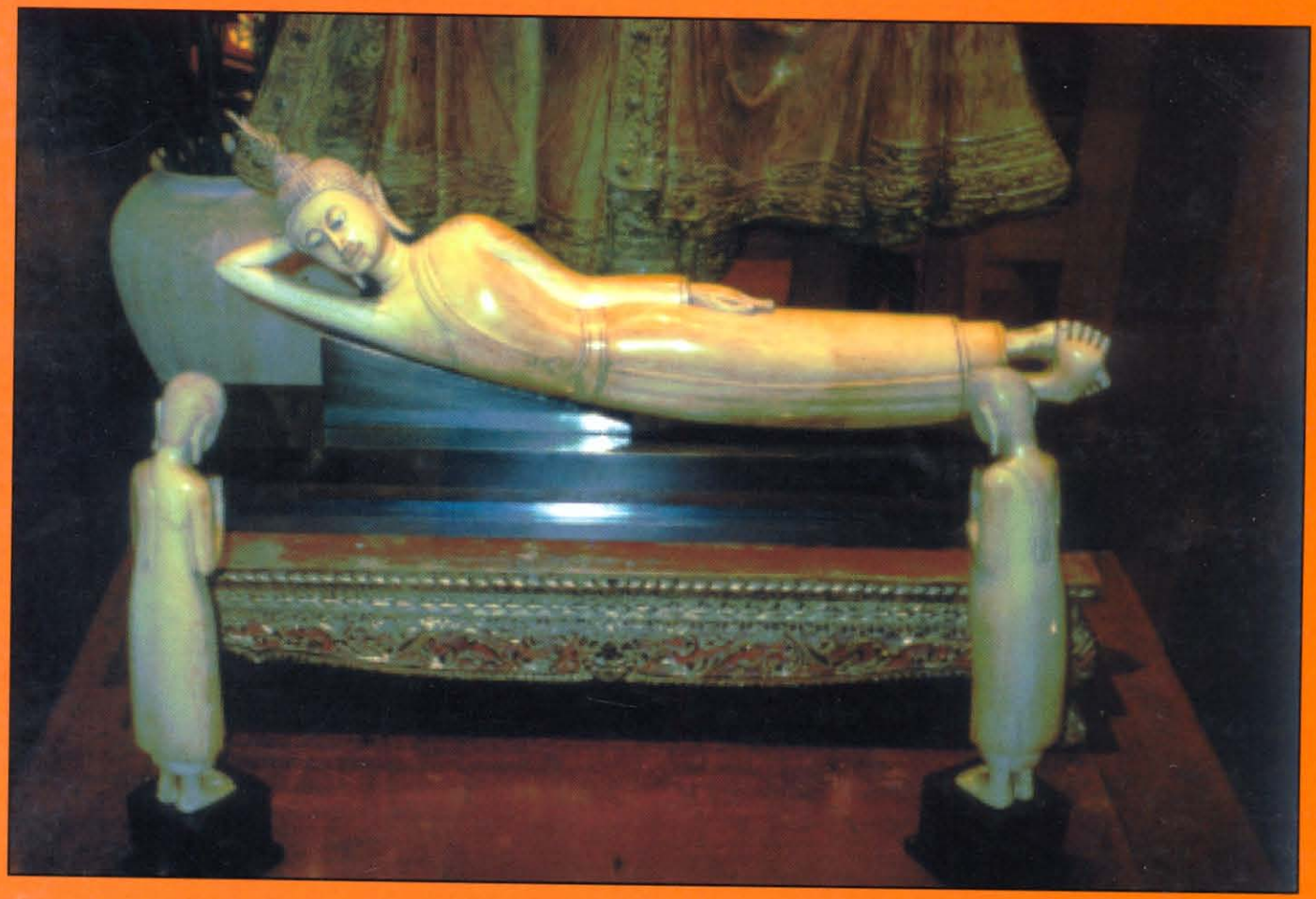
The South and South East Asian Ivory Markets

Esmond Martin and Daniel Stiles



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Front cover photograph:
These three antique ivory figurines of a reclining Buddha (about 50 cm long) with two praying monks were for sale in Bangkok for USD 34,000 in March 2001.

Photo credit:
Chryssee Martin

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Drawings by Andrew Kamiti

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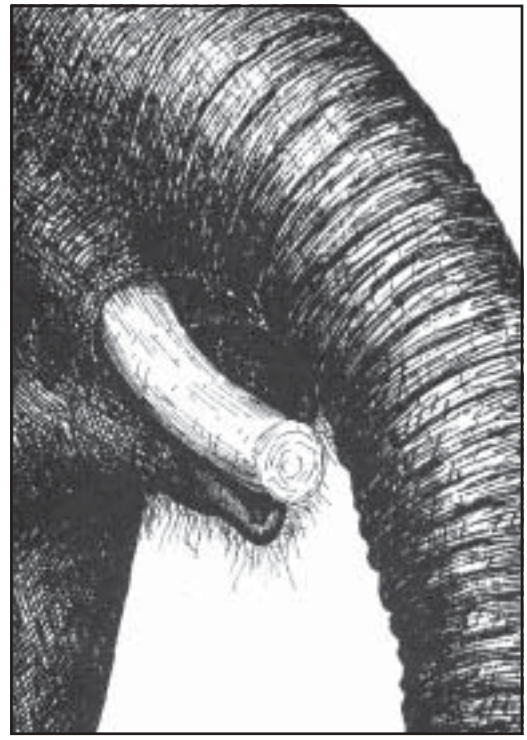


Elephant tusk after tipping

Executive Summary

The purpose of this study is to provide base line data on the ivory trade in the main markets of South and South East Asia in order that national governments, CITES officials and NGOs may assess the effectiveness of policies, laws and enforcement activities relating to the internal and international trade in ivory now and in the future. The information obtained by the investigators may also be used to infer what is happening in respect to the illegal killings of elephants in Asia.

The two investigators, Esmond Martin and Daniel Stiles, carried out field-work from November 2000 to late March 2001, sponsored by Save the Elephants, in the most important towns and cities in the eight main countries dealing in ivory in South and South East Asia. Historical and contemporary data were collected on the price of raw tusks, number of ivory workshops, number of ivory craftsmen, number of shops selling ivory items, number of ivory items seen in these shops, types of ivory objects for sale, and retail prices for ivory items. Information was also obtained on the number of wild and domesticated elephants, the international and domestic trade routes for tusks, and the nationalities of the buyers of ivory objects.

Below are the key findings of our report:

- Wild elephant population in Cambodia, Laos and Vietnam from 1988 to 2000 have declined by over 80% in total from an estimated *6,250* to 1,510, largely due to the trade in ivory and other elephant products. Myanmar, with the largest wild elephant population left of the countries visited (estimated to be 4,820), has suffered a net loss of over a thousand elephants since 1990.

- The main factors responsible for elephant poaching are the large economic return in selling tusks, the lack of paid jobs, poverty, and wide-spread corruption by the military and other government staff in poaching elephants and trading in their tusks.

- The largest illegal movement of tusks from wild Asian elephants are those from Myanmar to Thailand, and from Laos and Cambodia to Vietnam. Many countries with ivory carving industries in the regions surveyed receive illegal raw Asian ivory from neighbouring countries.

- Thailand and to lesser extent Vietnam are the only countries in South and South East Asia surveyed that import raw African ivory. This is smuggled into Thailand in significant quantities, with the wholesale price in Thailand the same as for Asian ivory, though in Vietnam African ivory is somewhat cheaper.

- Tusk tips from male domesticated elephants are an important source of ivory in Myanmar and Thailand as these countries have the largest numbers of domesticated elephants compared with the others surveyed, and pruning is relatively common.

- From the 1980s to 2001 the wholesale price of Asian tusks has increased in all the countries surveyed due to the continued demand for worked ivory items and the greater shortage of ivory within the countries. Prices have, however, decreased from the mid-1990s to 2001 in Nepal, Myanmar and Cambodia. Mid-1990s data are not available for the other countries.

- The average wholesale price for tusks in this study is over five times higher than in Africa (USD 250/kg versus USD 45/kg) due to the smaller quantities of ivory available and the greater demand.

- None of the governments has proper legal control of the ivory trade within their boundaries. Officials also take bribes in order to allow ivory to enter and leave their countries.

- The number of ivory craftsmen has decreased sharply in South and South East Asia since the late 1980s and there is now none left in Singapore.

- **The** quality of ivory workmanship has declined since the 1980s, with the possible exception of Myanmar. The growing middle classes in Asia are less discerning than earlier buyers and want cheaply-priced trinkets and jewellery as do the increasing numbers of package tourists from the west.

- Worked ivory sales are illegal in Sri Lanka, Nepal, Laos and Vietnam. It is legal to sell worked ivory originating prior to a certain date in Singapore and Cambodia, and from domesticated elephants in Thailand. The only country without restrictions on selling worked ivory is Myanmar.

- **Over 105,000 ivory items were** found for retail sale in the 521 shops in the 17 towns and cities in the eight countries surveyed.

- By far the largest amount of the foreign worked ivory in the countries visited is from China. Since 1990, exports from China and imports of these ivory items have been mostly illegal. In Singapore almost all the worked ivory for sale is from China, and in Nepal over a third. The other countries visited have Chinese ivory items for sale, but much smaller amounts compared to locally carved ivory.

- The main customers for ivory items in the major ivory markets of Thailand and Vietnam are tourists and businessmen from Europe (especially the French, Germans and Italians), Japan, Taiwan, Thailand, Singapore, China and USA in that order. The number of Asians buying ivory has increased proportionately in the last ten years.

- Thailand has by far the largest domestic market for ivory items with over 80% of the total surveyed. The towns and cities with the largest number of ivory objects for sale are Phayuha Kiri, Bangkok, and Chiang Mai. Next are Yangon, Singapore, Mandalay, Ho Chi Minh City, Kathmandu, Vientiane and Hanoi in that order. The towns and cities visited in Sri Lanka have the least number of ivory items seen.

- The highest quality worked pieces were seen in Singapore, which are mainly newer Chinese items, and in Bangkok, which are older Thai, Chinese, Japanese and other South East Asian pieces.

- Over 85% of all the ivory items offered for sale is jewellery as these objects are in great demand being cheap and easy to smuggle.

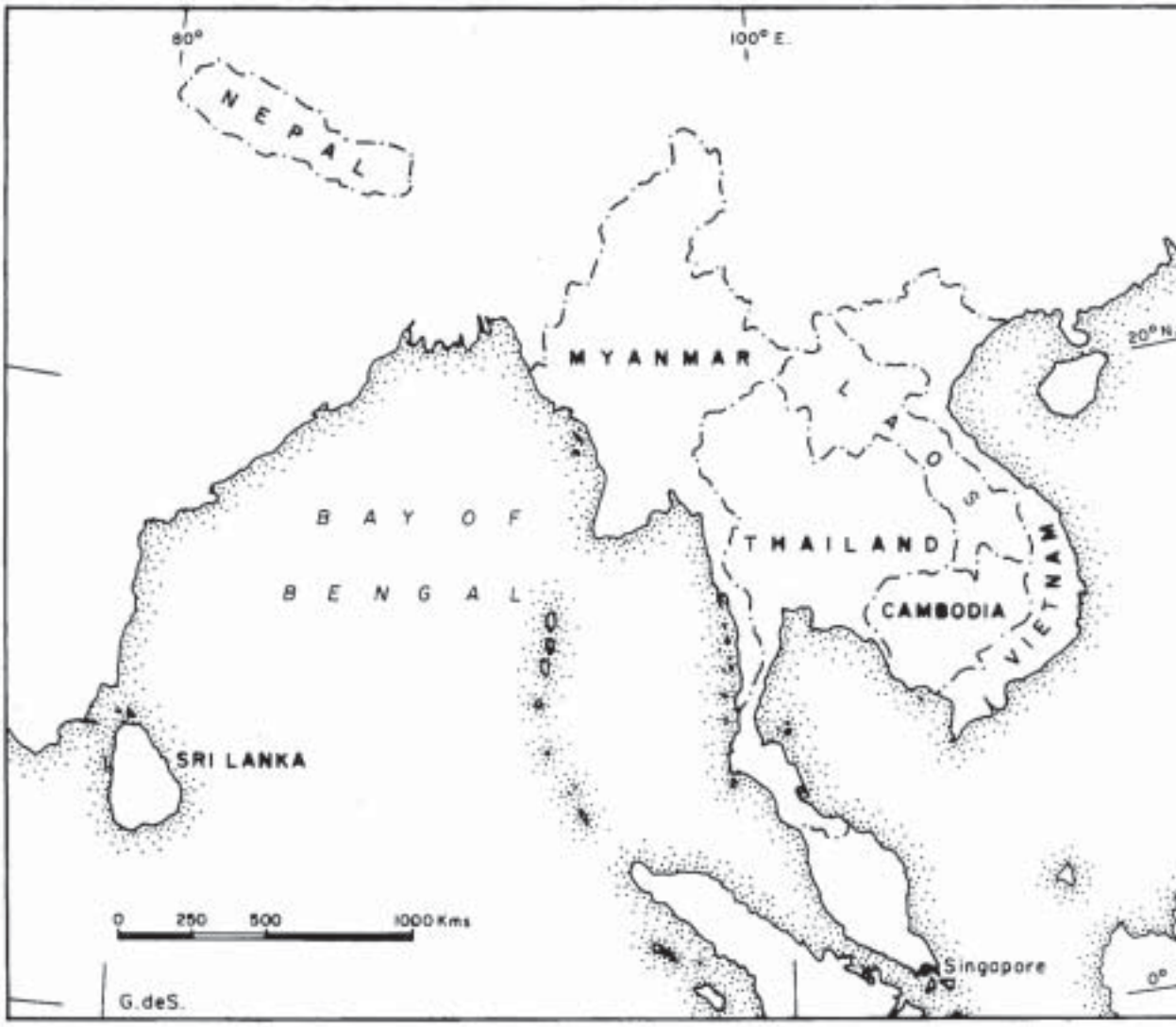
- For ivory items of similar quality and size, the highest retail prices by far are in Singapore because of the high costs of living. Although in the other places visited individual items vary greatly in price, the overall price of ivory items is much the same.

