

# THE STATUS OF ELEPHANTS IN VIETNAM

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## INTRODUCTION

Vietnam is a thin, long and largely mountainous country situated between latitudes 8 N and 24 N, at the southeastern margin of the Indo-Chinese peninsula (Fig. 1) It has a total land area of 330,541 km<sup>2</sup> with a coast line of about 3,200 km. Vietnam is principally an agricultural country with a rapidly growing human population of 65 million. The average population density is 200 per km<sup>2</sup> which is one of the highest for any agricultural country in the world, thereby placing an "impossible strain on the environmental capacity of the country" (IUCN, 1985). Given the present rate of growth of 2.7% per annum, the population is expected to double in 25 years (Westing & Westing, 1981).

### Forest cover

In the distant past, the entire country was covered with dense tropical forest vegetation with the predominance of monsoon evergreen tropical dense forest (Hoe & Quy, 1990). As recently as 1960, about 65% of the area south of the 17th parallel was forested, of which undisturbed primary forest accounted for about 18%. Since the Indo-China war, the country has experienced a rapid loss in its forest cover. The total forest cover declined from 43.7% in 1943 to 23.6% in 1983 (Quy, 1983). Thus within 30 years, the country lost 50% of its forest cover. By 1987, the forest cover had declined to 21% (Quy, 1987). The true extent of undisturbed primary forest may be only about 10% (MacKinnon, 1990).

Three decades of conflict during which the Vietnamese fought first with the French and later the US caused not only the death of four million people, of which 60% were children under the age of 16 years, but also destroyed thousands of ha of forests: saturation bombing dumped more than 72 million litres of herbicides and 13 million tons of ammunition, an amount 450 times the size of Hiroshima atom bomb (Kemf, 1986). Huge bulldozers called "Rome Ploughs" were used to clear forests from strategic areas (MacKinnon, 1990). These operations were directly attributed to the loss of 2 million ha of forest. But unfortunately, even more forest land has been lost since the end of the war through slash and burn agriculture, forest fires and fuel wood collection. According to Kemf (1986, 1990) these are responsible for the annual loss of 200,000 ha of forest cover. Reforestation is going on at the rate of 100,000 ha annually but only about 3% of the plants survive.

### Protected Areas in Vietnam

The first national park, Cuc Phuong was established in 1962. Today, the country has seven national parks (Cuc Phuong, Ba Be, Ba Vi, Cat Ba, Bach Ma, Yok Don and Nam Bai Cat Tien) and a total of 87 reserves including 49 nature reserves (MacKinnon, 1990). Although these protected areas encompass samples of almost all the different forest formations in Vietnam, as far as the elephant is concerned, with the exception of Muong Nhe (in Lai Chau province) and Yok Don (in Dac Lac province) the protected areas where the elephant occurs

