time. I would like to welcome you to Sri Lanka -- one of the good things in being in the Ministry of State is that we have not only wildlife but tourism attached to the Ministry. We wish that you have an opportunity of seeing our country, not only the wildlife, but the beaches, the hospitality of our people, and so on -- I am sure Lyn would have arranged for all that. We would like to welcome you to Sri Lanka and hope that your deliberations will be successful, and not only that, that you will have contact with the people of this country, and that when you leave Sri Lanka you will carry back very fond memories of your stay. Thank you very much. I wish your meeting all success."

Mr. J.C. Daniel then replied as follows:

"At the outset I would like to express on behalf of myself and my colleagues in the Asian Elephant Specialist Group our most sincere thanks for generous hospitality that has been extended to us to hold the meeting of our group in this beautiful city. I presume that all those who are present here today are aware of the I U C N, the International Union for the Conservation of Nature and Natural Resources. I hope, however, that you will bear with me, if I take time to explain its activities. The I U C N's main endeavor is the conservation of the depleted and fast disappearing living resources of the world and in this undertaking is one of the best examples of international co-operation. In the developing countries conservationists are often accused of being insensitive to development. Nothing can be further from the truth; what we try to assure is that there is orderly development and the intrinsic value of natural resources and the essential nature of natural resources are not lost sight of in the quest for wealth. Our thesis has been explicitly detailed in the World Conservation Strategy prepared by the I U C N and it is our hope that those concerned with development of natural resources, especially in the third world, and those among the organizations of the United Nations concerned with development in these countries, would consider the conservation strategy of the I U C N as a policy basis document.

The Asian Elephant Specialist Group which will be holding its deliberations here today and tomorrow is an arm of the Survival Service Commission* of the I U C N. The Survival Service Commission is the expression of the concern of the nations of the world for the species of animals which have become endangered and have been brought to the verge

* Since renamed the Species Survival Commission.

of extinction by the direct or indirect actions of man. The Survival Service Commission through its various Specialist Groups examines how best to save the remaining populations of the endangered species of the world. The measures that the Commission recommends are purely in an advisory capacity and our appeal is addressed, usually very successfully, to that peculiarly human character - the conscience of man.

The efforts of our Group relate to the Asian Elephant, a species which now has a fraction of the population of its African counterpart and whose survival though in small numbers over a vast range, is a tribute to the quality of man in southeast Asia. The Asian Elephant is a part of the culture of man in tropical Asia. It is an integral part of the religions of the region and it is our hope that it will not be sacrificed in the search for a better life for the peoples of the region.

In our deliberations here we will examine the status of the species in the countries of its occurrence and how best to use the comparatively small sums available to us in the conservation of the elephant throughout its range."

Dr. M.A. Rezakhan, from the Department of Zoology, University of Dacca, was then called upon to read his paper on the current elephant situation in Bangladesh.

BANGLADESH - Dr. M.A. Rezakhan

Dr. Rezakhan's report was based on a survey he carried out between May 1978 and July 1980 on the distribution and population status of the Asian Elephant in Bangladesh. The survey was conducted under a grant from the New York Zoological Society. He said that there were about 22,000 km² of forest left in Bangladesh, or about 15% of the total area. Of the remaining forest only about 11,000 km² are what are called Reserved Forests, and which constitute the main elephant habitat. However, the elephant range occupies only an estimated tenth of the Reserved Forest (i.e. around 1,100 km²).

The elephant habitat in Bangladesh is fast disappearing. The Reserved Forests are being systematically clear-felled and replaced by monocultures of teak, rubber, tea, jarul, pineapple, jackfruit, etc. Large areas of forest are degraded by jhoom (shifting) cultivation, and there is much illegal logging. Other areas are appropriated for settlement, cultivable fields, and so on.

Dr. Rezakhan estimated the population of wild elephants in Bangladesh as between 205 and 222, of which between 142 and 157 would be resident, and between 59 and 61 nonresident. He noted four solitary bulls in addition. Nonresident animals move across the borders with Burma (Arakan) and India (Mizoram, Tripura, Assam, and Meghalaya).

Dr. Rezakhan pointed out that while the Reserved Forests of the Chittagong Hill Tracts supported the major elephant populations, there is literally no chance for effective management in these areas as long as the current political situation persists. He noted that the fate of the elephant lay in the hands of the people living in those areas (as opposed to Forestry or other Govt. officials), but felt that they would survive as long as the forest did.

Dr. Rezakhan recommended a 200 km² belt in the Cox's Bazaar - Teknaf - Reju Reserved Forest as currently the best area to declare and manage as an elephant sanctuary. This area supports some 40 or more elephants in 6 groups. It is bounded on the east by a metalled highway, and on the west by the coast of the Bay of Bengal, and the whole is under effective Government control.

Dr. Rezakhan suggested that if selection felling could be substituted for clear felling in the area, it could provide a last sanctuary for the elephant and many other species in Bangladesh. The area includes three existing game reserves and has good tourist potential.

In the concluding discussion Dr. Rezakhan noted that implementation of existing forest working plans would mean that in a few years (i.e. by 2000) all natural forest will be felled. This would spell the end of the elephant in Bangladesh. To enhance elephant conservation he urged:

1. A stop to clear felling operations, at least in the Teknaf area, where an Elephant Sanctuary should be declared.
2. Wildlife circle officials should not be transferred.
3. Forest working plan prescriptions need revision.
4. Some compensation system should be worked out for elephant damage, particularly to bamboo and plantations.
5. Trade in ivory be declared illegal.

The Chairman then read excerpts from a paper on the status of the Asian Elephant in Burma, 1980, sent by Mr. H.G. Hundley, Retired Conservator of Forests. Mr. Hundley was unable to attend owing to other commitments.

BURMA - Mr. H.G. Hundley

According to Mr. Hundley's report elephants are still found throughout Burma's forests, which form 57% of its total area of 676,320 km², except perhaps in the central dry zone, where water and cover are lacking, and the very high mountains in the north. Burma possesses favorable conditions for the perpetual existence of the wild elephant, but there is increasing competition with the human population.

Mr. Hundley notes that nowadays poaching is rife, not only in the 'hilly districts', but in areas not very far from Rangoon, in the forests of the South Arakan yoma and the Pegu yomas. A recent case of poaching wild elephants came to light where 9 men, led by a Village-tract People's Council Chairman and a deputy-leader of the local security force were tried and found guilty of killing 18 wild elephants in the Pegu yomas. Fourteen tusks were traced to a shop in Rangoon. All the men were jailed, the leader getting 5 years, the rest 3 years each.

Mr. Hundley points out that deaths from sporting licenses, and destruction of crop raiders and "rogues" have been minimal, but deaths from poaching may be assumed to be considerable owing to lack of control and inspection. Taking all this into account he makes an estimate of 6,200 \pm 1,000 wild elephants in Burma at the end of 1979-80.

Over the past 10 years a yearly average of 143 elephants have been caught (approx. 14% by immobilization- the balance by traditional methods). Of these 23.3% were released or died. The capture target for 1980-81 is 200 animals. The official statistics for tame elephants in Burma for 1978-79 give a total of 5,973, of which 2,343 were owned by the State Timber Corporation, 102 by the Forest Department, with the remaining 3,528 in private hands.

In conclusion Mr. Hundley notes that although there is ample legislation for the protection of wild elephants, as well as properly planned catching operations and attendant care of captives, in practice they have been unable to protect them against insatiable poachers. They have also failed to establish permanent "Elephant Sanctuaries" where elephants can live in peace and breed freely.

Mr. Hundley offers the following recommendations:

- a. Establishment of Elephant Sanctuaries should be of top priority.
- b. For proper planning it is essential to have an accurate census of wild elephants, plus research into the birth rate of both wild and tame elephants.
- c. To ensure regular censuses are carried out properly, some forest officers must receive appropriate training.
- d. A special Wildlife Division, or Department, is needed if wildlife conservation and management is to become effective in Burma.
- e. Last, but not least (and related perhaps to the above), it is most important to clamp down on poachers. Who finances them? What arms do they use, and where do they get the arms and ammunition from?

After reading extracts from Mr. Hundley's paper, Mr. Daniel then called upon Dr. D.K. Lahiri Choudhury to outline the current situation facing elephants in northeast India.