- In Sri Lanka, Cambodia and Laos, elephant ivory items are very few because most ivory-coloured trinkets are made out of substitutes such as bones and resins as they are cheaper and more readily available. Some vendors attempt to sell the substitute materials as ivory, but generally this is not the case.

- No trader, craftsman nor vendor mentioned the CITES sanctioned one-off sale of raw ivory from government held stocks in Zimbabwe, Botswana and Namibia to Japan in 1999, unlike a few ivory dealers in Africa who thought that this might lead to further opening up of the ivory trade.

- The craftsmen and vendors in South and South East Asia are pessimistic about the future of the ivory business, except in Myanmar. Very few craftsmen are training younger people to continue the profession, apart from in Mandalay, where it is common for senior craftsmen to train apprentices.

Introduction



Map of countries visited by the investigators in 2000 and 2001 in South and South East Asia

The purpose of this report is first to present data on the current status of the ivory trade in the major markets of South and South East Asia. These data are needed by relevant government authorities, international and national wildlife conservation organizations and by the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) in order to comprehend the scale of the ivory market in the respective countries today. The second objective is to set a base line of ivory trade indicators from which to assess what is happening to the trade so that future monitoring and evaluation can be carried out on the effectiveness of policies, laws and enforcement activities relating to the internal and international trade in ivory. The change in base line indicator values can also be used to infer what is happening in respect to elephant killing, as more ivory on the market implies more dead elephants, except for ivory released from stockpiles.

This study focuses on the internal (domestic) trade of raw and worked ivory in selected towns and cities, but where appropriate we also present information that we gathered relating to cross-border trade. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) placed all Asian elephants *(Elephas maximus)*

onto Appendix I in 1975, which means that all international trade in products from this species among Parties is banned. Even though all but two of the countries surveyed (Laos and Cambodia) have ratified CITES, significant international trade in ivory is still occurring, particularly in respect

to Thailand. Internal and international trade are related, as in some countries, such as Nepal, Thailand, Singapore and Vietnam, the domestic ivory markets could not be sustained from national elephant populations, indicating the illegal import of ivory. The overall scale of the trade reveals that ivory from sources outside Asia must be supplementing the supply. These sources therefore must be from African elephants. The data collected for this report compliment information gathered by TRAFFIC, the Elephant Trade Information System (ETIS) and national wildlife management and trade authorities relating to elephant poaching and illegal ivory trade.

Previous wildlife trade studies have been carried out in South and South East Asia that include ivory, but unfortunately most contain qualitative rather than systematic quantitative data, and thus it is difficult to ascertain trends. An important question to answer is whether the trade in ivory is increasing, decreasing or stable overtime. There are indications that elephant poaching is on the increase in parts of Africa and Asia, and the ivory obtained from these poached elephants must be going somewhere. It must be noted that while both male and female African elephants produce tusks, only Asian male elephants produce tusks. Female Asian elephants have only tushes which are considerably smaller. The principal use for ivory is the manufacture of household ornaments, jewellery, and Asian name seals (also called signature seals, *hankos* or chops). The level of elephant poaching should be correlated with the magnitude of retail ivory sales, which is relatively easily monitored in comparison to elephant killing and wholesale raw ivory sales, both of which are, in most cases, illegal and therefore hidden. The authors believe that the monitoring and evaluation of the ivory markets can be a cost-effective method for assessing threats to elephant populations, particularly if the sources of the raw ivory used can be identified.

From the time of the CITES trade ban imposed on products of African elephants *(Loxodonta africana),* which came into force in January 1990, several southern African elephant range states have been lobbying to re-open limited international trade of raw ivory. They argue that their elephant populations are well managed, are not endangered, and in many cases are growing to unsustainable numbers. They further state that income from ivory sales will go towards wildlife conservation, and that the lack of such funds will adversely affect conservation efforts. In 1997 the 10th CITES Conference of the Parties (CoP) voted to permit one-off auctions of government ivory stocks in Zimbabwe, Botswana and Namibia to Japan. These auctions were held in 1999, and Japanese traders bought slightly less than 50 tonnes of ivory (TRAFFIC, 2000c) at an average price of USD 103/kg (JWCS, 2000). Other African range states may request permission to sell ivory in future. The question will no doubt be under debate again at the $_{12}$th meeting of the CoP of CITES in late 2002 when additional information related to elephant killing and the ivory trade should be available. This report is intended *inter alia* to contribute to the CITES $_{12}$th meeting of the CoP of CITES' desire for additional information. There is already a demand for African ivory in Asia. Will a re-opening of legal ivory sales in Africa further stimulate demand in Asia? Will ivory demand in Asia increase even without legal sales? How much African ivory would satisfy demand in Asia, and could this be done sustainably from African elephant populations? This report provides the base line data to help answer these questions.

The study was sponsored by Save the Elephants, an independent non-governmental wildlife conservation organization. This report supplements an earlier study conducted by the authors of *The Ivory Markets of Africa* (Martin and Stiles, 2000). We hope that studies employing similar methodologies can be conducted periodically in the future to allow assessments to be made of whether the demand for ivory is Increasing or decreasing. Increased demand for ivory inevitably leads to increased killing of elephants. The conclusions of this study are exclusively those of the authors who accept responsibility for their interpretation of the data and errors in fact.

Methodology

The cities and towns discussed in this ivory report are the key ones in the main countries in South and South East Asia where there are traders, craftsmen and vendors dealing in ivory, especially for retail sale. The places selected for the survey in South Asia were Nepal (Kathmandu and Patan) and Sri Lanka (Kandy, Polonnaruwa, Colombo, Negombo, Galle, Ratnapura, Dambulla, Sigiriya, Beruwala and Hikkaduwa). In South East Asia they were Myanmar (Yangon and Mandalay), Thailand (Bangkok, Phayuha Kiri and Chiang Mai), Cambodia (Phnom Penh, Siem Reap and Sihanoukville), Laos (Vientiane and Luang Prabang), Vietnam (Ho Chi Minh City, Hanoi and Vung Tau) and Singapore (see maps). Countries further east of Indochina and Singapore have not been included in this study, but a survey of the ivory markets of Eastern Asia will be undertaken, it is hoped, before the next CITES meeting in late 2002.

The two investigators, Esmond Martin and Daniel Stiles, have been working in the regions since the late 1970s and have found there are either no ivory items for retail sale or only small amounts within certain countries in South Asia (Bangladesh, Bhutan, India and Pakistan) and South East Asia (Brunei, Indonesia, Malaysia and Philippines). Consequently, these countries were not examined for this study. For at least the last 30 years none of these countries except for India has had an important market for the sale of ivory items, although some act as entrepots for the smuggling of African ivory to Asian markets.

The exclusion of India requires an explanation. For hundreds of years up to about 1990, India was one of the largest makers and consumers of ivory items in the world (Martin and Vigne, 1989). With the CITES ivory ban of 1990, and the subsequent Indian regulations prohibiting domestic sale of all items made of African ivory from 2 April 1992 and the total ban on the sale and display of all ivory items from 23 May 1992 (TRAFFIC, 1992), almost all ivory objects disappeared from view in the shops. The owners of some of the formerly large ivory shops closed off their ivory display cases from view or locked up their ivory in containers, while some of the owners of the small outlets simply took their ivory items away from the shops to keep in their homes. In January 2001 one of the investigators (EM.) visited some of the formerly biggest ivory shops in Old and New Delhi, such as the Ivory Palace, Indian Handicrafts Emporium and Indian Cottage Industries, but not a single ivory item was seen. When he requested to see some pieces, he was told that it was illegal to sell ivory. In June 1993 one of the investigators (EM.) visited several of the shops in Bombay where there used to be a lot of ivory, but only one had items on view. Thus, India was not included in this survey as ivory is no longer an important trade item in the shops.

Field-work was carried out in South and South East Asia from early November 2000 to late March 2001. Martin worked in Nepal, Thailand and Cambodia, while Stiles worked in Sri Lanka, Myanmar, Laos, Vietnam and Singapore. The same two investigators carried out all the survey work as they did for the 1999 Africa ivory study for consistency in data collection. The two investigators interviewed ivory traders, craftsmen, vendors, customers, government officers and conservationists in the key cities and towns in the countries named above. The bulk of the study involved identifying the elephant ivory items and counting the different objects for retail sale. The investigators counted almost every item individually that was identifiable as elephant ivory. There was one exception. In Phayuha Kiri in Thailand many tiny ivory items such as beads were packed in plastic bags for selling wholesale, so estimates of their numbers had to be made.

From trial and error over the years, the investigators have selected the following indicators of the scale and trends in ivory trade: the prices of raw and worked ivory, the number of outlets selling retail ivory items, the number of ivory workshops and craftsmen, and the number of ivory items seen for sale. Data on all these indicators were collected in this survey.

The material is presented for each city/town visited in the relevant countries. The country chapters are in geographical order from west to east. The sources for the information in the Tables on raw ivory prices come from the shop owners and/or craftsmen, while the retail prices of ivory items and their origin come from the shopkeepers. The prices are confirmed by asking several informants. We present the asking price for retail items because some buyers pay these prices and some shops have fixed prices, and we indicate where appropriate the amount of discount that can be obtained by bargaining. Generally, the Tables list items for sale that are more frequently seen in

each city/town. In Esmond Martin's Tables the items and their sizes/prices are nearly all averages and in Dan Stiles's Tables the items and their sizes/prices are listed individually, or by range if more than one price was obtained. In most places, the total number of souvenir/jewellery/antique shops was counted allowing the per cent selling ivory items to be calculated. In Nepal, Thailand and Cambodia, however, there were far too many shops to count in the limited time. The data have been compiled and presented in a similar format as in *The Ivory Markets of Africa* (Martin and Stiles, 2000) in order that comparisons between African and Asian prices, quantities etc. can be more easily made.

Burmese carved tusk

Results of the countries surveyed in late 2000 and early 2001

Nepal

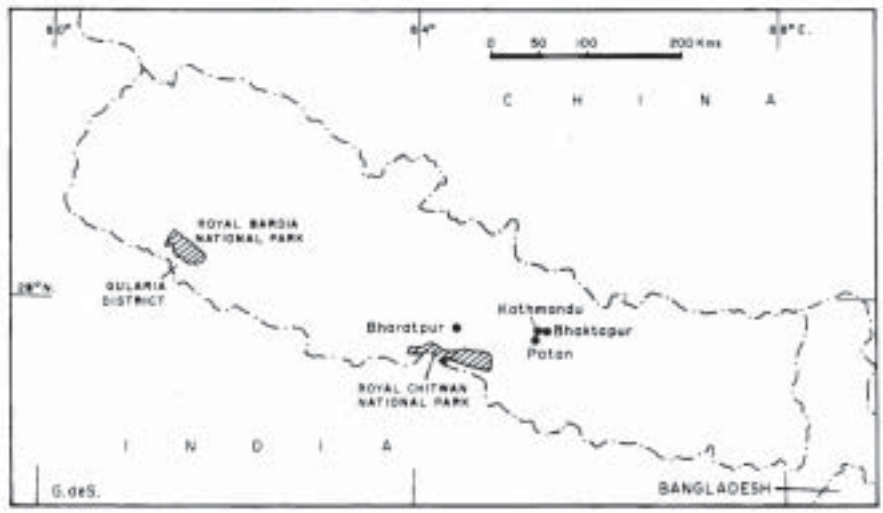
The legal

position of the ivory trade in Nepal

Nepal acceded to CITES on 16 September 1975, one of the first countries to do so. The internal trade in ivory is illegal as the National Parks and Wildlife Conservation Act of 1973 prohibits the sale and even the display of elephant ivory without a permit. According to the present Director General of the Department of National Parks and Wildlife Conservation (DNPWC), Tirtha Maskey, and his predecessor, Uday Sharma, no such permit has ever been given (pers. comms., 1998).

The DNPWC is responsible for implementing the domestic ban inside parks and reserves and the Department of Forests is responsible for everywhere else, but it does not have a specific law enforcement unit (Heinen *et al.*, 1995; Maskey, 1998a and b; and Pringle *et al.*, 1999). The Forest Department has the authority to check the curio shops for endangered wildlife products with the police (Maskey, pers. comm., 1998). The District Forest Officer (DFO) Kathmandu, Dhubra Acharya, confirmed that he had the authority to inspect the shops, but has not done so because the Forest Department, according to him, has not received any report that ivory products are being sold. When the investigator (EM.) told him that many shops in Kathmandu displayed ivory, he appeared surprised. Furthermore, the DFO acknowledged that he did not have the staff to inspect the souvenir outlets, nor an intelligence network to find out what was going on, nor money to pay for rewards leading to the arrest of wildlife offenders. If he heard that there were endangered live animals or products for sale, the fact that he would have to work with the police in a joint operation would mean extensive organization and planning (Acharya, pers. comm., 2001).

The Forest Department in Kathmandu, in co-operation with the police, has arrested and prosecuted people illegally possessing or selling leopard bones, pangolin skins, musk pods, fake rhino horns, bear bile, tiger skins and a few other products. There was not a single arrest, however, for possession of elephant ivory between the fiscal years of 1997/8 and 1999/2000 (see Table 1). Most of these products were discovered by the police, not the Forest Department, in vehicles at road blocks near Kathmandu. Due to growing disturbance by the Maoists (a rebel group trying to overthrow the government by force), the police have been more vigilant since 1997 in checking vehicles for firearms and in the process have found wildlife products.



Map of Nepal

Table 1
Cases of wildlife offences filed at the District Forest Office, Kathmandu for 1997/8-1999/2000.