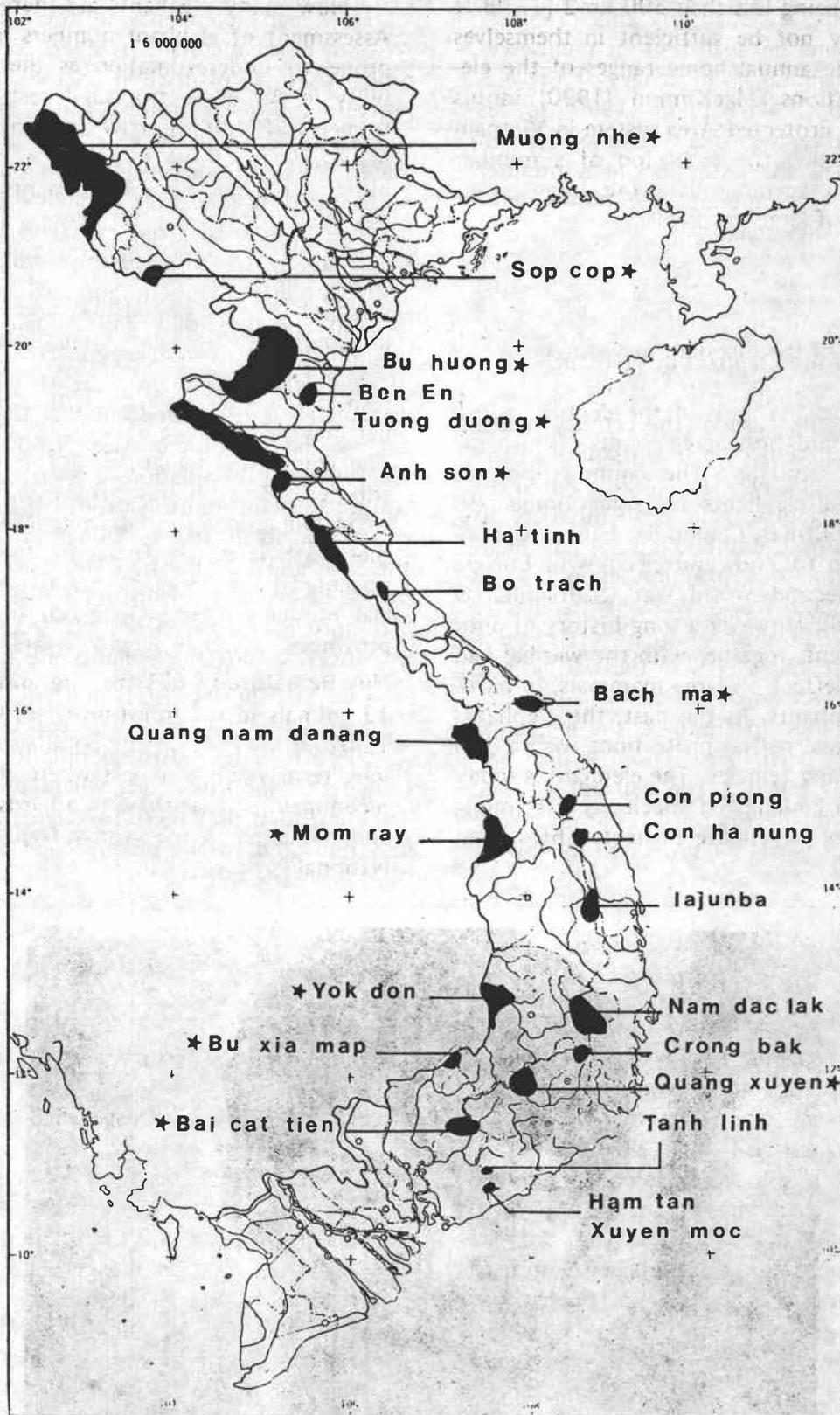


Fig. 1 Distribution of wild elephants in Vietnam.  
 (★ denotes protected areas)

are all small, being less than 500 km<sup>2</sup> (Table 1) and thus may not be sufficient in themselves to protect the annual home ranges of the elephant populations. MacKinnon (1990) in his review of the Protected Area system in Vietnam has recommended the extension of a number of reserves to accommodate the home range requirements of large mammals.

### Status of the Elephant in Vietnam

Vietnam at the turn of the century had a substantial population of elephants both in the wild and in captivity. The country used to supply trained elephants in large numbers to Myanmar (= Burma), Cambodia, Laos and Thailand and also to Zoos and circuses in Europe before the Second World War (Santiapillai & Jackson, 1990). However a long history of poor law enforcement, together with the war has had a devastating effect on large mammals, in particular the elephants. In the past, the elephants were given only partial protection, with a ban only on shooting females. The elephant is today considered an endangered species and is among the 38 species of wildlife protected by law in Vietnam.

How many elephants are there in the wild? Assessment of elephant numbers in the wild is prone to underestimation as the lack of visibility in the dense tropical forest makes it extremely difficult to arrive at even working estimates. Much of the information on the distribution and number of elephants in Vietnam has been obtained from the field surveys and from talking to knowledgeable villagers, especially hunters living in and around elephant habitats. Both Khoi (1988) and Tuoc (1989) independently arrived at estimates of the number of elephants in Vietnam to be 1,115 and 1,463 respectively but pointed out that the true number may lie anything between 1,500 and 2,000. The elephant populations in Vietnam are distributed discontinuously from Lai Chau province in the north to the Dong Nai province in the south (Fig. 1). There are two very small, pocketed herds of elephants across the provincial border between Dong Nai and Lam Dong provinces: about 9 elephants are known from Nui Be (altitude 871 m) and another herd of 12 animals in the forest near Nui Ong (altitude 1,307 m). These two populations have no long term viability if left where they are. It is recommended that these two herds be captured and relocated to the nearby Nam Bai Cat Tien National Park.