NORTHEAST INDIA - Dr. D.K. Lahiri Choudhury

Dr. Choudhury presented a most comprehensive report on the present position of the elephant status survey program in northeast India (August, 1980). The program, which started in 1977, involves eight states: West Bengal (North), Arunachal Pradesh, Assam, Meghalaya, Tripura, Manipur, Nagaland, and Mizoram. The work was initially financed by Members' own resources, but for the last year activities have been supported by a generous Rs. 10,000/grant received from Grindlays Bank.

The countries bordering the northeast region of India are Nepal, Bhutan, China, Burma, and Bangladesh. Elephant ranges extend in all cases, with the possible exception of China, across the international borders. A substantial number of elephants move regularly between Bhutan and India. Although their range in Bhutan probably does not extend to any depth, since this is one of the most important elephant tracts in the sub-region, Dr. Choudhury pointed out that no proper evaluation of elephant status is possible here until we include Bhutan in the scope of our work.

Only a brief state by state resume of Dr. Choudhury's paper can be given here. He noted however, that the only states for which there was no information were Manipur and Mizoram. A 1977 Government report for the latter state is supposed to exist, but the Group has not yet obtained a copy. Dr. Choudhury drew attention to the fact that proposed work is considerably curtailed by a political and law-and-order situation that has steadily deteriorated since mid-1979. The only states with the potential for field work this winter were Meghalaya and Nagaland.

North Bengal

The report on North Bengal was given in great detail to indicate what the Group is trying to achieve elsewhere in the northeast region. The completed study has revealed 3 separate elephant populations; west of the Torsa River, east of the Torsa, and one seasonally transient from Assam. The estimated numbers of elephants in each are 80, 65, and 10 respectively. Dr. Choudhury stated that from figures available there was a 45% reduction in the elephant population from 1974 to 1980. The figure could be as high as 60% for the west of Torsa population. The entire elephant range has been mapped and the habitat classified into four categories; crucial core areas, range of family groups, areas used by lone bulls only, areas free from elephants. Despite extremely disturbed conditions, about 21% of the total area available to elephants apparently fell into the last category.

Tripura

According to official estimates, the elephant population in the state is around 150 animals. The future is not bright. State Government plans to settle forests for cultivation will fragment them. Dr. Choudhury believes the process will then be the same as observed in North Bengal. Instead of compact tracts of forest, we shall have isolated pockets of habitat. Elephants by force of habit will move across cultivations from one pocket to

another; man-elephant confrontation will increase; and eventually the elephants will have to go. This is the main threat to elephants here, but poaching seems also to be on the increase.

In November 1978 the Gomti Wildlife Sanctuary, a 200 km² area including some of the most important elephant habitat (and some 50 - 75 animals, or half the state population) was notified. Unfortunately, the area was de-notified a few weeks later due to political pressure.

Meghalaya

The rough estimate of the elephant population in the Garo and Khasi Hills is 2,400 and for the Jainti Hills, 75. Dr. Choudhury notes that while data are lacking for vast areas, a more rigorous field investigation may eventually confirm much lower and more realistic figures. A census is planned in the coming dry weather.

The main dangers here are habitat destruction on a vast scale through jhooming (even in the state Reserved Forests), and a new phenomenon: elephant hunting for meat, especially in the Khasi and Jainti Hills.

Nagaland

According to a report submitted by the Nagaland Forest Department to the IG of Forests, Delhi, in January 1980, the estimated total number of elephants is 238, their range being limited to the northwestern border of the state. At least 14 of these live in the Itangki Sanctuary under the Forest Department's control.

Arunachal

The Arunachal Forest Department has supplied a map indicating the elephant range, and an unverified estimate of 2,000 animals.

Assam

Due to unsettled conditions, no consolidated picture of elephant status in Assam has emerged yet. Unconfirmed newspaper reports put the number of elephants in Manas Sanctuary this year at 1,100 and in Kaziranga National Park at 780.

Dr. Choudhury and colleagues posed a number of recommendations and projects for the northeastern region.

1. For the long-term future of elephants (and other wildlife), it is felt we must evolve a forestry practice that combines the needs of commercial forestry with the demands of wildlife. The problem is acute in intensively managed forest areas like North Bengal where 20% of the forest area has already been converted to plantations, and the rate of conversion has gone up dramatically in recent years.

Dr. Choudhury circulated separately a Rs .34 million proposal for a ten year research program in northwest Bengal for habitat manipulation to suit wildlife food needs in commercial forestry areas.

2. Group recommendations for all the tribal states in the subregion - notably Meghalaya and Nagaland - will be valueless unless the legal status of their forests is changed to conform with the all-India practice, and they are brought under scientific management.

3. It was proposed that the Govt. of India be urged to declare Buxa Forest Division and Nilpara Range (of Cooch Bihar Forest Division) in North Bengal as a Tiger Reserve. The core area of this proposed Reserve would include the most important areas of elephant habitat in the sub-Himalayan tract, and the Reserve, if notified, would effectively extend the Manas Tiger Reserve in Assam which is contiguous to it. It would provide a continuous link between Jaldapara Wildlife Sanctuary in the west, and Manas in the east. The whole would become the largest sub-Himalayan wildlife preserve and protected belt in the country.

It was recommended that as soon as the Sanctuary is notified Elephant Funds should contribute Rs.200,000 for radios and elephant-barriers on the basis of a 50-50 agreement with the Government, who will then put in an equal amount.

Attention was drawn to the fact that at present the Government is willing to declare the area as a Sanctuary, and it was believed that with the incentive of a donation they will contribute an equal amount of money. It was further noted that this proposal would save a whole region of forest containing the surviving herds of elephant in north West Bengal, and should be accorded topmost priority. This was endorsed in principle by the Meeting.

4. The Gurubathan Valley is one of the few unexploited areas left in West Bengal. It must be notified as a sanctuary immediately, if this last example of the unique forest which once covered the sub-Himalayan belt is to be saved. The Forest Department working plans for the area should be altered accordingly.

5. A proposal was made for \$21,375 needed to continue surveys in the subregion for 1980/81.

6. A \$58,500.00 proposal was made for crop protection in several parts of the subregion during 1980/81, using a system based on teams of "anchored mela-shikar" elephants. The west of Torsa area was identified as a priority area for such a scheme.

7. In the elephant range south of the Brahmaputra, the Garo Hills - west Khasi Hills range (in Meghalaya), and further east, the Mikir Hills - North Kachar - Kaziranga range (in Assam), were identified as priority areas for action, deserving "special care and study".

8. The Tripura State Govt. was requested to provide for corridors when settling forests by taking into account the habitat preferences of wild animals, particularly elephants.

Mr. H. Mishra, an ecologist in the National Parks and Wildlife Conservation Office of His Majesty's Government, Nepal and also a Smithsonian Institution/University of Edinburgh scholar, was then called upon to present to the Group his summary on the status of the elephant within his country.

NEPAL - Mr. H. Mishra

Mr. Mishra began by explaining that before the fifties, elephants were distributed all along the subtropical forests of the terai. The malaria eradication program of the early fifties triggered a large influx of settlers and more than 80% of the natural habitat was destroyed. Consequently, the elephant population has shrunk to less than 35 individuals scattered through the country as follows:

- | | |
|--------------------------|---------|
| 1. Sukla Phanta Reserve | 5 - 10 |
| 2. Royal Karnali Reserve | 7 - 12 |
| 3. Thori-Sikanbas area | 10 - 12 |

Elephants are fully protected, but poaching seems to be almost non-existent because of religious sentiment. No cases have been recorded for a decade. Mr. Mishra added however, that knowledge about the elephants, their home ranges and movement patterns, is also nonexistent.

He therefore made the following proposal:

To initiate a modest elephant monitoring program in areas adjacent to the Royal Chitwan National Park in the Thori-Sikanbas area. Mr. Mishra envisaged that this would provide some basic information about this small herd and allow recommendations to be made to the government on the needs to extend the park area to incorporate the elephant range. To do so, he maintained, would significantly improve its viability as a tiger, rhino, and elephant reserve. He thus asked us to approve a modest contribution for the study of elephants in this area - a study that would have much benefit, not only for the elephants but other endangered species also.