Fiscal year	Items confiscated, per year	Quantity	No. of people involved
1997/8	Leopard skins	2	2
	Leopard skull	1	2
	Rhino bone	1	2
1998/9	Bear bile	1	1
	Deer	1	1
	Eagles, live	13	1
	Leopard skins	6	6
	Rhino bone	1	1
	Rhino horns, fake	2	6
	Tiger skin	1	1
1999/2000	Bear bile	24	4
	Leopard bones	?	4
	Leopard skin	1	3
	Musk pods from Musk deer	15	6
	Musk deer teeth	2	5
	Pangolin skins	3	1
	Rhino horn	1	1
	Rhino skin and dried meat	?	1
	Tiger teeth	4	1
	Tortoise carapace	24	1

Source: DFO, Kathmandu, pers. comm., 2001.

Most Kathmandu shopkeepers are aware that it is illegal to take ivory items out of the country and to bring them into nearly every other country (to sell or otherwise). Some state incorrectly that tourists are allowed to take out small amounts for personal use or export old pieces that pre-date the CITES Convention without a permit. One prominent shop owner has even gone to the extent of telling his customers that his Chinese-carved elephant ivory pieces are actually made from Siberian mammoth tusks which are legal on the domestic and international markets.

Introduction to Nepal

Fortunately for comparative purposes, an earlier survey of the retail shops in Kathmandu selling ivory items was carried out in February 1998 (Martin, 1998). In addition to this first survey of the retail trade in ivory, one of the investigators (EM.) interviewed the ivory carvers in Nepal in 1982 and 1991 so some previous data are available on the ivory trade of the country.

Field-work for this study was carried out in Nepal from 3 to 23 February 2001. Ivory carving in the town of Patan close to Kathmandu was investigated along with the shops selling ivory items in Kathmandu (500,000 inhabitants). Work was also carried out in the Chitwan Valley in the southern part of the country from where tusks have traditionally come, and in Royal Bardia National Park in the west where a little trade in raw ivory has recently occurred for the Kathmandu market (see map). There are very few elephants in Nepal: 70 wild (mostly in Royal Bardia National Park) and perhaps up to 90 domesticated ones in early 2001, according to DNPWC officials.

Nepalese have been carving ivory for at least 400 years and some historians believe that this art form in may have started the country in the 8th century (St Aubyn, 1987). In the National Museum in Nepal, one of the investigators (EM.) in 1982 saw one ivory statue of Bringi Rishi (13 x 24 cm) which according to the Museum staff and the Museum guide book dates from the 16th century (Dwivedi, 1975). South of Kathmandu in the Patan Museum is a magnificently carved ivory handled mirror which was made in 1733, also in Nepal.

During the Rana dynasty which ruled Nepal from 1846 to 1951, ivory craftsmen produced many attractive items from elephant tusks: boxes, picture frames, prayer wheels, buttons, pins,

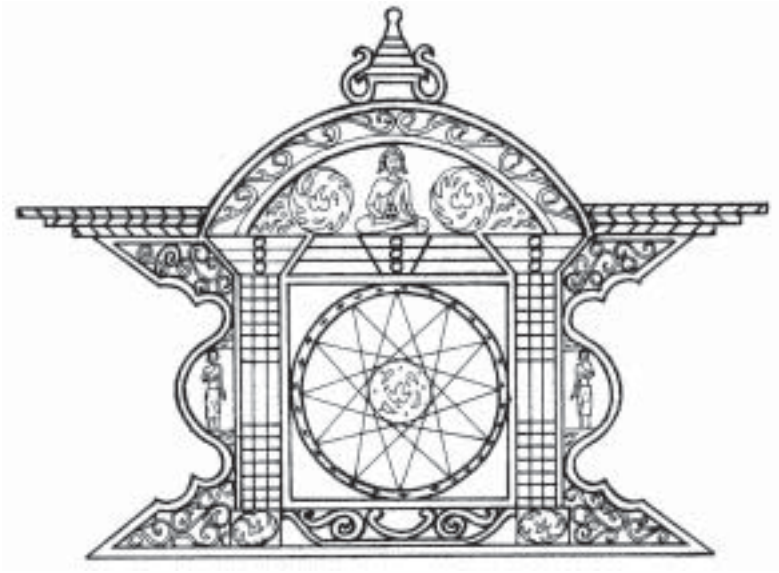
cufflinks, necklaces, sculptures of gods and goddesses, combs, pieces for the traditional game *pasa,* handles for kukris (Nepalese knives), ear picks, carved tusks, windows and ornamental temples. Most of these were made for members of the Rana family and other wealthy and influential Nepalese. Few items were exported wholesale except for some prayer wheels and *pasa* games which were sent to Tibet, according to a main ivory carver (pers. comm., l 982). Occasionally, ivory works of art were commissioned by the government to give as presents to foreign dignitaries. For example, before the visit of Queen Elizabeth II in 1961, a well-known carving family in Patan was commissioned to carve a 2.5 m tusk which came from a Nepalese elephant. It took a master craftsman an entire year to complete the intricate carving (master carver, pers. comm., 2001).

There were never more than 30 families involved in the crafting of raw tusks during the first half of the 20th century and most of them lived in Patan. Many were Buddhists, not from the majority Hindu population in Nepal. They came from a traditional caste of artisans who had been carving ivory for generations and speak the Newari language. There were few other ivory carvers outside the Kathmandu Valley.

After the collapse of the Rana dynasty in 1951 and subsequent political upheavals, the ivory business declined due to lack of commissions from the Ranas and other previously influential families. By the early 1960s there were only four families left crafting ivory. The other families had switched to wood carving as the demand by the Nepalese was higher and wood was easier to obtain. Beginning in the 1960s, foreign tourists for the first time were allowed easy access to the country, and with the sharp increase in their numbers from 6,179 in 1962 to 175,448 in 1982 (Shrestha, 2000), the demand for ivory items expanded considerably to meet growing sales to the tourists, according to the shopkeepers.

Sources and prices of raw ivory in Nepal

When the investigator first studied Nepal's ivory trade in 1982 traders obtained their raw ivory from the owners or handlers of domesticated elephants in Nepal who organized the cutting of the tusks from their elephants, and from other traders who imported raw ivory from India. A few tusks came from old stocks held by the Rana family who sold them in order to earn money. Some Ranas and other wealthy Nepalis had gone on sport hunting trips to Africa and had shot elephants. When they needed money, some of them sold their trophy tusks as well. The main ivory carvers claim that they only bought or were commissioned to carve raw ivory from Nepal or India, not realizing they were also given some ivory tusks from Africa to carve. In l 982, high quality raw tusks were sold to the shop owners or craftsmen for USD 92-115/kg (see Table 2), while broken or badly damaged tusks were bought for only USD 38-46/kg (ivory carving family in Patan, pers. comm., 1982, and see Table 3).



Nepalese ivory window

Members of the Rana family and other wealthy influential people still occasionally sell tusks to traders, as they have been doing for decades, but the quantity sold is small. In Nepal there are an estimated 90 domesticated elephants, but no recent survey of their numbers has been carried out. Some of these elephants are privately owned, with many of them working in the tourist industry. Tusks are occasionally obtained when these elephants die, but more frequently from cutting off their tips, as they have done for decades. Every few years the tusks of the adult males are pruned. For example, at the Tiger Tops Jungle Lodge and the associated "Tharu Village" where tourists also stay, there were 15 domesticated elephants in early 2001 of which three were tuskers. Every three or four years about 8 cm of each of their tusks are cut off by hand saw. Tiger Tops keeps these pieces, but some of the other owners of domesticated elephants sell them. Almost all the domesticated elephants live in the Terai in the southern part of the country, and the tips are transported northwards for sale in the Kathmandu area. According to wildlife traders and ivory craftsmen, there is no evidence of these tips being exported.

Table 2
Prices per kg for high quality raw ivory in the Kathmandu area for various years.

Year	NRs price	USD price
1979	644	58
1982	1,200-1,500	92-115
1991	8,000	187
1998	15,000	242
2001	12,000-15,000	166-207

Table 3
Prices per kg for poor quality (broken or damaged) raw ivory in the Kathmandu area for various years.

Year	NRs price	USD price
1982	500-600	38-46
1998	5,000	81
2001	5,000	69

Wild elephants are very rarely killed illegally in Nepal. There are several reasons. There are few wild elephants (about 70) mostly in Royal Bardia National Park and they are difficult to locate. Local Nepalese think also that they are hard to kill as they are so large. Furthermore, potential poachers around Bardia do not have contacts with ivory dealers nor are they familiar with prices as most of these elephants have only migrated from India in the past decade (mostly due to harassment).

Tusks are obtained from wild elephants which have died of natural causes. In mid-2000 a man south of Bardia was arrested by government authorities for possession of a 15 kg tusk which had come from a large wild male elephant known as Kancha which had recently died. The poacher was inside the Park hunting rhinos in the remote Babai Valley when he came across the tusk. The man was planning to sell the tusk to a trader (who came from Gularia District south of the Park near the Indian border) for the low price of 1,000 Nepalese rupees or NRs (USD 13.84)/kg, less than one tenth of what it could be sold for to an ivory carver in the Kathmandu area. This shows that the person who found the tusk had little idea of the value of ivory. The potential buyer was also arrested, but he refused to tell to whom he was going to sell the tusk nor at what price (Shiv Raj Bhatta, Project Manager, Bardia Integrated Conservation Project, pers. comm., 2001).

Another source is still from imports from neighbouring India. There is a long tradition of Indian traders supplying tusks to Nepal because of the scarcity of elephants in Nepal. Most of the tusks supplied by India are from elephants which either died in north or north-east India from natural causes or were poached or were cut from domesticated animals. Traders in Delhi and Rajasthan who have been exporting worked ivory to Nepal appear to be the main suppliers of tusks for Nepal. In 2000, the price for Indian raw ivory to a trader taking it from India to Nepal was around 10,000 Indian rupees (USD 222)/kg for good quality tusks over 5 kg in weight and from 5,000 Indian rupees (USD 111) to 8,000 Indian rupees (USD 178)/kg for tusks of smaller size and inferior in quality (anonymous sources, Delhi, pers. comm., 2001).

Nepal is one of the main outlets for other Indian wildlife products as well, such as cat skins, tiger bones, musk and bear bladders (Bauer, 1995; and Heinen and Leisure, 1993). Thus, there is a well organized network of traders sending illegal wildlife products from India to merchants in Nepal, especially to Kathmandu.

The price of good quality raw tusks from whatever source as offered by a trader to a shop owner or carver in the Kathmandu area was USD 187/kg in early 2001. This is a decline from 1998 when it was USD 242/kg, an all time high, implying a decrease in demand.

Ivory workshops in Nepal

In 1982, when the investigator first interviewed the ivory carving family in Patan, there were eight people (all males) working in ivory using only hand tools in one house. The main objects carved were: a 22 cm prayer wheel taking one week to make and priced wholesale at NRs 3,000 (USD 229); a 5 cm Buddha taking three days and wholesaling for NRs 400 (USD 30); a 17 cm Buddha requiring five days and wholesaling at NRs 1,500 (USD 115); a 42 cm kukri taking a month to carve and selling wholesale for NRs 8,000 (USD 611); and an 8 cm ear pick taking two hours to make and priced wholesale at NRs 65 (USD 5). The most common of these items were the prayer wheels and the Buddha sculptures. Occasionally, one of the family members would carve an outstanding piece. For example, in 1980 a shopkeeper in Patan gave a tusk to one of the master carvers to produce an intricately carved 15 cm Hindu god. The carver earned in labour NRs 8,000 (USD 721) for almost three months' work. The shopkeeper then sub-contracted the painting of the sculpture to an artist which cost him NRs 4,000 (USD 360). The shopkeeper then attempted to sell it retail for NRs 25,000 (USD 2,252). He actually sold it to an American visitor for NRs 22,000 (USD 1,982). In 1982, the same carver said that he had spent seven months producing another outstanding piece (in 1975), an intricately carved ornamental window (13 x 24 cm). He received NRs 6,000 (USD 1,534 at that time) for his labour which worked out at about USD 218 a month. The shopkeeper, who had provided the piece of tusk, offered the finished window for retail sale at NRs 50,000 (USD 4,766). Usually the craftsmen earned in 1982 on average USD 70 a month. These earnings were above the average of most skilled workers in the Kathmandu area.

This carving family, in 1982, sold its finished ivory pieces to 15-20 different shops in Kathmandu, Patan and Bhaktapur (just east of Kathmandu). None was exported wholesale, but most of the buyers in the shops were foreigners so the pieces did end up going abroad.

By the time the investigator revisited this carving family in 1991, some aspects of the business had changed drastically. Only three family members were still working in ivory due to the difficulties in obtaining raw tusks. The other carving members of the family had switched to working different raw materials, including wood, domestic water buffalo bone and yak bone. They claimed that more money could be earned working these other materials than ivory.

The price of high quality raw ivory in 1991 had soared to USD 187/kg, an almost 100% increase in US dollars from 1982 and about a six-fold increase in Nepalese rupees on account of the difficulties in obtaining it. Most of the tusks offered to the Patan carving family came from the Chitwan Valley, especially from Bharatpur just north of Royal Chitwan National Park. In 1990 the family bought 10 kg of raw ivory, mostly small pieces of less than l kg, and were provided with a few pieces by shop owners. From this supply they carved 10-15 small figurines and 15-20 prayer wheels. They also made five 25 cm *phurpas* (magic darts used in Buddhist rituals to slay an enemy) which took about two months to carve each and were sold to shop owners for NRs 20,000 (USD 648) each.