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Table 1. Distribution of Elephants in Vietnam

Name	Province	Status	Area (km <sup>2</sup> )
Muong Nhe	Lai Chau	NR (TFR/Laos)	1,820
Sop Cop	Son La	NR (TFR/Laos)	50
Ben En	Thanh Hoa	NR	155
Bu Huong	Nghe Tinh	NR (TFR/Laos)	50
Anh Son	Nghe Tinh	NR (TFR/Laos)	15
Tuong Duong	Nghe Tinh	NR (TFR/Laos)	70
Ha Tin area	Nghe Tinh	FR (TFR/Laos)	?
Bach Ma	Binh Tri Thien	NP	225
Bo Trach	Binh Tri Thien	FR	?
Quang Nam			
Danang	Quang Nam/Danang	FR (TFR/Laos)	?
Mom Ray	Gia Lai/Con Tum	NR (TFR/Cambodia)	350
Kon Cha Tang	Gia Lai/Con Tum	NR	160
Con Plong	Gia Lai/Con Tum	FR	?
Iajunba	Gia Lai/Con Tum	FR	?
Quang Xuyen	Dac Lac	NR	200
Yok Don	Dac Lac	NP (TFR/Cambodia)	580
Nam Dac Lak	Dac Lac	NR	?
Cong Bac	Dac Lac	FR	?
Bu Gia Map	Song Be/Dac Lac	NR (TFR/Cambodia)	160
Bai Cat Tien	Dong Nai	NP	350
Tanh Linh	Dong Nai/Thuan Hai	FR	15
Ham Tan			
Xuyen Moc	Dong Nai/Thuan Hai	FR	10

Note: NR = Nature Reserve; NP = National Park; FR = Forest Reserve; TFR = Potential Trans Frontier Reserve.

### Habitat Utilization

Elephants being generalised feeders utilize a number of vegetation types such as dipterocarp forests, moist evergreen forests, dry deciduous forest, bamboo forests and grasslands. But they seem to thrive on the secondary forest with an abundance of bamboo. Although the elephant is a generalised feeder, in Vietnam it appears from the limited information currently available that bamboos and grass may form the bulk of its food intake. In the dipterocarp and secondary forest of Tay Nguyen high plateau, Tuoc (1989) identified some 60 species of wild plants and 9 species of cultivated crops that were eaten by elephants (Table 2). Ele-

phants are both grazers and browsers. Browse becomes important during the dry season when much of the grass is poor in nutritive value (Sukumar, 1989). In Sri Lanka, grass may account for 86% of the diet (McKay, 1973). Although grass may be preferred in the wet season, the browse provides a higher plane of nutrition especially to the lactating females.

Elephants usually consume about 150 kg of wet weight per day and this explains why the animals are catholic in their food habits. To consume so much food, the elephants may spend up to 18 hours a day feeding (Vancuylenberg, 1977). But elephants are wasteful feeders. They knock down trees and pull down branches but feed on only those parts that they prefer

Table 2. Plants eaten by elephants in Vietnam.

A: *Trees and Shrubs:*

1. Bauhenia variegata
2. Shorea roxburghii
3. Shorea siemensis
4. Castanopsis indica
5. Areca laosensis
6. Terminalia chebula
7. Terminalia alata
8. Pterocarpus macrocarpus
9. Gardenia jasminoides
10. Helicteres ixora
11. Bridelia monoica
12. Adina cordifolia
13. Clausena lansium
14. Gmelina arborea
15. Caryota urens
16. Bauhenia racemosa
17. Bauhenia purpurea
18. Adenantha microsperma
19. Cananga latifolia
20. Ficus religiosa
21. Ficus retusa
22. Ficus racemosa
23. Dillenia pentagyna
24. Dillenia scabrella
25. Canarium subulatum
26. Canarium album