Mr. Mishra concluded by commenting that in Nepal it is believed Sri Lanka has an international reputation as a leader in Asian wildlife conservation. Thus he felt it was only right that Colombo should have been chosen as the venue of the IUCN/WWF Asian Elephant Coordinating Centre and saw this as further evidence that international conservationists looked to the Government and people of Sri Lanka to provide leadership and knowledge in the conservation and management of the Asian Elephant.

Mr. S.P. Shahi, Retired Chief Conservator of Forests, Bihar, was then asked to present his resume.

CENTRAL INDIA - Mr. S.P. Shahi

Mr. Shahi gave an account of elephant status in central India. The states concerned are Orissa, Bihar and the far south of West Bengal. The latter area only holds two or three resident solitaries in the Ayodhya Hills.

Bihar

Mr. Shahi reported on 3 elephant ranges, Palamau with 40 elephants; Singbhum with 200; and Dhalbhum with 70, giving a conservative total for the state of 300 elephants.

The Palamau population's range coincides with a Project Tiger area, and so is not itself threatened. However, crop-raiding continues to be a serious problem. A compensation scheme is needed and is under active consideration by the State Government. Furthermore, Mr. Shahi expressed fears that construction of the Auranga and Kutku dams, which between them will remove some 6,240 ha of elephant habitat, will have an adverse impact.

By contrast, the Singbhum elephants are faced by twin threats. The first is from various impacts deriving from widespread and accelerated mining (iron ore) operations. The second is large scale clear felling and raising of teak. While 900 ha/a are officially cleared, nearly 1,600 ha of elephant habitat has been lost through illicit activities.

According to Mr. Shahi about 20 of the Dhalbhum elephants are resident in the Dalma Hill Sanctuary, but this number doubles in the dry weather. Due to an intransigent attitude on the part of Forestry officials, felling continues in the vital dry-season concentration area.

Orissa

Nearly 20,000 km² of forest in Orissa are now believed to hold in the region of 2,000 elephants. Mr. Shahi also informed us that for the most part the man - elephant relationship is not a problem in the state. Crop-raiding is reported to be seasonally high in only one district. He mentioned, however, a group of 50 to 60 elephants that had become pocketed in an area of very degraded forest in Chandka range, and become aggressive.

Mr. Shahi put forward a number of proposals and recommendations:

Labor lines for workers on the Auranga dam, and its approach road, should be located on the right bank of the river outside the Reserve.

Iron ore extraction in the Singbhum forests is in need of stricter control. River pollution is a serious threat to man and wildlife.

Mr. Shahi recorded the need for in-depth ecological research on the Palamau elephants. He also referred to the proposed interstate sanctuary for elephants in West Bengal - Bihar. Under this proposal West Bengal would create the 162 km² Mayurjhana Sanctuary. Bihar would connect this with Dalma

by declaring the forests in between as a 'closed' area. Progress since January 1979 with this proposal is unknown, and while Mr. Shahi felt the Group should of course continue to endorse it, he expressed the opinion that before a plan of this magnitude is executed a lot of data on socio-economic conditions, land use pattern, and elephant migration routes should be collected. Accordingly Mr. Shahi submitted a \$4,000 proposal for the research necessary in both Palamau and Dalma for the two years 1980/81.

4. The present "core-area" of Dalma Sanctuary (i.e. where there is no felling) is 35 km². However, the intensively used dry-season elephant concentration area includes a further 20 km². Felling should be stopped in the entire 55 km².

5. Further surveys are needed in Orissa. Mr. Shahi was to visit Orissa in Sept./Oct. 1980 to draw up a workplan. A \$17,625.00 proposal for this work during 1980/81 was submitted.

Mr. P. Vijaykumaran Nair, of the Centre of Theoretical Studies, Indian Institute of Science, Bangalore, was next to deliver a summary on the status of the elephant within Southern India. Mr. Nair is a student of Group Member Dr. Madhav Gadgil who was unfortunately unable to attend the Meeting in person.

SOUTH INDIA - Mr. Vijaykumaran Nair

Mr. Nair briefed the meeting on the elephant populations identifiable in the subregion and their estimated size. From south to north these are as follows:

	<u>Name</u>	<u>Elephants</u>
1.	Ashambu or <u>Agastyamalai</u> Hills	130 - 140
2.	<u>Periyar</u> plateau	700 - 800
3.	Elamalai, Nelliampathi, <u>Anamalai</u> , and Palavi Hills	1100
4.	South Wynad, Nilambur Valley, Silent Valley, Talamalai plateau, Bandipur Tiger Reserve and Mudulumai Wildlife Sanctuary (<u>Nilgiris</u>)	1800 - 2000
5.	Moyar gorge, Biligirirungan Hills, Kollegal and Hasanur plateau, and Kanakpura, Hosur, Dharmapuri and Anekal Hills (<u>Eastern Ghats</u>)	1800 - 2000
6.	North Wynad, Kakankote and <u>Nagerhole</u> forests	300

7. Titimati-Mudigere forests, Bhadra
Sanctuary, Shimoga and North Kanara
Forests, and Tellicheri division
(Malnad)

180

6010 - 6520

Mr. Nair gave a conservative estimate of 5,830 elephants in southern India. He drew attention to four great populations namely in the Periyar and adjoining areas, Anamalais and adjoining areas, at the foot of the Nilgiris and adjoining areas, and on the Eastern Ghats. These populations are apparently discrete except the Nilgiris population is continuous on the east with the Eastern Ghats population.

Mr. Nair told us that the present range of elephants is only about 20% of its original range at the beginning of the British influence in the 1850's. He described, with examples, the large variety of factors which have been responsible for reduction in and severe fragmentation of elephant habitat and decimation of elephant populations. These include tea, coffee, cardamom, rubber, teak and eucalyptus plantations; heavy exploitation of timber; spread of agriculture, hydroelectric and irrigation projects; the demand of forest based industries for soft wood, bamboo, reeds; capture of elephants for use, poaching for ivory, and destruction to protect life and crops.

Mr. Nair concluded by considering the future of elephant in South India, which overall he felt was obviously bleak. The processes of shrinkage, degradation and fragmentation of the habitat are bound to continue. The time has therefore come to delineate the remaining viable areas of elephant habitat and make a serious attempt to preserve them at all costs. Three such viable areas could be identified:

- a. The Mysore plateau (including the Nilgiris range, together with parts of the Nagerhole and Eastern Ghats ranges).
- b. The Anamalais range.
- c. The Periyar range.

To preserve the integrity of these three viable habitats it is recommended:

1. Further clear felling operations, plantations and hydroelectric and irrigation projects must be prevented. A whole series of sanctum sanctori should be demarcated throughout these habitats where no forestry operations are carried out.
2. Elsewhere forestry operations should be restricted to limited selection felling.

3. Serious attention should be devoted to preventing crop raiding through whatever means are available. Effective compensation for loss of crop or life must be paid.
4. A very realistic attitude must be adopted towards elephant management in the other areas, as well as towards possible surplus in the three key areas. All avenues for productive utilization of these elephants should continue to be explored.
5. To facilitate utilization, the elephant may be shifted to Schedule 11B of the Wildlife Act.
6. Ivory poaching must be stopped by destroying the economic incentives. This could be achieved by introducing cheap synthetic ivory and by nationalizing the marketing of ivory and ivory products.

Mr. Nair called for funds to carry out the research necessary to ensure effective implementation of the above recommendations.

The Chairman then called upon Dr. V.S. Vijayan, also from South India, to deliver his resume. Dr. Vijayan is a member of the Kerala Forest Research Institute and is based at their subcenter in the Periyar Tiger Reserve.

SOUTH INDIA - Dr. V.S. Vijayan

In his talk Dr. Vijayan concentrated on his home state of Kerala, where there are an estimated 2,000 elephants. Some of these are shared with the neighboring states of Karnataka and Tamil Nadu.

Dr. Vijayan mentioned that the three major elephant populations in Kerala occur in the Thekkady (Periyar), Parambikolam (Anamalai) and Wynad (Nilgiri) areas.

All these areas are threatened by hydroelectric projects. There are 10 or 11 such projects underway and 23 more proposed. As a result all river valleys will be destroyed. In addition there has been considerable destruction of forests and poaching of elephants on the eastern side of the Thekkady area, and the forests northwest of Periyar are a major center of poaching of elephants for tusks. In the Anaimalais the habitat has been encroached upon for agriculture, particularly near the foot hills.