By 1998 there was only one person in the main carving family in Patan using ivory although a second family member would carve ivory if available. He claimed there were no others left carving ivory in the Kathmandu area. The price of good quality raw ivory rose in 1998 to a record NRs 15,000 (USD 242)/kg. The family claimed at the time that raw ivory was in very short supply, and the traders and shop owners who used to bring them the pieces of tusks no longer did. The main carver said he only worked part time in ivory due to this scarcity. Thus the other craftsmen in the family were using yak bone (a 12 cm piece cost USD 0.73), buffalo bone (a 12 cm piece cost USD 1.29) or wood. In 1998, one small ivory Ganesh (the Hindu elephant headed god of wisdom and success) was being carved using 11 different tools. The carver was earning NRs 200 (USD 3.23) for labour a day for this commission, the same for carving other materials. Compared to 1982, the ivory master carver was earning less in 1998 and was now on a par with a skilled worker such as a carpenter. He partly blamed the shopkeepers who would not pay higher prices for the ivory objects. They in turn claimed that the demand by 1998 for new ivory items had declined drastically on account of the international ivory bans which had come into force in 1990. The ongoing import of worked ivory pieces from China, India and Tibet, in that order, making up 46% of all the items for retail sale in Kathmandu in 1998 (see Table 4), also kept prices from Nepalese-made ivory items relatively low due to the continuing foreign competition.

By the late 1990s an artistic tradition that had been practised for hundreds of years in Nepal — ivory carving had almost completely stopped. The member of the main ivory carving family in Patan who was still working part time in ivory realized that there was no future in ivory and had not even trained his son in the art.

The ivory carving business in the Kathmandu area has continued to decline mostly due to the lack of demand by shopkeepers for new Nepalese items. In total, there may be only four ivory carvers left in the Kathmandu area who are all in the one family (in two separate houses in Patan), according to the master carver, but they all only work part time. The investigator met the two main carvers who were both working ivory in February 2001. The master carver was carving a 350 g piece of tusk into the Hindu god Krishna (god of love, power and strength), first using an electric tool and then using hand tools to complete it. He required 15 days of continuous work to carve such a piece. He planned to sell the sculpture to a shopkeeper for as much as NRs 50,000 (USD 693). The other carver was working on a 22 cm tusk weighing 600 g. He was carving Hindu gods onto it and planned to work a month (eight hours a day, six days a week) to complete it. He expected to sell it to a shopkeeper for at least NRs 90,000 (USD 1,247). He had only worked on one other piece of ivory in the past three years and hoped to make a good profit on the carved tusk. The carvers in Nepal generally are not paid for their ivory items in full until the shopkeepers sells the pieces.

Table 4
Country of origin for ivory items for retail sale in Kathmandu in early 2001.

Country	Percentage of total	
Nepal	38%	(53% in 1998)
China	33%	(29% in 1998)
India	22%	(13% in 1998)
Tibet	6%	(4% in 1998)
Japan, Europe and Hong Kong	1%	(1% in 1998)

The family mostly crafts water buffalo bone which costs a fraction of elephant ivory and is readily available. This raw buffalo bone (harder than elephant ivory) is sold by the piece and 1 kg costs only NRs 40 (USD 0.55). Sometimes they work with yak bones. Elephant bone is not used because it is full of small holes and is too soft. Rhino bone, however, is suitable but rarely carved.

Bone carvings, being cheaper, are easier to sell. In comparison, the carvers may have to wait up to one year to sell a single ivory piece. They put a very high price on their ivory items making them even harder to sell. The carvers further lamented that imported ivory carvings made quickly by electric drills and other power-driven tools were cheaper than Nepalese ones. As a result, when the Nepalese items are sold, the shopkeepers are replacing them with cheaper imported ivory items for which the demand is greater. From 1998 to 2001 the percentage of ivory items made in Nepal offered for retail sale in Kathmandu declined from 53% to 38% (see Table 4). The ivory carving family believes that all ivory carving will cease in Nepal within ten years and thus members of the family are not training any of their relatives to work in ivory.

Retail outlets and prices for worked ivory in Nepal

The main souvenir and jewellery shops were in Lal Durbar, New Road, Thamal, Durbar Marg, the main tourist hotels and in a few other areas of the city. These were surveyed in February 2001. One of the investigator's (EM.) 1998 survey was carried out in the same areas so nearly all the retail outlets visited then were re-examined three years later in order to find out how many ivory pieces were available for sale, the type, the prices, and from what country they were made. Thus, an accurate comparison between 1998 and 2001 was made.

There are at least 200 curio and jewellery shops in the city, and ivory items were found in 57 of them. This compares with 71 out of 184 for 1998. Although there were fewer shops with ivory in 2001, there were slightly more ivory items in total for sale, 1,546 versus 1,454 (see Table 5). Four shops only had one ivory item each while the shop with the largest number of items had 201.

Table 5
Number of shops and ivory items seen for sale in Kathmandu in 1998 and 2001.

Year	No. of shops with ivory items	No. of items
1998	71	1,454
2001	57	1,546

Most of the shops were owned and run by Nepalese, while some ivory pieces were for sale in Tibetan-managed shops selling Tibetan souvenirs, but rarely did Indians sell ivory (they tend to manage shops selling shatoosh shawls and Kashmir-made curios).

Of the 1,546 ivory items offered for retail sale, the most common were figurines (see Table 6). There was no significant change in the type of ivory goods on sale over the three-year period, except for an increase in the number of rings and a decrease in the number of pendants. There were only a few large pieces of ivory for sale, because they are more difficult to conceal in tourists' luggage.

Table 6
Types of ivory items seen for retail sale in Kathmandu in early 2001.

Item	Percentage of total items	
Figurine	43%	(40% in 1998)
a. human,	37%	
b. animal,	6%	
Painting on plaque	14%	(13% in 1998)
Bangle	11%	(10% in 1998)
Netsuke	9%	(13% in 1998)
Ring	6%	(I% in 1998)
Pendant	4%	(12% in 1998)
Box	1%	(1% in 1998)
Button	1%	-
Chopsticks, pair	1%	-
Necklace	1%	(2% in 1998)
Misc.	9%	(8% in 1998)

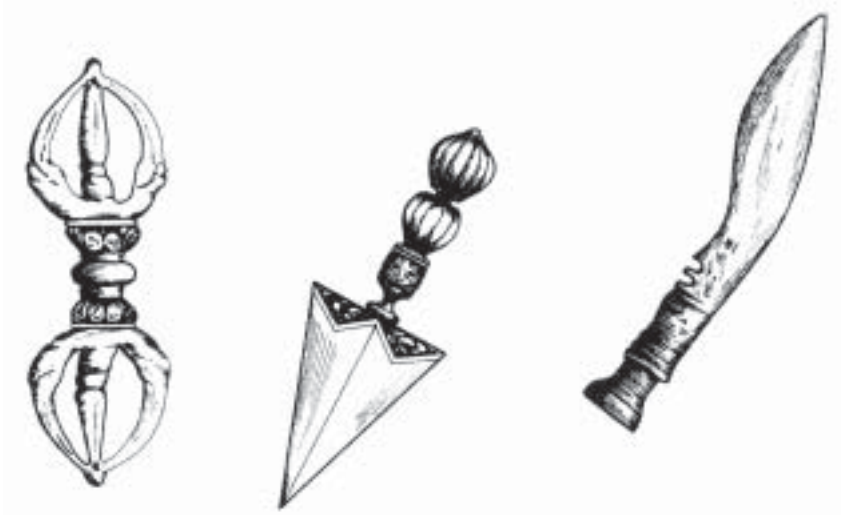
Each country tends to produce its own types of ivory items. The Nepalese items available were Hindu gods and goddesses, sculptures of Asian animals, pendants, bangles, kukris, paintings and boxes. Many of these pieces were made prior to 1990. The most common Chinese items were jewellery, figurines (humans and animals), netsukes, boxes and erotic pieces, all mostly newly made. India provided miniature paintings, usually made in Rajasthan (especially Jaipur), old and new bangles, necklaces and Hindu sculptures. Tibetan-made items were mostly old: *phurpas* (magic darts), prayer beads, hair rings traditionally worn by Tibetan men, boxes, bangles, rings, Buddhist sculptures and *dorjes* (ritual "thunderbolts" that destroy all kinds of ignorance). Not a single item seen for sale was of African origin.

As said earlier, only 38% of the pieces for retail sale was made in Nepal versus 53% in 1998, according to the shopkeepers, a major decline. China followed with 33%, India with 22%, Tibet 6% and Japan, Hong Kong and Europe 1% (see Table 4).

The quality in the workmanship of the ivory varied considerably. Generally, the older pieces (Tibetan and Nepalese) are better carved than the newer ones, many of which were mass-produced in the 1980s with modern machinery in China, northern India and Hong Kong. China was still exporting these pieces in the 1990s, according to the shopkeepers, despite the CITES ban. The poorest workmanship seen were some of the miniature paintings on ivory plaques from India which were crudely painted, especially the erotic scenes, along with Nepalese rings and tiny sculptures.

Besides the new Nepalese ivory pieces, shop owners buy old pieces from the local people, some of which have come from the formerly wealthy elite. The Indian worked ivory objects are smuggled mostly by road to Nepal (according to Indian informers). Since the market for ivory products in Kathmandu is now small, Indian businessmen have to send other curios to Kathmandu in order to make their trade profitable. The Tibetans smuggle into Nepal by road old Tibetan ivory including some very old scroll paintings, teapots, silver bowls and jewellery, as well as newer ivory items from China. Some of the Nepalese shop owners said they order directly from China, Hong Kong and Japan and a few of them go to these countries themselves to collect the items.

The asking prices for the ivory commodities for sale varied greatly. The most expensive piece was a modern 75 cm tusk with many carvings made into it (an elephant bridge) from China. Although the workmanship was only mediocre, it was priced at USD 4,729. The second most expensive was another Chinese item, but an antique: a 10 cm snuff-box carved in the Ming dynasty and offered for USD 4,500. The most highly priced Nepalese-made item was a 45 cm sculpture of Krishna for USD 2,397. The cheapest items for sale were Nepalese 2.5 cm animals for only USD 0.69 (see Table 7). The main retail buyers were French, Germans, Italians and Japanese, the same nationalities as in 1998 (Martin, 1998). Nepalese and Indians (the largest number of tourists to Nepal) rarely buy ivory items except occasionally jewellery.



Dorje Phurpa Kukri

Table 7
Retail prices for ivory items in Kathmandu in February 2001.

Item	Where made	Size in cm	Starting USD price*
JEWELLERY			
Bangle	India, Nepal	0.6	32
		1.2	47
Hair ring	Tibet	2.5	72
Necklace, 44 beads	China	3.7	125
		2.5	108
	Tibet (old)	2.5	148
Pendant	China	6.2	26
Ring	Nepal	0.3	3
FIGURINES			
Buddha	Nepal	2.5	19
		7.5	52
Elephant	Nepal	3.7	40
		7.5	191
Erotic couple	China	6.2	273
	Japan	7.5	467
Wild animal	Nepal	2.5	0.69
Woman	Nepal	10.0	251
	China	27.0	981
MISC.			
Bowl	Tibet (old)	10.0	727
Box	China	7.5	131
		12.5	534
Chess set	China	7.5	1,662
	Tibet (old)	7.5	325
Knife (kukri)	Nepal	42.0	1,292
Name seal	China	7.5	48
Netsuke	China	7.5	165
Painting on plaque	India	12.5 x 5.0	43
Pasa game	Nepal		497
Phurpa (magic dart)	Tibet	17.5	658
		20.0 x 10.0	168
	Nepal	3.7 x 3.7	3
Prayer beads	Nepal	1.2	150
Snuff-box	Nepal	7.5	31

***** For final price after bargaining, deduct about 30%.
NB. USD 1 = 72.2 Nepalese rupees.

Despite an increase in the number of tourists visiting the country from 254,885 in 1990 to 421,857 in 1997 (Shrestha, 2000) sales of ivory items, according to the shopkeepers, have declined by 90% since 1990 due to the decline in demand because it is has become illegal and less fashionable. Another reason is that tourists do not shop in general for souvenirs as much as they used to, according to the shopkeepers, perhaps because many of the items, including ivory, are for sale in their home countries. The retail prices for ivory in US dollars have actually remained roughly the same from 1998 to 2001 (while increasing in Nepalese rupees as a result of a devaluation by almost 20% over this period), but this has not helped sales.

By comparing which specific ivory items were for sale in each shop in 1998 with those in the same shop in early 2001, it was possible to determine which pieces had gone. Only about two-thirds of the ivory items surveyed for sale in 1998 had been replaced by 2001, meaning a minimum of 1,000 items had been sold over these three years or about one a day. One can assume that most of these pieces were sold, but it is possible that some were transferred to another shop or taken home by the owner or simply hidden away.

The owners of the main curio shops say they are starting to phase out ivory because it is not profitable enough. Instead, other curios are being offered for sale and they are displaying more wood and some bone carvings. Interestingly, they were not yet importing carvings of camel bone, which has become a substitute for ivory in northern India. In Rajasthan, a wide variety of camel bone items have been produced since 1990. Some are stained brown and others are bleached white to look like elephant ivory. The carvings are only mediocre and are much cheaper than ivory. For example, a camel bone Japanese name seal 7.5 cm long in Delhi sells for USD 5.40 but an ivory one in Kathmandu is USD 48. Unless the quality of camel hone items improves, this ivory substitute is unlikely to become popular in Nepal.

Sri Lanka

The legal position of the ivory trade in Sri Lanka

Sri Lanka acceded to CITES on 2 August 1979. In 1981 the Department of Wildlife Conservation (DWC) ordered that all elephant tusks and ivory carvings be registered with the Department (Santiapillai *et al.*, 1999). Only registered ivory can be legally sold domestically. In l 993 the Fauna and Flora Protection Ordinance was amended (Chapter 469) to ban the sale of all ivory. Anyone caught with unregistered ivory is subject to two years in prison and a fine of 30,000 Sri Lankan rupees (USD 400). Individuals can still own elephants and the ivory that derives from them, and even can have it carved and willed to descendants, but no ivory can be legally sold or exported (Hendaut Tharana, DWC, pers. comm., 2000). Elephant hunting was banned in 1937, but crop-raiding elephants are still killed illegally by farmers.