37. Pueraria thomsonii

38. Daemonorops pierreanus

39. Acacia pennata

D: *Herbs and Grasses:*

40. Miscanthus japonicus
41. Thysanolaena maxima
42. Musa ouranoscopos
43. Juncus effusus
44. Scleria poaciformis
45. Digitaria longiflora
46. Digitaria ischaemum
47. Panicum sermentosum
48. Panicum repens
49. Lophatherum gracile
50. Cynodon dactylon
51. Eleusine indica
52. Chloris barbata
53. Setaria barbata
54. Imperata cylindrica (young shoots)
55. Phrygium capitatum
56. Saccharum arundinaceum
57. Oryza granulata
58. Zingiber zerumbet
59. Phragmites karka
60. Amomum xanthioides

B: *Bamboos:*

27. Dendrocalamus spp.
28. Dinochloa compactiflora
29. Bambusa multiplex
30. Bambusa arundinacea
31. Bambusa procera
32. Arundinaria pusilla
33. Lingnania sp.
34. Neohouzeaua dullooa

C: *Climbers:*

35. Streptocaulon juvenas
36. Bauhenia vahlii

E: *Cultivated Crops:*

61. Cocos nucifera
62. Cucurbita pepo
63. Musa paradisiaca
64. Musa p. var. sapientum
65. Impomoea batatas
66. Oryza sativa
67. Zea mays
68. Manihot esculenta
69. Saccharum officinarum

leaving the rest to be utilized by other herbivores. Elephants may also feed on a wide spectrum of plants to nullify the effects of toxic substances. Among the food plants of elephants in Vietnam are various species such as *Acacia pennata* which may have a high tannin content. In the final analysis, as Sukumar (1989) points out, the optimal diet of the elephant in the wild will be a function of the proportion of browse and grass, depending on the season and the vegetation type.

### Conservation

The long-term survival of many small populations of elephants and/or those that inhabit forest patches that are surrounded by human settlements and agriculture are grim vis-a-vis a rapidly expanding human population and its legitimate aspirations for a better quality of life. The elephant is a migratory species and national frontiers do not pose any barrier to their move-

ment. Therefore one way of improving the survival prospects of elephant populations in Vietnam would be through the establishment of Trans-Frontier Reserves (TFR) with adjoining Laos and Cambodia. Table 1 identifies seven TFR with Laos and three with Cambodia.

Laos which until now had no protected areas, has proposed six reserves in the south of which Dong Amphane and Na Kai/Nam Theun border the frontier with Vietnam. The Mon Ray reserve which is 350 km<sup>2</sup> could be greatly increased if it were to be joined with a reserve across the border in Cambodia (Santiapillai & Jackson, 1990).

In Vietnam itself, much research needs to be done to accurately map the distribution of the elephants in the wild. Detailed surveys need to be carried but in Muong Nhe reserve in the extreme north-west of the country where there are still substantial forests and also elephants.

Table 2. Minimum estimate of the number of wild elephants in Vietnam

Province	Number	Source
1. Lai Chau	*126—#243	#Khoi (1988) *Tuoc (1989)
2. Son La	* 77—#107	#Khoi (1988) *Tuoc (1989)
3. Thành Hoa, Nghe Tinh & Binh Tri Trien	*400	*Tuoc (1989)
4. Quang Nam Danang	* 70	*Tuoc (1989)
5. Gia Lai-Con Tum	*250—#250	#Khoi (1988) *Tuoc (1989)
6. Dac Lac	#480—*505	#Khoi (1988) *Tuoc (1989)
7. Lam Dong & Song Be	* 35—# 35	#Khoi (1988) *Tuoc (1989)
8. Dong Nai/Lam Dong	@ 21	@(Pham Mong Giao, pers.comm.)
Total	1,459—1,631	

If the recommended extensions were to be carried out for Muong Nhe, Bu Huong, Tuong Dong, Anh Son, they will ensure the long-term survival of the elephant in the north, while in the south, the elephant's long term future will depend on not only the availability of large conservation areas (e.g. Mom Ray, Yok Don and Bu Xia Map with their extensions) but also on the ability of the authorities concerned to eradicate poaching.

Vietnam should also become a Party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The former Saigon regime signed the convention in 1973, but never ratified it. Adherence to CITES would help reduce ivory poaching by controlling international trade (Santiapillai & Jackson, 1990).

An immediate priority however is to translocate the two small pocketed herds at Nui Be and Nui Ong along the Dong Nai/Lam Dong provincial border to the security of the much larger protected area, Nam Bai Cat Tien National Park.

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