Dr. Vijayan recommended action as follows:

1. Political pressure to ensure creation of reserves suitable to maintain and protect viable populations in the long term.
2. Research on the ecology of elephants and on the economics of problems relating to elephant conservation and management, particularly in the Periyar area.

3. Improve direct protection of elephants and their habitats by enhancing law-enforcement staff, equipment and training.
4. The scheme threatening Silent Valley must be halted.

Mr. R. Sukumar, another of Dr. Gadgil's students from the Indian Institute of Science, was next to present a report. This again concerned South India.

SOUTH INDIA - Mr. R. Sukumar

Mr. Sukumar briefed the meeting on the results of a survey of elephant distribution in the Eastern Ghats of Karnataka and Tamil Nadu, carried out in June 1980. The surveyed range covers an area of over 8000 km², of which some 60% is under forest cover. This range, which Mr. Sukumar estimates to hold over 2000 elephants, is as yet not widely recognized as a stronghold of the Asian Elephant. The distribution of elephants is continuous throughout, although there are numerous pockets of cultivation within the forest. Apart from the Cauvery River and its tributaries passing through, the area poses great scarcity of water for elephants. Problems with crop raiding and killing of people by elephants are more acute here than anywhere else. Out of the 70 villages visited during the survey, 54 are subject to elephant crop damage. In at least 5 villages the annual damage is very severe, with between 25 to 50% of the total crop damaged in some fields. In another 35 villages the problem is moderately severe, while in the remaining 14 villages it is not serious. During the last 2 years 16 people have been killed by elephants.

Mr. Sukumar highlighted the following possible causes for the elephant problem:

- a. Habitat fragmentation has upset migration patterns.
- b. Large scale bamboo extraction has degraded the habitat. The lack of bamboo and other grasses could be a major factor in forcing them to seek food from cultivated lands.
- c. Water is scarce and to be found mainly on small dams and ponds near human habitation.

Mr. Syarief Bastaman from the Directorate of Nature Conservation, Indonesia, was the next participant to deliver his status summary on the elephant within that country.

INDONESIA - Mr. Syarief Bastaman

Although a few elephants may occur in Kalimantan (Indonesian Borneo), Mr. Syarief limited himself to Sumatra, where the elephant was once widespread throughout the island. But due to the spread of agriculture, elephant habitat is rapidly shrinking, as is the population of elephants; it is

estimated that only about 300 are left in all Sumatra, with the best protected populations being found in Gunong Leuser, Way Kambas, Berbak and Sumatra Selatan Reserves.

Mr. Syarief outlined the following needs in relation to elephant conservation and management in Sumatra:

1. to assess the effectiveness of existing reserves for conserving elephants;
2. to evolve a set of practical management guidelines for elephants, including alternative methods for the capture, translocation, and handling of problem elephants;
3. to elaborate management plans for one or more reserves established specifically for the elephant;
4. to train Indonesian officers in elephant management;
5. to educate the Indonesian public about the plight of their elephants, including the rural people who are in frequent and direct contact with elephants.

It was heartening to note that a \$75,100, two year project aimed at meeting most of these needs had been approved by IUCN/WWF. Some \$50,000 has come from Elephant Funds. Project implementation was waiting only on selection of a Principal Investigator.

Our next speaker was Mr. Saharudin Anan, Deputy Director (Elephant Unit), of the Department of Wildlife and National Parks, West Malaysia.

WEST MALAYSIA - Mr. Saharudin Anan

Mr. Saharudin reviewed for us status, threats, plans and progress for conserving the elephant in West Malaysia (i.e. the Malay peninsula). By way of introduction he noted that elephant conservation is difficult in West Malaysia, because of the extremely rapid rate of land development. This had resulted in elephant damage to crops becoming a multimillion dollar problem.

Although certain males could be hunted on license only, licenses have not been issued since 1972. The number of elephants in the peninsula are presently estimated at between 700 and 900.

Rapid land development is the major threat to elephants. Much of the cleared forest is replaced by oil palm, rubber, and to a lesser extent cocoa, coffee and sugarcane. Elephant damage is particularly serious in oil palm schemes, causing vast losses. Poisoning is a minor threat (sodium arsenite). Ivory poaching is not a threat due to strict control on powerful gun licenses.

The Department catches pocketed and troublesome elephants by drug

immobilization, which they found works better in Malaysia than the traditional methods of the Indian subcontinent. Seventeen elephants have been successfully captured by a special team since the program started in 1974. A second team set up early in 1980 has already caught 2 animals. These animals are being held prior to translocation as soon as suitable release sites have been identified.

The second form of management of problem elephants now used in Malaysia is the electric fence, which is the subject of Mr. Blair's report to this Meeting.

The Department has also set up 16 Elephant Control Teams of four rangers each. These are positioned around the country in areas prone to elephant attack. The rangers are equipped with guns, vehicles and camping equipment. Their function is to drive elephants from crops.

In the long-term Mr. Saharudin said the Department was trying to acquire more land as national parks and reserves, the target being 10% of the total area of West Malaysia. This would contribute much to elephant conservation. The elephant management unit was also to be enlarged on a priority basis, and capture operations are to be stepped up.

Mr. Phairot Suvannakorn, Director of the Royal Thai Forest Department's Wildlife Conservation Division, was then called upon to give his resume of the current elephant situation in Thailand.

THAILAND - Mr. Phairot Suvannakorn

Mr. Phairot outlined in some detail the long and noble history of the elephant in Thailand. They have been protected since the early days of the nation and today are safeguarded by several different Acts. Hunting is banned and export only allowed under quite exceptional circumstances. For the time being Thailand remains an important country for Asian Elephants, both wild and domestic. Formerly many of the latter came from neighboring countries, but disturbances in recent years have virtually cut off the trade. Even today, elephants are vital in developing valuable teak and other forests in rough hilly areas. Thus, as the population of domestic elephants suffers from natural mortality, new recruits will have to come mainly from within Thailand. The wild population from which these recruits must come is very difficult to determine due to lack of field studies.

Mr. Phairot quoted the best estimate to date for wild elephant numbers in Thailand, as between 2,600 and 4,450 animals.

A large number of National Parks and Wildlife Sanctuaries have been set up to ensure the survival of wildlife. Most of these possess elephants, but few detailed surveys have been made. Two key areas have been suggested as worthy of a special effort to conserve elephants. One is in the Petchabun Range of northcentral Thailand, the other in the Tenasserim Range of western Thailand on the border with Burma. Each area contains four already existing National Parks and Wildlife Sanctuaries, which could perhaps be consolidated

in such a way as to improve their quality as elephant sanctuaries.

Mr. Phairot said however, that the authorities must give priority, at this time, to securing and protecting existing reserves. Progress in this respect was slow because of both limited budget and trained manpower. Moreover in many areas insurgent activities further complicate matters. In concluding his address, Mr. Phairot expressed his opinion that such problems in bringing protected areas under the control of the authorities should be overcome first - other aspects of elephant management should come second. In other words first the habitats, then the animals. This was the only realistic approach for Thailand, he said.

The Chairman then called upon Mr. James Blair, and economist with Malaysia's Federal Land Development Agency (FELDA), to read his paper on the management of the agriculture - elephant interface in peninsular Malaysia.

ELEPHANT BARRIERS - Mr. J.A.S. Blair

Mr. Blair began by informing us that FELDA's extensive operations now cover 526,100 ha and involve the opening up of over 40,500 ha of previously unutilized land per annum. To put the problem further into perspective, Mr. Blair told us that cumulatively FELDA has lost a total of over four million trees (primarily oil palm, but also rubber), or over 20,230 ha of tree crop, estimated as a loss of US \$100 million if the crop loss incurred is included in the calculation. Faced with a problem of this magnitude, FELDA has actively sought solutions within the limitations imposed upon it by the desire (and the legislation) to conserve as many of the peninsula's dwindling elephants (see Mr. Saharudin's paper) as is possible at reasonable cost. Mr. Blair went on to explain why the long-term policy of the wildlife authorities to establish protected areas covering entire elephant ranges is unattainable in the short-term, because of the need for protracted dialogue with all concerned parties. In the meantime, development continues apace, so it is essential that other solutions to the problems are sought. Mr. Blair continued by describing and evaluating the solutions tried so far, and noted that in all aspects of the problem, FELDA and wildlife personnel have been co-operating closely.