Beginning in l 995 the DWC mounted a determined effort to stop the retail sales of worked ivory, and as a result most shop owners and carvers are very reticent to talk about ivory.

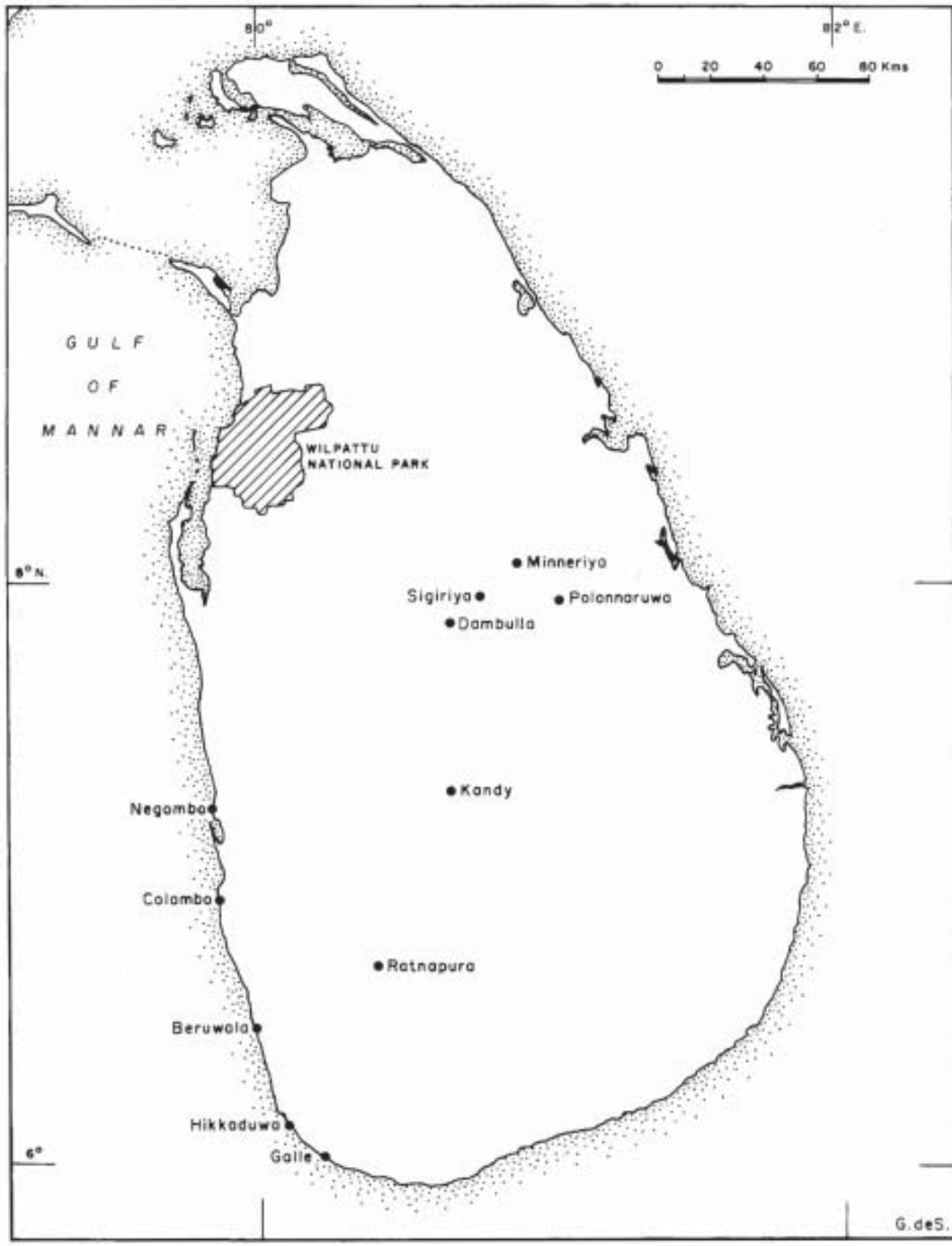
Introduction to Sri Lanka

The visit was carried out from 6 to 21 November 2000. Martin and Martin (1990) and Santiapillai *et al.* (1999) reported that the main centres of the ivory carving trade were the capital Colombo (700,000 inhabitants), Kandy (100,000), Galle (80,000), and the coastal tourist towns of Negombo, Beruwala and Hikkaduwa (see map). All of these places were surveyed, along with other antique shops seen along the south-west coast between Colombo and Galle. Polonnaruwa, a major tourist attraction in the north, was also visited after informants reported that this was a main ivory carving centre. Craft outlets in Ratnapura, the country's main gemstone production centre, and the tourist spots of Dambulla and Sigiriya were also visited.

Buddhist *dagohas* (temples) in Sri Lanka commonly use both ivory tusks and carved ivory for adornment and for religious objects such as Buddha statuettes, monks' fan handles and relic caskets. The larger temples, such as Gangarayama in Colombo, receive gifts brought by visiting monks and other believers. The gift display rooms at Gangarayama are full of ivory items, some being quite large mounted tusks or elaborately carved pieces from China, Thailand and other Buddhist countries. Gifts of ivory are being received even today. These practices probably have very ancient roots, and King Jetthalissa 11(328-337 AD) produced the first recorded ivory Buddha in Sri Lanka. Sri Lankan rulers gave fine ivory caskets encrusted with gems to Portuguese and Dutch traders in the 16th to 18th centuries (St Aubyn, 1987). Ivory carving was particularly well developed during the Kandy period (1597-1815) and many of these fine pieces can be seen in the National Museum in Colombo today. A beautiful ivory Perahera elephant with a gold howdah and encrusted with gems, representing the ornamented elephants displayed at the annual Perahera ceremony in Kandy, was shown at the 1904 St Louis Exposition in the USA (Kunz, 1916).

Ivory sculptures of Hindu gods and goddesses, particularly Ganesh, Krishna, Shiva (the destroyer) and Vishnu (the preserver), have been produced for home display by both Hindus and Buddhists for generations, and are still being manufactured illegally today. Sarasyati (the Hindu and Buddhist goddess of learning and the arts), is very popular, as is Nataraja (which is Shiva as Lord of the Dance). Polished raw tusks are used today to adorn the caskets of wealthy Sri Lankans at funerals, and very large ones embellish Buddhist temples. Thus ivory has a well-established history of use in Sri Lanka.

Martin and Martin (1990) reported that in 1979 the quality of carved ivory had declined considerably due to the replacement of most buyers from the indigenous upper social classes to tourists. In late 2000 this study found that most recent carving was of mediocre quality, but that quite well carved items could still be found, most of these being older pieces. The older ivory craftsmen who die or retire are not being replaced today by well-trained artisans, the main reasons being that commercial ivory carving is illegal, there is no longer an important enough market to provide the financial incentive necessary, nor is there the social prestige that previously was accorded to master craftsmen. This trend may give satisfaction to wildlife conservationists, but in another sense it is regrettable to see the end of a centuries' old tradition of producing fine art.



Map of Sri Lanka

The number of elephants in Sri Lanka was estimated to be about 12,000 in 1900 (Olivier, 1978). Up to 1937, when elephant hunting was prohibited, thousands of wild elephants were killed as forest areas were cleared for human habitation and for coffee, tea and rubber plantations. About 2,600 km^2 of prime elephant habitat was lost during the Accelerated Mahaweli Development Programme in the 1970s (Ishawaran and Punchi Banda, 1982), and by 1979 only about 2,500 elephants remained in the wild (Martin and Martin, 1990). This number had dropped to around 2,950 in 1990 and to about 2,000 in l 993 based on a DWC survey (Hendavitharna *et al.,* 1994; Jayawardene, 1994). In spite of elephant losses almost doubling from 50-60 annually in the 1950-1970 period to 100-120 annually in 1998, de Silva (1998) and Santiapillai *et al.* (1999) estimated that in 1998 there were 4,000-4,500 wild elephants in Sri Lanka, which would seem to be too high a number. Dc Silva (1998) admitted that he was only making an educated guess. Thouless (1994) found that elephant mortality rates were high enough to reduce population growth rates, thus elephant populations are probably declining. There were more likely from 2,000 to 2,500 left in 2000, with most of them located in the forests of the north-west, north-east and south-east in and around protected areas.

Chin *et al.,* (1998) stated that in 1995 there were only 316 elephants left in captivity, down from 670 in 1955 and 532 in 1967. Lair (1997) believed that there were 400-600 domesticated elephants in 1996, but agreed that the population was in decline.

The availability of raw ivory from indigenous sources is further reduced in Sri Lanka by the fact that the selective poaching of male tuskers is both reducing the overall number of elephant bulls that carry ivory, and reducing the male:female sex ratio. Females carry no tusks, only small tushes (Santiapillai *et al.,* 1999). Hendavitharna *et al.* (1994) found that only 7.3% of male elephants from large samples taken all over the country carried tusks.

Elephants are being killed by poaching, by land mines in the civil war zones in the north, and in human-elephant conflict by farmers (Alahakoon and Santiapillai, 1997; Anon., 1997; Kambe, 2000). From 1990 to 1993 land mines and poachers' bullets in the war zone killed approximately 165 wild elephants and a further 20 died from land mines alone in 1994. In 1996 six elephants were poached near Polonnaruwa and organized gangs of poachers killed one outside Wilpattu National Park, both incidents in North Central Province (Alahakoon and Santiapillai, 1997).

Sources and prices of raw ivory in Sri Lanka

Workshop personnel and vendors would not answer questions about where raw ivory came from nor about its price, other than to say that tusks were not paid for by weight, but on an individual basis. One carving workshop in Minneriya, near Polonnaruwa, was visited three times in an attempt to obtain the raw ivory price. At the first visit the people present said that a carver who originally came from Galle had carved a 5 x 6 cm Buddha only the week before. It was priced at USD 185, but since the carver was on leave in Galle they did not know how much he had paid for the raw ivory. They said to return and someone would be there who knew the price. On the second visit the person was still not there, but the Buddha was down to USD 150, and two more ivory objects were presented for sale. On the third visit the manager was there, but he said that no one carved ivory anymore, and all three ivory pieces he had for sale were carved 15 years ago. The Buddha was now down to USD 100. Reactions like this were similar in other workshops and retail outlets.

Each tusk brought for sale to a workshop by a poacher or middleman is assessed for quality, and probably also the risk factor in transporting it to the workshop from the place where the elephant was killed or had died. This would help explain the low prices for retail worked ivory around Polonnaruwa, which is close to wild elephant habitat, and the higher prices in Kandy and Colombo. A hotel manager in Polonnaruwa said that the poachers were villagers, not military personnel. Because of the civil war, there are numerous military roadblocks on the highways that make searches of selected vehicles. The relatively low prices in the coastal outlets seem to be due to the fact that the vendors are trying to liquidate their ivory stocks. Two vendors told the investigator that this was indeed the case. In 1979 Martin and Martin (1990) stated that ivory was obtained from poachers or from the owners of domesticated elephants. This remains the case today.

Esmond Martin

This domesticated Sri Lankan elephant has unusually long tusks and is hired for ceremonies.

Esmond Martin

These two tusk pieces were being carved into religious figurines in Patan, Nepal, in February 2001.

Esmond Martin

Carved in Sri Lanka in 1979, this ornate ivory elephant was the country's speciality souvenir, but ivory ones are made no longer. Such elephant carvings are named "Perahera" after the annual ceremony where Buddha's "tooth" is carried on an elephant in Kandy.

Esmond Martin

Photographed in 1979 near Kandy in Sri Lanka, this ivory craftsman used only hand tools. There are only a few men carving ivory in the country today.

Esmond Martin

Adult female elephants in Asia have tushes that are of relatively little economic importance compared with tusks on the bull elephants.

Esmond Martin

Large tusks such as these in Myanmar are rarely seen today.

Daniel Stiles

This shop in the entrance hall of the Shwedagon Pagoda in Yangon employs its own craftsmen to produce the items for sale.

The only raw tusks seen for retail sale were a pair of 25 cm tusks, which had the internal ivory removed, in an antique shop in Hikkaduwa near Galle, which weighed an estimated 0.6 kg each. The pair was priced at 50,000 Sri Lankan rupees (USD 667), which works out to about USD 556/kg, though bargaining was not done. The final price may have been 30-50% less (USD 278-389/kg) as an estimate. The vendor said that raw ivory could no longer be found in the south-west coast region. Martin and Martin (1990) reported that raw ivory cost USD l 70/kg in Kandy in 1979 and *Asiaweek* reported that raw ivory cost USD 110/kg in 1987 (Anon., 1987).

When ivory sales were legal in Sri Lanka, raw ivory was imported from Africa in small quantities, ~400-620 kg a year from 1920 to 1964 (Martin and Martin, 1990). These days it is very unlikely that raw ivory is smuggled into Sri Lanka from any foreign source, the risk is too great compared to the payoff, though small quantities of worked ivory still come in illegally from India. In 1999 the Fauna and Flora Protection Task Force of the Customs Department seized several carved ivory pieces in the Colombo port, coming from Ghana. The Polish captain was fined 200,000 rupees (about USD 2,700) (Kambe, 2000).

Ivory workshops in Sri Lanka

Former ivory working centres were in Galle and in the vicinities of Colombo and Kandy. Martin and Martin (1990) estimated there were 107 ivory artisans in Sri Lanka in 1979, with 45 in and around Galle. There is not a single ivory workshop in Galle, according to informants, nor near Colombo because of the DWC crackdown. Individuals in home workshops around Kandy and Polonnaruwa are still working ivory, though no one would take the investigator to visit one. Wood-carving workshops were visited in Negombo (one), Galle (one) and Polonnaruwa (three), and many of the carvers who formerly carved ivory now work in these places. Carvers in Negombo said that they would carve ivory if it were supplied and a commission were placed. They said that the last time they had carved ivory was in 1995. Two wood-carving workshops near Polonnaruwa, one that claimed to be the largest in Sri Lanka (12 workers), said they employed carvers who previously had worked ivory in Galle. All three workshops visited around Polonnaruwa also had ivory for sale. One of the showrooms here associated with a wood-carving workshop displayed over 100 ivory items recently carved for sale.