This is nowhere more clearly seen than in the matter of relocating herds entrapped by human developments (see Mr. Saharudin's report). To enhance the pace of translocation (slowness being the principal weakness) FELDA has recently agreed to finance the purchase of several tame elephants for the capture unit.

However, the focus of attempts to limit damage in agricultural areas has been physical barriers, commencing in 1977 with the construction of around 320 km of ditches. Normally these measured six feet deep, seven feet across at the top and five feet wide at the bottom. Construction costs were of the order of US \$1,400 per kilometer. Although trenches did reduce the extent of damage, this was usually not significant enough to warrant the cost. Altogether there has been considerable disillusionment about ditching as a barrier to elephants, certainly in a humid climate which imposes serious

maintenance problems. Even attempts to augment trenches with various forms of fence were unsuccessful. Consequently FELDA has stopped experimenting with ditches.

On the other hand FELDA feels confident that the degree of success achieved so far with electric fencing merits the construction of some 320 km of new fencing around its schemes. Trials began in 1977 with a 10 km fence. The initial response of the elephants to this fence was encouraging. In 1979, FELDA constructed another 6 km of "improved" fence which was clearly more effective than the original.

In July 1980 a fencing consultant was called in to further improve design. The one to be used now consists essentially of two strands of high-tensile (250 lb. tension) high-carbon galvanized steel wire (gauge 13), sustained at heights of three feet and six feet above the ground by tropical hardwood posts (which require no insulators) of dimension 2" x 2" for line posts and 3" x 3" for corner posts. The fence is charged by 5,000 volt energizers and would cost around US \$2,250 per km to erect.

Mr. Blair said he, Mr. Saharudin, and other colleagues had completed a fencing manual detailing all the specifications, tools and techniques to be used, which would be published under the title FELEPHENCE in October 1980. In closing, Mr. Blair pointed out that enough design options with the electric fence remain to combat recalcitrant, adventurous or persistent animals, and that it presently seems the obvious protection for agricultural areas threatened by elephants in humid zones.

In the discussion that followed, Dr. Lahiri Choudhury was most emphatic that earthen trenches unsupported by other measures would be unsuccessful, and evidence from other parts of the region supported the Malaysian experience that this was not a hopeful line for further exploration. Trenching, if used however, should, according to Dr. Lahiri Choudhury be eight feet across at the top. Considerable interest in electric fencing was expressed by delegates, few of whom had had the opportunity to experiment with it themselves.

Dr. Choudhury also gave a brief and colorful review of some of the more exotic elephant deterrent measures he is acquainted with. These include tear gas - which works, but effectiveness is entirely dependent on the prevailing winds; broadcasting recorded tiger calls - apparently most effective; and rockets fired directly at the elephant, where the combined effect of a flash of light and loud bang at close proximity can produce dramatic results.

Dr. Choudhury then outlined a crop protection method which he believes would prove most effective, at least in northeast India. It has been noted that traditional "roving" mela-shikar capture operations have a marked effect on the quarry, the wild elephants, who rapidly become extremely shy and hard to locate.

Dr. Choudhury believes that if a mela-shikar team were to be permanently based within an area suffering crop depredation, and operate only within a

limited range from that base - a system he refers to as "anchored" mela-shikar-then the team would only have to capture one or two wild elephants a year to keep the rest well at bay.

After this discussion Group Member Mr. M.A. Partha Sarathy, who is also Hon. Sec. WWF (India - Southern Region) and a Member of IUCN's Education Commission, was called upon to review the Ivory Trade in India.

IVORY TRADE - Mr. M.A. Partha Sarathy

In India ivory imports increased from 380 kg in 1973/74 to nearly 9,000 kg in 1977 which is about the level now. In 1977, 50% of ivory in India was imported directly, mostly from Kenya. This is now said to have gone up to 80%. The balance, according to state forest departments, is procured from elephants "dead due to natural causes". There is evidence, however, that much comes from other sources, including poaching.

Referring to control of the ivory trade, Mr. Partha Sarathy said the laws are considerably relaxed with regard to "worked ivory" as opposed to unworked. This, he claimed, provided a loophole, as a tusk or piece had only to bear "a few chisel or file marks" to qualify as "worked". As such it is considered already a handicraft and is approved as ivory that was obtained properly. Subsequently certain state governments have made both worked and unworked ivory a single unit for evaluation, and this has helped to control illicit ivory trade to some extent.

Mr. Partha Sarathy went on to describe attempts to reduce demand for ivory by introducing acceptable synthetic substitutes, which are now being gradually produced. Later we were shown a sample of such synthetic ivory.

According to a recent survey there are over 7,200 ivory craftsmen in India (3,700 in the south; 3,500 in the north). They are beginning to accept that it is impossible to get the quantities of ivory they used to get before, and efforts by State Handicrafts Boards to induce them to use alternatives such as bone, horn, wood and synthetic ivory are at last taking effect. Citing previous experiences with goldsmiths in India, Mr. Partha Sarathy felt that given larger quotas of substitutes, we need not expect craftsmen pressure on real ivory for too long, and this includes the demand by brides in some areas for a continuous ivory bangle, as these could now be produced synthetically also.

Mr. Partha Sarathy stressed, that despite these encouraging trends, the problem of the ivory trade in its relation to the future of the elephant in India is still far from solved. There is noticeable decline in numbers of tuskers, implying continued poaching. Although there is increased awareness among forest officials in the matter of poaching, there is no evidence of an actual decline, and it was noted that forest departments do not have the needed resources for effective control of ivory poaching.

Mr. Partha Sarathy summarized action needed now in relation to the ivory trade in India as follows:

1. Special anti-poaching squads to provide continuous, strong surveillance of elephant populations.
2. Greater supply and promotion of ivory substitutes among craftsmen.
3. A strong international effort to stop the import of African ivory into India.

The Chairman then called upon the delegation from the Department of Wildlife Conservation, Sri Lanka, to present their summary on the status of the elephant within their country. The delegation was led by Mr. Lyn de Alwis, Sri Lanka's representative on the Group and Director of Wildlife Conservation. The other members were Messrs. C.V. Jayawardena, A.B. Fernando, M.M.D. Perera (all Assistant Directors of the Department) and Mr. N. Ishwaran, Asst. Lecturer in Zoology, University of Peradeniya.

SRI LANKA - Mr. Lyn de Alwis

In introducing the Department's conservation policies, the Director first dealt briefly with its history, showing how wild life conservation evolved from a mere aspect of forestry into a whole new scientific subject in an autonomous Department. Where earlier the Department was manned by a Warden and an Assistant plus about 12 Rangers, 20 Guards and perhaps 50 Watchers, it was today administered by a Director with three Deputies (one of whom is a fulltime Veterinary Surgeon), 5 Asst. Directors, 5 Park Wardens, 25 Rangers, 80 Range Assistants and 288 Guards, to lay down policy, plan and carry out management programs. Monetary provision has risen from an annual Rs. 200,000 to about six million rupees today. He further stated that the Government was today fully conscious of the importance of nature conservation and has given pride of place to the total protection of wildlife areas. Forty-two sanctuaries constituting 1/10th of the land area, 2 marine sanctuaries and 3 elephant corridors have been created. In addition, 1 mile buffer zones have been established around sanctuaries.

The Department has been considerably encouraged by the ready assistance and understanding given by the Judiciary, the Customs Department, the Armed forces, Police, enlightened public opinion and media, and, of course, international organizations such as IUCN/WWF, the Frankfurt Zoological Society and the Fauna Preservation Society of England.

The Director emphasized that wildlife being a natural resource was receiving attention at an international level. He therefore thought this regional meeting was both relevant and timely for it provided an opportunity for examining problems in neighboring countries in the light of each others experience and achievements.

He said he believed in the exchange of views not only of top-level administrators, but also those of field officers who actually carry out the practical tasks involved in effective conservation. That was why he had decided to let the meeting hear at first hand from those officers, rather

than read a long and boring paper. Mr. de Alwis then introduced Messrs. Jayawardena, Fernando, Perera and Ishwaran.

The Chairman, Mr. Daniel invited these officers in turn.

SRI LANKA - Mr. A.B. Fernando

Mr. Fernando told the meeting that there are approximately 3,000 wild elephants in Sri Lanka today. It has been estimated that only 7% of the males in Sri Lanka are tuskers. Over the past 150 years man has forced the elephant from the wet and fertile regions of the island to the much drier regions in the northwest, northeast, and southeast. Now there is serious danger to their survival even in these arid regions owing to colonization and land development schemes.

Mr. A.B. Fernando spoke in some depth about elephant biology, distribution and migration. He explained with the aid of a map how virtually all the major elephant herds move in seasonal patterns dictated by the availability of food and water. He had made a complete study of these migrations, for a knowledge of these routes was a prerequisite in tackling elephant problems. Man-elephant conflicts were traceable to haphazard alienation schemes and to squatters both of which took no cognizance of these migration routes. That is why those settlers suffered only seasonal damage. Fortunately, the Department is now being consulted before new schemes are effected. The Mahaweli Development Scheme, the Lunugamvehera Scheme, and the Moneragala Land Use Project are examples.

Mr. Fernando gave a detailed review of progress and plans for the survival of the elephant in Sri Lanka. The activities carried out or planned are as follows - Corridors: seven such existing or proposed corridors linking existing and proposed reserves were described; upgrading the status of existing reserves. Creation of new National Parks: three are on the cards and have been proposed specifically to enhance the survival prospects of elephants (see Mr. Ishwaran's report). Scientific support: this is being provided in all the Department's endeavors by the Universities of Colombo and Peradeniya. Improving legal measures: included here are enhanced punishments for poaching etc; registration of tusks, tushes, and captive elephants; and a ban on the import and export of tusks, tushes, and worked ivory. Establishment of elephant control units: three such units are deployed in the north, south and southeast to protect crops and combat poaching and illicit capture.

Mr. Fernando also described the recent reclamation of the 310 km² Uda Walawe National Park which involved the expulsion of over 6,000 squatters. Already over 150 elephants have found refuge in the Park, greatly relieving cultivators in the surrounding areas.

Mr. Fernando then elaborated on the "pocketed herd" phenomenon which resulted primarily from unplanned schemes which cut off elephants from either their dry weather or wet weather feeding grounds. If these schemes had been well planned and the Department called in before development commenced, the

slow death of pocketed herds could have been avoided. On the other hand he demonstrated how with the Mahaweli Scheme the Department had been able to "drive" elephants to safety before forests were felled. In fact there had been such close co-operation between the developer and the Department that the forest clearing pattern was designed to ensure there would be no back-tracking.

Mr. Fernando then described in detail the hazardous operation he spearheaded in which 160 elephants in system H of the Mahaweli Scheme were successfully "driven" to the Wilpattu National Park in 1978/79 without any casualties either human or animal, despite the fact this involved bringing the elephants through habitations, cultivations, worksites, across several roads and channels and keeping them "boxed-in" at preselected sites at night. The area involved was approximately 200 km² but only 25 Guards were engaged in the actual driving operation.

SRI LANKA - Mr. M.M.D. Perera

Mr. Perera gave delegates a vivid and educative description of the Sept./Oct. 1979 operation in which the Department Wildlife Conservation succeeded in moving most of the 15 or 16 elephants pocketed on the Deduru Oya to the safety of the Wilpattu National Park. Delegates listened intently to the account of this first-ever successful effort at translocating pocketed elephants. In 35 days 10 elephants were moved to Wilpattu, one youngster was taken to the Zoo, two elephants succumbed to natural causes, and two more were destroyed to put them out of their misery. One of the latter was blind in both eyes and had over 50 bullet wounds, some festering. None of the animals were free of wounds.

Each elephant was backed into a truck by two tame elephants as soon as possible after the antidote was administered and it regained consciousness. Inside the truck, it was administered a mild tranquilizer and conveyed the distance of over 110 km to the release area in the National Park. By this method even large adults could be captured and translocated. The operation was personally supervised at the level of Assistant Director (Mr. Perera himself).

The talk was supported by color slides which captured some of the drama of the operation. A large number of questions followed, and delegates derived a great deal of benefit from the report. The film of the operation by Dieter Plage of Survival Anglia entitled "The Last Roundup" was also shown to participants at another time.

SRI LANKA - Mr. C.V. Jayawardena

Mr. Jayawardena gave delegates an idea of the situation in the southern region, with particular reference to the Kirindi Oya (or Lunugamvehera) scheme. Within this region there are 2 National Parks and 2 Sanctuaries. However, Mr. Jayawardena demonstrated on a map how the intervening areas are also used by elephants and act as corridors.

The Lunugamvehera reservoir spread of 3,560 ha of water will be right on the migratory trail of the elephants moving between the Yala group of reserves and the Uda Walawe National Park. All in all a total of almost 16,500 ha, much of it wildlife habitat, would be developed. This loss of habitat and interference could bring about isolation of the two parks and pocketing of elephants - trends which could already be observed. Mr. Jayawardena said the Department had been given time to make a plan to minimize the likelihood of this. He said the solution was to convert the catchment of the reservoir into a wildlife reserve. A National Park was therefore being proposed.

He also showed how elephants southwest of the Uda Walawe National Park seasonally migrated to the coast via the Bundala Sanctuary. He said that here too there were certain moves to develop land between Uda Walawe and Bundala thus depriving these elephants access to their traditional dry weather feeding areas on the coast. The Department was now advising the authorities on how best to avoid this situation.

SRI LANKA - Mr. N. Ishwaran

Mr. Ishwaran spoke briefly on the research project he was engaged in, which was being funded by WWF (Project 1783) and centered on the impact of a large tract of elephant habitat being removed under system C of the giant Mahaweli Scheme. To protect the elephants in this area the Department of Wildlife Conservation had proposed the establishment of the new Maduru Oya National Park to be linked to three other existing reserves by a network of corridors.

Data were to be collected on elephant movements in these areas, together with numbers, population structure, feeding ecology and economic significance. These data would be analyzed with a view to recommending optimal boundaries for the proposed Park and corridors. They could also be used to estimate the optimal numbers of elephants which could be managed within the complex, thus enabling decisions to be made whether a reduction in population was necessary either through translocation or capturing for domestication.

The project is a joint one between University of Peradeniya, Department of Wildlife Conservation, and WWF/IUCN. Assistants from the Department would learn field research methods from Mr. Ishwaran, ensuring continuation of data collection in the area (and elsewhere), even after the present project is terminated.

At this point Mr. Lyn de Alwis took the floor once again to sum up the progress made and state Sri Lanka's future policies and needs in the field of elephant conservation.

SRI LANKA - Mr. Lyn de Alwis

In his summary Mr. de Alwis noted that there is a good climate for conservation at the moment, and recently some MPs had demanded more

sanctuaries. Plans were afoot to compensate the cultivator for elephant damage, and so hopefully reduce his incentive to kill elephants. Reafforestation schemes were being promoted, to make up for destruction incurred by development. To cope with the anticipated displacement of elephants, and with the extent to which one can go on introducing elephants into protected areas still uncertain, it had been decided to set up a captive breeding center. Although the land was available, funds were needed for infrastructural development. Since a baby elephant could sell abroad for \$4,000, this could under certain circumstances be a way of obtaining funds for conservation activities.

Funds are a major constraint as we have so many areas of activity. There are currently 68 elephant problem areas, representing actual or incipient pocketed herds. When we are in the north we get a telegram from the south that there is a crisis; when we are in the east we get one from the west that there is a crisis. We have insufficient equipment to go into action on the scale needed. Funds are particularly needed for radio communications equipment, heavy machinery, such as bulldozers and 4-wheel drive trucks which we need to get into places for cutting roads and boundaries and for moving captured elephants out of an area.

We also need to acquire scientific know-how from the universities. Are we doing the right thing? We think we know how to translocate elephants, but what happens next? We would like to study behavior after translocation, through radiotelemetry. We need funds for some more scientific back-up studies of this sort. We have a fairly big staff, but we need the training to go into this kind of thing. Mr. de Alwis made a plea for the establishment of a Regional Training Center for wildlife staff taking into account the commonality of the Asian Elephant conservation problem. This could possibly be built with U.S. aid. Finally, the Director said he was proud Sri Lanka was in a position to offer advice to other Asian countries and in closing invited delegates to share in these experiences.

At this point Mr. Daniel read out a letter to him from Mr. G. Laurent, FAO Representative in Sri Lanka. Mr. Laurent had hand delivered the letter earlier.