There were no longer any ivory workshops as such in the places visited, and the number of craftsmen who regularly work ivory seemed to have been reduced from 1979 by up to 90% (see Table 34). This decline suggests that the demand for worked ivory has decreased substantially since 1979.

Retail outlets and prices of worked ivory in Sri Lanka

Table 8 shows the number of retail outlets that sold ivory in the places visited. In all, 22 out of 113 antique/craft outlets surveyed sold ivory, some 19.5% of the total. The largest quantity of displayed ivory was seen in Kandy, followed by Polonnaruwa (due to one shop) and then Colombo. Very little carved ivory was openly displayed in Colombo, as vendors knew that it was illegal to sell it. Most of the objects, commonly called antiques, were usually kept in closed cupboards or safes. Conversely, both carved and uncarved ivory items were openly displayed in Kandy and Polonnaruwa, and in the six antique shops along the west coast. The vendors here also knew it was illegal to sell, but they were apparently not concerned about visits from the DWC. The vendors did not answer questions about the sources of their ivory, however, and several became very guarded after more than a few minutes of questioning.

Table 8
Number of shops and ivory items seen for sale in Sri Lanka in November 2000.

City, town	No. of shops surveyed	No. selling ivory	No. of items
Kandy	17	7	355
Polonnaruwa	6	3	~116
Colombo	20	6	102+
SW coast	30		27+
Negombo	28	3	19
Galle	5	0	0
Ratnapura	2	0	0
Dambulla and Sigiriya	5	0	0
Total	113	22	~620

Craft outlets can be classified into three main types: (1) those catering to mass tourism, (2) antique/art boutiques, and (3) high-end outlets of the first type that carry good quality handicrafts and antique items. No ivory was found in the first category of shop; some, mainly collectors' pieces, were found in the second; and the most ivory was found in the third type. No ivory was found in any hotel boutiques or at the airport.

The number of ivory objects varied considerably from shop to shop in Sri Lanka. The minimum was one piece and the maximum, in Kandy, was an estimated 158 pieces. Full and accurate counts were not possible in some places because either the shops were closed (two) at the time of the visit or, more commonly, the ivory pieces were mixed in with similar pieces made from bone or moulded bone resin. It was not practical to remove each item from the display case to identify it as ivory or not, as there were hundreds of the bone and cast resin pieces, and even the sales helpers did not know which was which without examining tags on the pieces. Many were stained or tinted to make them appear old, which made identification even more difficult. The total number of elephant ivory items seen for sale in Sri Lanka was approximately 620, with a few more pieces contained in the two closed shops identified by informants for selling ivory.

The most frequently seen carved pieces in order were Buddhas in various *mudras* (hand and body positions), and Hindu gods, elephants, and fan handles. Other common objects were medicine boxes, combs, lions, elephant bridges, pairs of Kandy king-and-queens, dagger handles, palm-leaf book covers and medicine balance-scales. Some of the Buddhas were placed within carved and painted wooden stands. All these types were carved in Sri Lanka. Some of the Hindu gods and, in one antique shop, Moghul style paintings on filigreed ivory plaques, were imported from India. Three shops had one or two items originating in China, and one antique boutique displayed a bust carved on a tusk that came from central Africa that was bought from an Italian diplomat. The Perahera elephant carving, covered in gold plate and encrusted with tiny gems (based on the annual Kandy Perahera celebration), used to be a popular ivory item (Martin and Martin, 1990). These days, however, those made of ivory are extremely rare, and even when found are quite small. This item is now usually carved out of wood or cast in resin. Sri Lankan carved elephants tend to be quite broad and squat, thus heavy, which is a style not seen elsewhere in Asia. Buddhist priests no longer use ivory fan handles as they have switched to metal or wooden ones, and many of the remaining old handles can he found in antique shops. As reported by Martin and Martin (1990), no craftsmen are left who can fashion suitable fan handles.

Table 9 shows the ranges of retail prices for various carved types. Prices for similar type items varied greatly depending on the quality of carving and age, whether it was placed in a decorated frame or on a stand, and if it was adorned with silver or gems. Prices were generally highest in Colombo, followed by Kandy, then the coast resorts and finally Polonnaruwa (the forested area where elephants are currently poached). For example, a 15 cm ivory comb was priced at USD 65 in Polonnaruwa, while similar ones elsewhere cost at least USD 150.

Table 9
Retail prices for ivory items in Sri Lanka in November 2000.

Item	Size in cm	Starting USD price*
JEWELLERY		
Necklace, small beads	127-152	
FIGURINES		
Elephant	<5	24-72
	5-10	300
	10-20 (1.5 kg)	1,240
	(2 kg)	1,440
Perahera	8	456
Kandy king and queen	12 and 10	480
Religious	<5	24-90
	5-10	63-280
	10-20	112-1,200
	20-30	864-1,200

Table 9 continued

Item	Size in cm	Starting USD price*
TUSKS		
Carved		
(with wood stand), new	15	240
(with silver tip), antique	18	1,320
(with wood stand), new	25	420
	25	1,240
	90	1,520
Raw, 2	25 (1.2 kg)	800
MISC.		
Comb	7	77-142
	10	156-300
	18	200
Fan handle	5-10	63
	10-20	63-400
	20-30	200-632
	40	1,200-1,350
Horn	15	720
Medicine box	<5	56- 80
	5-10	91-120
	10-20	20-880
Medicine scale		150
Temple *(dagoba)*	25	400

* For final price after bargaining, deduct about 30-50%.
N.B. USD 1 = 75 Sri Lankan rupees.

Mainly tourists buy the newer and cheaper ivory items; Portuguese, Dutch, French and British were named in order of importance. Japanese tourists used to be the largest buyers, but they have almost completely ceased coming to Sri Lanka since the war with the Tamil Tigers began receiving extensive media coverage in the mid-1990s. The fact that not a single name seal was seen for sale indicates that Eastern Asians are not targeted buyers. The more expensive older ivory pieces tend to be bought by both local and foreign collectors, for the latter Portuguese and Dutch being most often mentioned. Vendors said that they would commonly issue false receipts for the ivory items stating that they are made from cow or water buffalo bone to enable export and destination import.

Carved bone items were much cheaper than ivory pieces. For example, a 10 cm figurine in bone had a starting price of USD 80, while a similar piece in ivory started at USD 200 or more. Bone medicine scales ranged from USD 40-70, while ivory ones were USD 125, and a 10 x 12 cm elephant bone medicine box was priced at USD 200, with similar ivory ones costing from USD 420-880. The asking price for a 35 cm high figurine of a Hindu god carved on an elephant molar was USD 500.

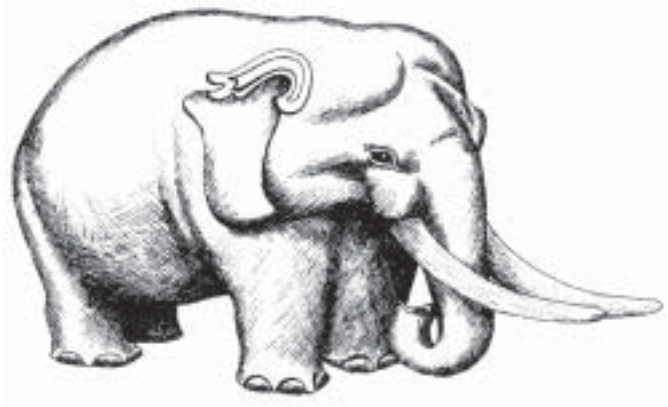
Vendors report that sales of ivory items nowadays are quite slow, and as a result prices are lower than five years ago. Starting prices can still be very high, but for more recently and poorly carved pieces, especially if large, the price can be bargained down to about half the starting price. In several shops vendors tried passing off cow or fish bone, or even moulded bone resin, as ivory. An informant said that bone is ground up into a powder and mixed in as white colouring with a kind of resin, then placed into a sculpted mould to create a figurine. Ganesh and Buddha were common subjects for this. Many vendors said that they had stopped ordering ivory, or buying it from passing salesmen, but others, mainly in Kandy, were still buying items, as sales in this tourist centre were better than elsewhere.

Laksala, the government handicraft chain, stopped selling ivory items in 1995. The investigator visited two Laksalas in Colombo and one each in Beruwala, Galle and Kandy to confirm that they sold no ivory nowadays. One shop in Galle said that they stopped selling ivory items in 1997, but the owner said that he had a small ivory elephant and comb at home that he could bring in to sell. Another shopkeeper in Negombo that had ivory said that they had bought their displayed pieces

from an itinerant trader from Galle, also in 1997, but most of the pieces were still unsold, and the owner said that she would not buy ivory items again.

The investigator found a huge pair of African rhino horns (~7 kg) and two elephant foot tables in one well-known antique shop in Colombo, but in general wildlife products were not seen for sale in art and craft outlets.

It is not possible to estimate trends with confidence for the ivory trade in Sri Lanka, such as by comparing changes in retail prices or number of shops selling ivory, as comparable data are not available. Prices of items reported in Martin and Martin (l 990) and Santiapillai *et al.* (1999) fall within the range of variation of prices for similar sized items reported here; thus this indicator suggests that ivory demand has not increased for some time, but the comparative quality and historic value of the respective items cannot be determined. The number of shops selling carved objects reported in Santiapillai *et al.* (1999) did not distinguish between those carrying real ivory and fake ivory, thus the information cannot be used. The USD 18 price in Table 2 of Santiapillai *et al.* (1999) for a 7.5 cm 'ivory' Buddha figurine is certainly for a fake ivory piece. A 7.5 cm Ganesh figurine, in comparison, was priced at USD 90 in Santiapillai's Table which is consistent with the prices found in this study.



Sri Lankan elephant sculpture

Myanmar

The legal position of the ivory trade in Myanmar

Myanmar acceded to CITES on 11 September 1997. Wild elephants are protected by the Wildlife Protection Act of 1935, amended in 1956, and by the Public Property Protection Act of 1963 (Myint Aung, 1997). In 1994 the Forest Department established a new law protecting wild animals and plants outside forest and wildlife protected areas, and later that year Notification No. 583/94 published a list of species that cannot be hunted nor products exploited, which includes the Asian elephant (GoM, 1994).

Legislation makes the killing of elephants and transport of whole tusks illegal, but it is still legal to buy ivory tusk-ends cut off from domesticated elephants and to transport and sell carved ivory. The government used to sell ivory obtained from government-owned elephants in auctions (Martin, 1997), but this practice has apparently stopped, or at least has not been carried out recently, according to informants. The government also encourages ivory carving through support given to the Myanmar Artists and Artisans Association, and prizes are awarded to the best carvers (Nan Myint, n.d.; Ohn Nyunt, ivory carver, pers. comm., 2001).

The situation concerning the ivory trade is thus somewhat ambiguous, with the prohibition of trade in whole raw tusks on the one hand and the encouragement given for ivory carving by the government on the other. Whole raw and carved tusks are still openly displayed for sale in Yangon and Mandalay and, at least in Mandalay, whole tusks are still being carved

Introduction to Myanmar

Yangon (4 million population) was visited from 3 to 8 February and from 15 to 17 February, and Mandalay (750,000) was surveyed from 9 to 14 February 2001. A day trip was also made to the small town of Bago during this period (see map).

The ivory carving industry began in Myanmar in the 19th century, though a few small Buddhas were carved in the 18th century (St Aubyn, 1987). King Thibaw had an ivory chair made for himself in 1878, which can now be seen in the National Museum, and royal swords had ivory handles. Buddhist scripture was also written on large ivory flakes during this period. In about 1900 the main ivory carving centres were in Rangoon (Yangon), Moulmein (Mawlamyine) and Pyinmana, but the industry was not flourishing. By World War II Mandalay had taken over as the main ivory production centre, and the Japanese occupation actually stimulated ivory trade by soldiers buying large quantities of ivory name seals, chopsticks and cigarette holders (Martin, 1997). After the war ivory was still used mainly for utilitarian items by British colonials and Indians working for timber companies, such as cigarette holders, combs and jewellery, though the Indians also bought statuettes of Hindu deities (Martin, 1997).

In spite of the disastrous economic situation brought on by the military socialist government in 1962, ivory production increased in the 1970s, due mainly to Thailand's economic development, as worked ivory was exported to Thailand (Martin, 1997). The gradual opening up of Myanmar to tourism and foreign businessmen in the 1980s and especially the 1990s has stimulated the ivory carving industry considerably. Today it is second only to Thailand in South and South East Asia.

The quality of ivory carving in Myanmar today varies from low to mediocre in Yangon, and mediocre to high in Mandalay. As a result of government encouragement, and with the incentive of foreign visitors willing to pay for high quality, there is a small cadre of artisans in Mandalay who are leading what one has called a 'renaissance' of the traditional art of ivory sculpture (Nan Myint, n.d. and pers. comm., 2001).

Myanmar still has natural forest cover of 43%, and it holds an estimated 75% of the world's teak reserves. Marco Polo visited the country in the 13th century and described it as teeming with elephants, unicorns and other wild beasts. In 1586 Ralph Fitch was probably the first Englishman to visit Burma (officially called Myanmar since 1989). He counted 5,000 trained elephants owned by the Nanda king of Bago alone, used to harvest teak, thus there must have been many more thousands in the rest of the country (Zaw, 1997). In 1996 Lair (1997) estimated that there were no more than 6,000 to 7,000 domesticated elephants in the entire country, still the largest number of any country in the world. The Myanmar Timber Enterprise company, which is state owned, possesses about 2,900 of these, while the others are privately owned.