MESSAGE FROM FAO - Mr. G. Laurent

Dear Mr. Chairman, I am pleased to transmit to you the following message received from Mr. J. Prats-Llaurado, Director of the Forest Resources Division, Forestry Department, FAO Headquarters, on the occasion of the Second Meeting of the IUCN/SSC Asian Elephant Group:

"FAO is actively interested in the work of the Group. It is itself becoming involved in this field at country level. We are especially concerned about the maintenance of the viability of both the wild and domestic elephant herds, taking into account the increasing demands on the latter as draught animals following the escalation of energy costs.

Please convey to the specialist group our best wishes for the success of the meeting.

We would be grateful to receive a set of the relevant documents and the final report of the Group in due course."

Please accept, Mr. Chairman, the assurances of my high consideration.

The next topic for discussion on the Agenda concerned Compensation Schemes. Mr. Daniel asked Dr. R.C.D. Olivier, Group Deputy-Chairman, to lead the discussion.

COMPENSATION SCHEMES

Dr. Olivier began by explaining that while approving the location in Sri Lanka of the Asian Elephant Coordinating Center (AECC), the Government had in this connection made a reference to the payment of compensation and made a specific request for IUCN/WWF assistance in realizing the ways and means for tackling this problem.

It seemed appropriate therefore, especially as the AECC is an arm of the Specialist Group, to ask participants to review any such scheme tried, underway or planned in their country or state. Dr. Olivier said he felt sure it was generally agreed that effective compensation for loss of crop or human life must be paid if we are to enlist the support of rural communities for elephant conservation as had been emphasized at the conclusion of Mr. Nair's south India report for example.

On the question of loss of human life, compensation is apparently an exclusively Indian phenomenon, being paid in Tamil Nadu, Bihar, West Bengal, and Meghalaya, although it is also under active consideration in a number of other states (e.g. Assam and Nagaland). The rates vary. Rs. 1,000 is paid in Tamil Nadu. In Bihar the rate Rs. 2,000 but this was increased recently to Rs. 5,000. These sums are probably too low - in an earlier paper Dr. Gadgil and Mr. Nair had considered Rs. 10,000 a minimal level of compensation. In Malaysia the Government operates a scheme whereby compensation is paid if an officer in the Department of Wildlife is killed, but not to members of the public.

On the more widespread and pressing problem of damage to crops and property, the following was noted. There is no state scheme in Tamil Nadu, but settlers under one Janatha Scheme paid a monthly premium of Rs. 1.0 to qualify for up to Rs. 12,000 compensation annually. In Bihar the State Government is actively considering a proposal to pay compensation at an ad hoc flat rate of Rs. 50.00 per acre of crop area damaged. Payments are made on the recommendation of the D.F.O., who has the last word.

In West Bengal compensation is paid not on an ad hoc basis, but according to the value of the actual damage suffered as assessed by the local D.F.O.

and Revenue Officer. Karnataka also apparently experimented with a scheme, but no details were available.

A major drawback with these schemes in India at the moment appears to be the bureaucracy which is such that, as and when the compensation finally comes through, it is relatively useless to the person who suffered loss (i.e. "it would come only after he had starved to death").

In Nepal there are as yet no schemes for compensating crop damage by wildlife. Mr. Mishra expressed the opinion that instead of a cash payment to an affected villager, it might be better for the authorities to pay his children's school fees for example.

In Malaysia, settlers on state-run FELDA schemes pay a premium of M\$2.00 per acre per annum which is computer deducted automatically from their income. In this way replanting costs in damaged areas are covered.

On the question of possible abuse of schemes compensating crop damage, some participants felt such abuse had to be accepted as a "fact of life" and should not be allowed to act as a case against implementation of compensation schemes. Most participants however felt that abuse was unlikely, holding that a villager will never destroy his own crops.

Soon after this brief review the discussion wound up. Mr. de Alwis explained that earlier some form of compensation did exist, but had not proved very suitable. What the Government now wanted was a better scheme which would really persuade people who had a predilection for shooting not to do so. The Government recognized that it was more important to save elephants than to shoot them, and that to achieve this it was necessary to imprint the same point of view on people's minds. To do this one needed legislation that was not just arbitrary, but which took into account that compensation must be paid, and it also had to be ensured that those affected had prior knowledge of this. This was the basis to the specific request for IUCN/WWF advice and/or assistance, and one problem in evolving a better scheme, since the Government had rejected an ad hoc payment system, was how to actually assess the level and value of damage in the field.

In the light of Mr. de Alwis's remarks, it was agreed that further input on these matters was something that could be better pursued by the AECC in the future than by the AESG at this Meeting.

The Chairman then invited Mr. R. Scott, the Executive Officer of the Species Survival Commission, to introduce the discussion on funding priorities.

PRIORITY DISCUSSION

Mr. Scott reminded delegates that the major objective of the meeting was to determine the priority areas for support from IUCN/WWF's limited funds for the conservation of the Asian Elephant. Everything so far served to set the scene, but he now urged participants to accept that there simply were not

enough funds to implement all the deserving recommendations that had been put forward. Mr. Scott therefore urged each of us to now make the difficult switch from championing the cause of our own neighborhood, to trying to adopt a totally objective and detached attitude in appraising the relative merits of different projects competing for a "slice of the cake".

We were told that "the cake" in this case amounted to approx. US\$300,000 for what remained of 1980, and for 1981. Mr Scott mentioned that some of these funds were already allocated and in this context pointed out that the IUCN/WWF program for the Asian Elephant was unusual in that it had been decided that circumstances warranted the full-time services of a scientific representative from the Specialist Group, namely Dr. Olivier.

The task before the Meeting now was to reach agreement on what recommendations the Group should make to IUCN/WWF regarding priority allocation of the balance of funds remaining. Mr. Scott suggested we establish criteria on which such agreement could be reached in an objective fashion, and he gave a possible example or two.

Mr. Daniel then tabled for systematic review a document entitled "Interim list of top priority Asian Elephant projects - May to August 1980", which had been drawn up by Mr. Daniel and Dr. Olivier at the SSC Meeting held in Kenya in April/May 1980. As a result of the ensuing discussions the following list was agreed upon:

<u>PROJECT TITLE</u>	<u>FUNDS REQD. (US \$)</u>		<u>STATUS/REMARKS</u>
	<u>1980</u>	<u>1981</u>	
GENERAL			
Asian Elephant Coordinating Centre	40,000	40,000	Approved/underway
SSC Specialist Group Meeting	6,000	--	Approved/underway
BANGLADESH			
Elephant Management Cox's Bazaar	5,000	5,000	Under development
BURMA			
Elephant Management Program	--	30,000	Under screening (further development likely)

INDIA

Indian Elephant Office (continuation Project 1551)	3,000	15,500	Under development. Including Nilgiris antipoaching (1980, 1981) and Andamans survey (1981) Meeting.
Elephant Habitat Surveys			
(a) NE India	14,000	7,500	Under development
(b) Central	13,000	8,000	Under development
Jawahar Park and southern populations	14,500	5,000	Under development

INDONESIA

Asian Elephant in Sumatra	--	25,000	Approved (total budget \$75,000)
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NEPAL

Chitwan extension		1,750	Under development
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SRI LANKA

Establishment of Madura Oya complex of reserves	8,500	--	Approved/underway
Camping equipment for Elephant conservation unit	8,000	--	Under development
Conservation education Project	14,000	--	Under development

THAILAND

Asian Elephant in Thailand	--	30,000	Under development
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TOTAL FUNDS REQUIRED

126,000	167,750
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The only totally new component in the above list is support for Dr. Rehan's proposal to set up an elephant sanctuary in the Teknaf peninsula, Bangladesh. Other major points arising from the discussions are as follows:

BURMA

It was agreed that action in Burma, as and when possible, was of top priority. It was appropriate, therefore, to allocate a sizeable proportion of funds to that country. However, Dr. Olivier made two points.

The first was that there were two relevant project proposals to which IUCN/WWF Elephant Funds could make a contribution. One was a proposal for World Bank support entitled "The importance of elephants in Burmese forestry" (3 years: US \$1 million). The other was an IUCN/WWF proposal entitled "Conservation in Burma: preliminary surveys and increasing the flow of information" (1 year: US \$50,000). As the latter proposal touches on so very many points of importance other than just elephants, Dr. Olivier suggested that our input would be better directed at the former proposal. He pointed out that the "World Bank" proposal had a component under the heading Wild Elephant Management whose objectives made that component particularly suitable for our support. This was agreed.

Dr. Olivier's second point was that as there were presently no indications that either the "World Bank" proposal or the IUCN/WWF proposal (which itself could generate a specific elephant project as follow-up) were to be implemented in the near future, then we should not tie up funds for admittedly vital projects if they could not be implemented. He therefore suggested moving the two annual allocations for Burma of \$30,000 and \$20,000 "sideways" (i.e. \$30,000 for 1981; \$20,000 in 1982). This meant gambling on the fact that if a project was implemented in 1981, the 1982 input could not be made unless more funds were realized between now and then. The meeting nevertheless agreed to Dr. Olivier's recommendation.

INDONESIA

It was noted that the Indonesia project was now fully approved and funded. Its scope has been broadened however to cover other large mammals such as Tiger and Sumatran Rhino, rather than just elephants. The one time Principal Investigator, Dr. A. Laurie, was no longer available, and this was regretted. The project would be implemented as soon as a suitable new P.I. could be found.

THAILAND

Although not reflected in the list and allocation, the discussions, regarding an input to Thailand concerned a major conceptual shift away from the more research-orientated erstwhile proposals of Dr. J.C. Leyrat. Mr. Phairot and Mr. Suwat reiterated the points the former made in his country report, that initially efforts should be made to consolidate control over key elephant areas. In this respect it was stressed that it was vehicles and guns that were needed by the wildlife authorities so they could set up mobile anti-poaching units. The meeting endorsed this representation by the Thais and encouraged them to submit a new project proposal.

Mr. Scott also introduced a discussion on funds for the elephant in Sri Lanka, offered by WWF - Netherlands, that if raised would be additional to the funds whose allocation was debated above.

NETHERLANDS FUNDS

Reference was made to a WWF - Netherlands memo, a copy of which had only very recently been received by Dr. Olivier. This indicated that some US \$75,000 from an early - 1981 fundraising event would be set aside for the "Sri Lanka elephant project". Earlier WWF(N) has shown interest in supporting Sri Lanka's proposed aerial support program. It was assumed in the ensuing discussion that this was still the "project" referred to in the memo. The Group was asked to give an opinion to IUCN/SSC on the priority rating of such a large allocation vis-a-vis other identified regional needs..

The Group agreed that if it was a private donation from an individual to the Government of Sri Lanka, its advisability or otherwise rightly does not concern either the IUCN/SSC Specialist Group, nor the WWF. Assuming however that the donation would be through WWF(N) to WWF - International, the opinion of the Group that the rating was "DESIRABLE" for this program at this point in time was unanimous.

However, Mr. de Alwis pointed out that it was possible that, due to U.S. aid for example, Sri Lanka might soon be able to implement all its other outstanding needs presently considered more pressing than the aerial support program. Both Mr. de Alwis and Dr. Olivier registered the view that in that case the project would then acquire higher priority, even in a regional context, as it would be the last outstanding component in Sri Lanka's Elephant Action Plan. Mr de Alwis put it this way:

"The Government has requested for aid to map out the areas required for elephants and to minimize conflict. In a manner of speaking, today, I would say the airplane is not necessary - but it would be a great pity not to be able to put it into effect within the next 24 months for one speedy result. A lot of other equipment is needed, but eventually I would think an airplane would be necessary. On the other hand, through USAID the Americans are prepared to aid us with the other smaller equipment.

CLOSING ADDRESS - Dr. R.C. D. Olivier

Dr. Olivier referred to the great sense of progress he now had at the end of the meeting. For example, as far as he could recall, we were not sure at our first get-together in Bangalore in 1977, whether there were any elephants at all in Orissa, yet now we had learned that the State harbors a population of 2,000 one of the world's largest.

Dr. Olivier congratulated all on their hard work which had produced such results. He particularly commended those Indian Members who had for many months pursued Group objectives by financing activities in their areas out of their own pockets.

The Deputy-Chairman then referred to the collation of population statistics known to him in March 1978, when he estimated from 28,000 to 42,000; say 35,000 wild Asian Elephants remaining. He had just that afternoon revised this estimate according to the latest information received during the Meeting and had arrived at from 33,000 and 38,000; say 35,000 elephants. Although the average figure remains the same, the upper and lower estimate limits are getting closer, suggesting we can place more confidence in our appraisal. Dr. Olivier stressed however that the estimate of 3,500 - 5,000 used for Kampuchea, Laos and Vietnam was likely to be overly-optimistic. It was therefore obvious, with the country reports so recently heard still fresh in our minds, that there could be no letup in our efforts to save the elephant of Asia, and that our planned action must proceed in a concerted and expeditious fashion. He hoped the Group could meet again in the near future to review progress and make further plans.

In closing Dr. Olivier thanked those participants who had delivered reports or papers for their valuable contributions. On behalf of us all he extended our heartfelt appreciation to the Ministry of State and Department of Wildlife Conservation, Sri Lanka and particularly the Director and our Representative for Sri Lanka, Mr. Lyn de Alwis, for facilitating the Meeting and hosting us so efficiently and hospitably. Dr. Olivier also extended a special vote of thanks to the Sri Lanka Foundation Institute which had afforded us facilities at concessional rates without which it would be fair to say the Meeting might not have taken place, let alone achieved so much. Finally the financial support of WWF was gratefully acknowledged. Dr. Olivier then declared the Meeting closed.

APPENDIX

The following unpublished reports and papers were submitted to the Meeting. Copies may be obtained from the AECC.

BLAIR, J.A.S. Management of "The Agriculture - Elephant Interface" in Peninsular Malaysia (12 pp. + 2 maps.)

FERNANDO, A.B. Recent efforts to overcome the present problems connected with the conservation of the Sri Lanka Elephant (5 pp.).

HUNDLEY, H.G. A report on the status of the Asian Elephant in Burma, 1980. (19 pp.).

ISHWARAN, N. AND DE ALWIS, W.L.E. Conservation of the Sri Lankan Elephant - planning and management of the Wasgomuwa - Maduru Oya - Gal Oya complex of reserves (IUCN/WWF Project 1783). (5 pp. + map.)

JAYAWARDHANA, C.V. The Kirindi Oya basin scheme and some elephant problems in the southern region of Sri Lanka. (2 pp.)

KURT, F. Some aspects of Asian Elephant Conservation. (9 pp.)

Note: Dr. Kurt did not present this paper at the Meeting, although he did attend. The abstract of his subsequently submitted paper reads as follows:

"South Asian forests need immediate protection to secure their ecological functions for environ cultivated lands and their economic significance for local people. The wide popularity of the Asian Elephant must be used to preserve natural or nature-like forest ecosystems. Furthermore, it is recommended that the forthcoming Operation Asian Elephant attempt to preserve the ecological role of the elephant in the ecosystem and not dissipate its funds and energies in trying to preserve individual Asian Elephants.

The know-how of local people in survival in the forest as well as their experience in handling elephants and the old tradition of using working elephants for selective felling operations must be included in Operation Asian Elephant."

LAHIRI CHOUDHURY, D.K. Report on the present position of the elephant status survey program in Northeast India. (8 pp.)

A research program for habitat manipulation to suit elephant (and other wild animals) - needs of food in commercial forestry areas. (3 pp.).

MISHRA, H. Status of the Asian Elephant in Nepal. (3 pp.)

PARTHA SARATHY, M.A. A review of the Ivory Trade. (7 pp.)

PHAIROT, SUVANAKORN. Elephant status and Conservation in Thailand. (4 pp.)

REZA KHAN, M.A. On the distribution and population status of the Asian Elephant in Bangladesh. (14 pp. + maps.)

SAHARUDIN, ANAN. The elephant in West Malaysia: status, threats, plan and progress for conservation. (5 pp.)

SHAHI, S.P. Report of the Central India Task Force. (11 pp.)

SUKUMAR, R. Report of a survey of elephant distribution in the Eastern Ghats of Karnataka and Tamil Nadu. (16 pp.).

Editor's note: Readers may refer to References No.'s 1442, 1448, 1452, 1472, 1483, 1486-1489, 1494, 1514, 1524, 1542, for additional information regarding the IUCN/WWF Asian Elephant Specialist Group and its activities.

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