Map of Myanmar

The Forest Department estimated that there were approximately 9,000 wild elephants in the country from 1956-1960. In 1990/1991 the Forest Department concluded after a survey that there were a minimum of 4,639 wild elephants in the country, but the survey did not include Kachin State in the north and Shan and Kayin States in the east, which among them probably harbour at least 1,500 wild elephants (Myint Aung, 1997). Thus, there were about 6,000 wild elephants in 1990/91. The IUCN Asian Elephant Specialist Group estimated that there were from 4,639 to 5,000 wild elephants in 2000 in five main areas: Northern Hill Ranges, Western Hill Ranges, the Pegu Yoma Mountains in central Myanmar, and in the east, the region of Tenasserim and Shan State bordering Thailand (Kemf and Santiapillai, 2000).

Two threats endanger wild elephant populations today: capture for domestication and ivory poachers. Myint Aung (1997) states that 2,122 elephants were captured for timber extraction between 1970 and 1993 and, of these, 395 died as a result of the capture actions. He also reports that the army sometimes illegally captures or kills elephants in their operations against rebel groups in the east of the country. Caughley (1995) calculated that a maximum offtake rate of 4% was a sustainable one for the wild elephant population. Thus, if Myint Aung's capture rates are accurate, and the rate has remained on average stable up to the present, capture alone should not endanger the wild population. Unfortunately, there are no data for the number of elephants poached each year.

Sources and prices of raw ivory in Myanmar

According to local sources, most ivory is obtained from the forested areas in Kachin and Shan States with a bit coming from the Pegu Yoma Mountains. Although no data are available, informants said that quite a bit of ivory can be obtained in the form of tusk-ends from domesticated elephants and whole tusks from those which die. Tusks from wild elephants poached by the Myanmar army and by soldiers of the various ethnic minority armies also come onto the market, though some are smuggled into Thailand. When ivory is available for sale, word is sent to shop owners or carvers in Mandalay, who either send someone or go themselves to collect it. One senior carver had gone to a village north of Myitkyina and another had gone to Shan State to obtain ivory at the time of the investigator's visit to Mandalay, One retail shop owner with an ivory carving workshop in Mandalay said that some of his ivory came from India, but he was the only one in Myanmar to give this source.

Buyers said that they could get permits from the Forestry Department to transport raw ivory, but it was unclear under what circumstances this could be done. Buyers also said that military police at checkpoints could simply be bribed if the ivory were found.

A weight unit called a *viss,* which equals 1.6 kg, is used to measure raw ivory. In Yangon a decent tusk tip weighing 1 *viss* now costs 100,000 kyats or USD 142/kg, up from 30,000 kyats (~USD 62.50/kg @ 1 USD = 300 kyats) three years ago, a 227% increase in price in US dollars. A similar piece in Mandalay would cost the same or perhaps slightly less. The price for a 40 cm, 1.5 *viss* raw tusk was also 100,000 kyats/viss in Mandalay. A 10-20 *viss* (16-32 kg) tusk would cost 250,000-350,000 kyats or USD 355-497/kg, according to one workshop owner. He had not seen one for a long time. Smaller tusk pieces, other fragments and tushes (from females) were purchased at prices ranging from 30,000-60,000 kyats/viss or USD 42.50-85/kg.

Martin (1997) reported that raw small tusks and female tushes cost USD 13.50 and USD 10 per kg respectively in 1981, rising to USD 128 and USD 107 per kg respectively in late 1995. The larger tusks sold for USD 26/kg in 1981, rising to USD 239/kg by December 1995. Raw ivory prices seem to have fallen in Myanmar since late 1995 (see Table 10). The raw ivory price indicator suggests that ivory demand increased greatly between 1981 and 1995. The drop in price after 1995 observed during this survey (in 2001) is due either to decreased demand or increased supply although the price is still higher than in 1981.

Table 10
Prices per kg in USD for raw ivory in Myanmar for various years.

	<1 kg	1-15 kg	>15 kg
1981	10-13.50	26	-
1993	128	256	-
1995	107-128	239	-
2001	42.50-85	142	355-497

N.B. - = no data.

Ivory workshops in Myanmar

Two shop owners in Yangon at the New Bogyoke Market were quite helpful in providing the investigator with the names and contacts of ivory carvers in Yangon and of a shop owner at the Shwedagon Pagoda who employed ivory carvers. The shop owner at the Shwedagon Pagoda decided in the end not to allow the investigator to visit the workshop, as she feared the carvers would 'become proud' by the attention and demand higher wages. The workshops are in people's homes in the suburbs where one or more carvers work with simple hand tools and vices. No electric tools are used. One workshop where ivory was carved was amongst the 20 or so wood-carving workshops found outside the south entrance of the Shwedagon Pagoda.

Five workshops were found employing about ten craftsmen who work more or less full time on ivory. Three workshops were in Thaketa, one in Saya San (both suburbs of Yangon) and one at the Shwedagon Pagoda. The carvers work completely on commissions from shop owners, from middlemen who sell worked ivory to shops and embassies, and from private individuals who want the pieces for themselves. The client provides the raw ivory. The most skilful, least expensive and most reliable ivory carvers had established lasting relationships with a number of buyers, who kept them busy. Because of the ivory scarcity only small pieces are carved these days in Yangon. All of the raw ivory pieces seen in Yangon at workshops weighed less than 1 kg. Two former ivory carvers had stopped carving ivory to shift to wood, and more than one carver said that many ivory craftsmen had moved to Mandalay because there was more raw ivory, and thus business, there.

In Mandalay at least 45 ivory carvers were identified, but some work part time for more than one workshop, and thus it was difficult to arrive at a final total. Three of the larger ivory retail shops had their own in-residence carvers. Two of the main senior independent carvers who employ 'undercarvers' were away on raw ivory buying trips, so complete information on their workshops' activities was unavailable.

One of the larger shop owners, who also has a branch in Yangon, said that his three carvers use about 1.5-2.5 kg of raw ivory a month, which seems to be an underestimate based on observing the carvers working and seeing the large amount of ivory in the shop. In another workshop, two carvers were each working ~3 kg whole tusks which would take 30 to 40 days to complete and one was working on a 200 g piece which would take ten days to make. Small to medium size (2-6 kg) tusks were not uncommon in Mandalay workshops.

One older Chinese carver in Yangon, who had been working ivory for more than 30 years, said that he earned 150,000 kyats (USD 340.90) a month on average, a huge sum in Myanmar where the per capita income is about USD 280 a year. (By comparison the investigator's driver-interpreter, a government employee, earned 10,000 kyats a month). The carver may have exaggerated, as he said he would be paid 10,000 kyats (USD 22.73) for the piece he was currently working on, and it would take him a week to do it. Two other carvers who work together, one doing the crude shaping and the other the finer finishing work, said that they each make about 40,000 kyats (USD 91) a month, which seems much more likely.

A shop owner in Mandalay who employs three full time carvers said that they would earn from 30,000 to 40,000 kyats (USD 68-91) a month, depending on output. Three young 'undercarvers' in Mandalay said that they are paid about 500 kyats (USD 1.14) a day when they are working for a senior carver, and that they earn on average 15,000 kyats (USD 34) a month, still not a bad income by Burmese standards.

Martin (1997) estimated that there were 50 to 60 craftsmen in Mandalay in 1995 who carved mainly ivory, though would work in wood if business were slack. The situation seems to be little changed today, with perhaps a slight decline in numbers.

The overall interpretation of the number of ivory craftsmen indicator seems to be that first, demand for ivory has remained stable since the mid-1990s and second, Mandalay has reinforced its pre-eminence as the ivory carving centre of Myanmar at the expense of Yangon. This evidence combined with the 1995 to 2001 raw ivory price drop would suggest that there has been an increase in ivory supply to Mandalay.

Retail outlets and prices of worked ivory in Myanmar

Table 11 shows the number of outlets visited in the three cities and the number of ivory pieces seen. A total of 53 shops carried 5,796 pieces of worked ivory in Yangon and Mandalay. No ivory was found in Bago.

Table 11
Number of shops and ivory items seen for sale in Myanmar in February 2001.

City, town	No. of shops surveyed	No. selling ivory	No. of items
Yangon	337	34	3,438
Mandalay	56	19	2,363
Bago	28	0	0
Total	421	53	5,801

Most of the worked ivory in Yangon was concentrated in the south entrance of the Shwedagon Pagoda (15 shops) and in the central hall of the New Bogyoke Market (seven shops). One of the 15 shops in the Shwedagon Pagoda had three stalls, but since the name and owner of the three were the same it was counted as one. Two other pagodas carried small amounts of ivory as did three luxury hotels. Seven tourist boutiques scattered around the city were found that sold higher quality ivory items. The museum shops and airport had no ivory. About 220 souvenir outlets are found in the southern and eastern entrances to the Shwedagon Pagoda, and a further approximately l 00 craft shops are in the New Bogyoke Market.

Eleven of 45 souvenir shops in the eastern entrance of the Maha Muni Pagoda in Mandalay displayed ivory, as did six of the eight handicraft boutiques found in town. Two luxury hotels carried small amounts of ivory.

Some souvenir shops outside the main tourist pagodas in Bago used to sell ivory (Martin, 1997), but vendors during this visit said that they could not afford to buy ivory to sell now as prices had been rising over the past two to three years.

Shops must be registered with the government in order to sell worked ivory and other items that the government considers of economic importance (for example gems, gold, antiques). To export any of these products, except ivory, a buyer must carry a receipt from a registered shop. Because of CITES regulations, in order to export worked ivory a buyer has the choice of asking the vendor to write on the receipt that the piece(s) is/are made of bone, or of bribing the Customs officer, which is said to be a simple matter.

There was a great variety of larger pieces, because there is a conscious effort on the part of ivory carvers to develop a distinctive Burmese corpus of subjects, in addition to the usual classical Buddhist figures (Buddhas in various hand positions or *mudras* and Bodhisattvas, who are individuals worthy of becoming Buddhas, but choose to help suffering mankind) and the Chinese Buddhist and Taoist subjects such as Kwan Yin (the Buddhist goddess of compassion), Maitreya (Happy or Laughing Buddha), Long Life (represented by an old man with a beard), Immortals etc. The Burmese style is naturalistic and includes people from traditional life such as dancers, cane ball players, fishermen, hunters, women carrying water jars, old men and so on. There are also more formal figures such as Burmese style Buddhas, *nats* (spirits) and past kings. Carved tusks are very common and these are usually elephant bridges with lotus flower bases or scenes from the Buddha stories *(Jatakas).*

The smaller pieces (<10 cm) were usually smaller versions of the statuettes enumerated above, name seals, 3-6 cm elephants and tigers, cigarette holders, chopsticks and jewellery. One shop in Mandalay carried ivory pieces shaped in the form of the proximal end of human femur bones, which had been used as hip replacements in operations. Since they were now for sale in a tourist shop, ivory hip bones evidently were not a success! Table 12 shows the range of prices for various items.

Table 12
Retail prices for ivory items in Myanmar in February 2001.

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	1	45-57
		70
Buddha amulet	4	8
Ear-rings, pair		2-20
Necklace, small beads		5-9
Necklace, rosary large beads		90-100
Pendant, tusk	4	2
Ring		2-10
FIGURINES		
Crocodile	60	341
Elephant	2-4	2-35
Elephant towing a log with baby and mahout	10 x 12	600
	<5	7-35
Religious (Maitreya)	<5	70
	5-10	30-150
	10-20	68-380
	20-30	300
	30-40	450
TUSKS		
Carved	10-20	90-500
	20-30	175
	30-40	102-350
	40-50	250
	50-60	568
	60-70	700-4,000
	72	1,200-1,667
	140	2,045
MISC.		
Cigarette holder	6-10	4-10
Chopsticks, pair		20-60
Name seal	6	40-55
		38-60
Saki cup	5-7	9-13

* For final price after bargaining, deduct about 30-35%.
N.B. USD 1 = 440 kyats. No one changes dollars or other hard currency at the official and artificial rate of 6.2 kyats to the USD.

In Yangon the shop with three outlets in the Shwedagon Pagoda's south entrance displayed the highest number of ivory items, 508 pieces. The most ivory in Mandalay seen in one shop was 723 items in a boutique that has been in the ivory business for at least 40 years (it displayed a framed raw ivory import permit from Zanzibar dated 1963!). The cheapest worked ivory in Yangon was found in the Shwedagon Pagoda, followed by the New Bogyoke Market shops, then the boutiques. In Mandalay the large government-run store had by far the cheapest worked ivory, though all the pieces were small. Prices for similar items were about the same in Yangon and Mandalay. Uncarved elephant molars ranging from 15-35 cm in length sold in both cities from USD 35-100.

In Yangon the main buyers of worked ivory in order of importance were ethnic Chinese from Thailand, Hong Kong, Singapore, Malaysia and China, and Japanese. A Singaporean Indian had bought a USD 850 carved tusk for his daughter's wedding in one shop, and another vendor said that an Indian man from Chennai (Madras) came about twice a year to buy many worked pieces to take back to India with him to sell there. Few Europeans or Americans buy ivory, except for jewellery. Wealthy Myanmar army and government officials also buy ivory.

In Mandalay some vendors said that Italians, Spanish and Germans bought ivory, in addition to the majority East Asians. The Chinese and Japanese prefer the Kwan Yin, Maitreya, Long Life, etc. pieces, while in Mandalay one vendor said that Europeans like statuettes representing the Ramayana story in the Burmese naturalistic style, and Thais like those that represent a Buddha story from the *Jatakas.* Rich Burmese like the pieces showing dancing *nats* holding up Buddha. One vendor said that he makes some of the statuettes look old by boiling them in water containing tobacco leaves.

One large shop owner in Mandalay said that he does a good business at the Myanmar-China border. He sends name seals, chopsticks and smaller statuettes to Mu-se in quantity, where they cross the border into China in contravention of CITES to be sold in Shweli. This shop owner also has a new shop selling ivory in Yangon. Almost all vendors said that business was good. One in Yangon said that the main problem was that the increase in price of raw ivory was causing her to raise her worked ivory prices, which was slowing sales with Chinese people as she could no longer offer good discounts. She said that she charges Japanese about 40% more, thus the price rises had not affected business with them. Most vendors said that in spite of price rises for raw and worked ivory, the ivory business had been growing over the past three years or so.

In late 1995 Martin (1997) found 17 shops selling ivory at the Shwedagon Pagoda, which is essentially the same as this study (one ivory shop was seen in the eastern entrance as well in 2001). He found no hotels selling ivory, but some of them have started selling small quantities now, mainly jewellery and other little items. Martin (1997) found six shops selling between 200 and 400 ivory objects in total at the eastern entrance of the Maha Muni Pagoda in Mandalay. This survey found that the number had almost doubled to 11 shops carrying 406 pieces. Comparing Martin's (1997) Table of retail prices in Mandalay with prices for similar items in this study, it does not appear that retail prices have changed significantly from December 1995, in spite of vendors' claims to the contrary. Stiles also visited Myanmar in 1995, and in Mandalay two of the ivory workshop showrooms he visited then have expanded considerably in the number of items he saw displayed in 2001. The retail ivory indicators clearly suggest that worked ivory demand has been slowly rising over the past few years.

Burmese gong

Thailand

The legal position of the ivory trade in Thailand

Thailand acceded to CITES on 21 April 1983. The internal trade in Thai and foreign wild elephant products is illegal according to the Wildlife Reservation and Protection Act of 1960 (amended in 1992). Domesticated Thai elephants, however, are not included in this Act, but instead come under the Draught Animal Act of 1939 (along with cows, water buffalo and other livestock); this does not ban the possession or sale of ivory from Thai domesticated elephants (TRAFFIC, 2000a and Lair, 1997). According to the Director of the CITES Division in the Royal Forest Department, Manop Lauprasert, if an official tries to arrest an ivory trader or shopkeeper he will state that his ivory came from domesticated Thai elephants. Since the government is unable to distinguish the ivory types, the case will collapse in court. Lauprasert believes, unlike most others, that almost all the raw ivory in trade in Thailand does indeed come from Thai domesticated elephants, mostly dead ones. As will be documented later in this chapter, however, by far the most raw ivory used by Thai ivory carvers comes illegally (since 1990) from Africa and some from neighbouring countries. The majority of raw ivory from Thai elephants comes legally from domesticated elephants which have had their tusks pruned. Lauprasert does not accept that many tusks are pruned because most domesticated elephants are used for tourist shows or for displays, and he believes the customers like to see the full tusks (Lauprasert, pers. comm. 2001; Lauprasert, as quoted in the *Bangkok Post* (Anon., 2001b).

Large quantities of tusks have been recently imported into Thailand and have not been intercepted by the Thai authorities according to Thai conservationists. There have been extremely few prosecutions of people carving or selling items made from this imported ivory or from Thai wild elephant ivory. Over the past few years, much more illegal ivory has come into Thailand for the Thai artisans than for any other country in South and South East Asia.

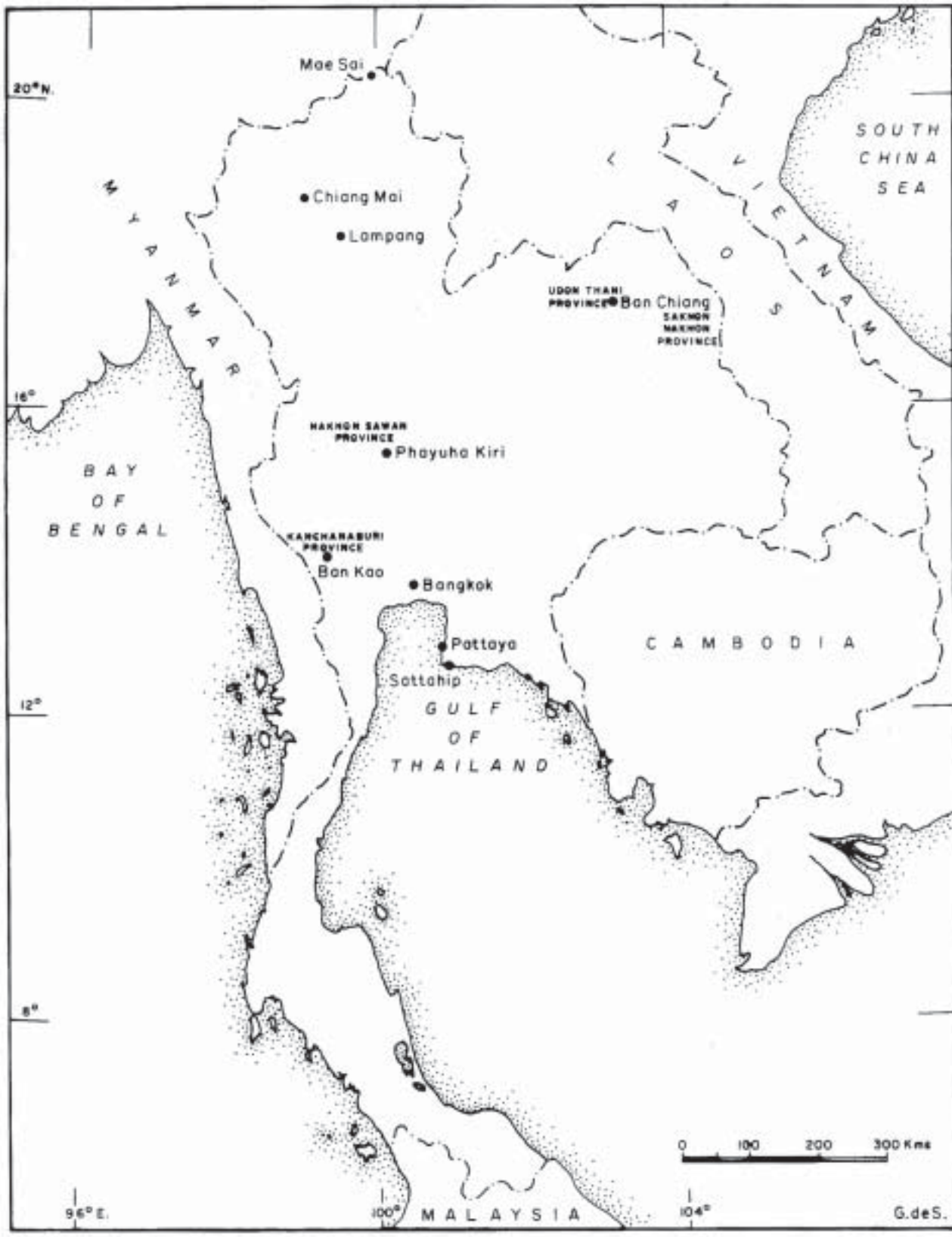
Introduction to Thailand

Field-work was carried out in Bangkok (7.2 million inhabitants) from 24 February to 4 March, 6 to 7 March and 13 to 15 March 2001; in Chiang Mai (175,000) from 8 to 12 March 2001; and the small town of Phayuha Kiri (about 200 km north of Bangkok in Nakhon Sawan Province) on 5 March 2001 (see map). These are the main ivory centres in Thailand.

Thailand's wild elephant population numbered around 1,650 in 2000 (Kemf and Santiapillai, 2000) with perhaps half located in the western part of the country. There are more domesticated elephants than wild ones: about 2,500 in early 2001 (Richard Lair, pers. comm.), but this is down from published government estimates of 3,800 in 1994 (Lair, 1997).

Some of the oldest ivory objects have been found in Thailand. At the village of Ban Chiang in Udon Thani Province ivory beads, presumably for necklaces, have been excavated which date back to 3,600-200 BC. Undecorated ivory bracelets have been excavated at a site called Ban Phak Tob, also in Udon Thani Province (St Aubyn, 1987). In the village of Ban Kao in Kanchanaburi Province archaeologists found ivory cylindrical pieces with the tops carved with concentric circles; these date from 2000-1600 BC. At a site called Ban Sangdu in Sakhon Nakhon Province an ivory amulet has been found which is 2,500 years old (Nakhonphanom, 1993).

The National Museum in Bangkok has the largest public collection of ivory in the country. The ivory works of art on display illustrate the high quality of workmanship by Thai artisans and the diversity of carved items. Most of the works of art date from the 19th and early 20th centuries as many of the earlier objects have not survived. The most important items on display are: elaborately carved tusks, boxes, scent containers, Buddhas, boy dolls, palanquins, ceremonial daggers, swords, howdahs, cosmetic containers and parts for Thai classical musical instruments. It would appear from the number of full worked tusks found in the National Museum and the Royal Elephant National Museum (also in Bangkok) that Thai ivory carvers in the 19th and early 20th centuries specialized in producing magnificent carvings on large tusks. There is one huge pair of tusks on display in the Royal Elephant National Museum that measures 2.57 m and 2.90 m in length.



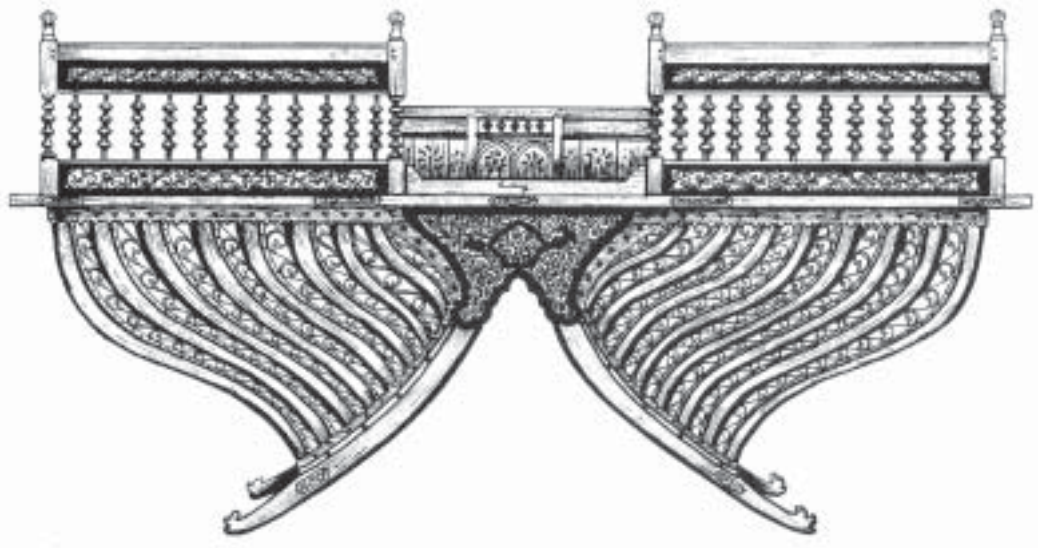
Map of Thailand

During the 19th and early 20th centuries there were two main areas where the ivory craftsmen worked. Bangkok was one location where King Rama V (who reigned from 1868-1910) took a personal interest in ivory carving by establishing an ivory container contest, which categorized 17 different styles of container, each of which was registered. The other main location was in the Chiang Mai area where ivory carvers produced a northern Thai style of craftsmanship. They specialized in carving full tusks, Buddhas and howdahs (Mongkol Samransuk, Curator, the National Museum, Bangkok, pers. comm., 2001).

Sources and prices of raw ivory in Thailand

Thailand has been both an importer and exporter of raw ivory for centuries. In the 13th century some of the country's tusks were exported to China. The Commissioner of Foreign Trade at Ch'uan-Chou in Fukien Province in south-east China wrote in the early 13th century that these tusks were small, weighing from 6.7 kg to 20 kg, and were of a reddish tint. Tips of tusks were also sent to China from Thailand at this time, but could only be made into scent holders (Hirth and Rockhill, 1911). In the 19th century the Chinese were still importing tusks from Thailand; 18,000 kg were exported to China on eight ships in 1821 (Srikrachang and Jaisomkom, 2001). Japan has also been a major importer of Thai tusks for a long time. In 1663 Japan brought in one shipment of 3,097 kg from Thailand. In the 1880s Japan imported most of its tusks from Thailand and other South East Asian countries: in 1885, 89% of Japan's raw ivory came from these places and the declared import price was USD 2.96/kg (Japan Government, 1886).

Thailand was also an importer of raw ivory in the latter part of the 20th century, indicating that local ivory could no longer satisfy demand. From 1957 to 1997, Thailand imported legally 43,527 kg of elephant ivory and 1,991 kg of mammoth ivory from Russia. The major countries supplying the elephant tusks were Sudan (20%), Kenya (19%), Hong Kong (12%), South Africa (7%), Zaire (5%) and Myanmar (5%) (Thai Customs Statistics as recorded in Luxmoore, 1989, and Srikrachang and Jaisomkom, 2001). A considerable amount of additional raw ivory was imported illegally, from Myanmar after 1983 (when Thailand joined CITES) and from Africa from 1990. Shop owners admitted to buying ivory from traders who had brought their consignments into Thailand illegally. There is also strong indirect evidence that tusks have come recently into the country illegally, mostly from Africa, based on shipments of raw ivory which were intercepted by the Thai authorities from 1995-2000 (see Table 13). For example, the April 2000 confiscation at Bangkok airport consisted of 112 pieces of raw ivory, which were put into iron boxes, declared as gems and sent from Zambia. A citizen of Guinea came to Bangkok airport to collect the three boxes (Anon., 2000). Obviously, other shipments were successfully smuggled into Thailand over this period. Almost all the tusk confiscations by the Thai authorities in the 1990s occurred at Bangkok airport. According to the curio shop owners, a lot of African ivory came by ship, as they say port officials are more corrupt. One shopkeeper estimated that 500 kg of tusks were transported from the port of Sattahip (just south of Pattaya) to Phayuha Kiri in 1997 (Srikrachang and Jaisomkom, 1998).



Thai ivory howdah

Table 13
Ivory seizures in Thailand, 1994-2000.

Date	Type	Quantity	Place confiscated
Jan 1994	Ornaments	75 kg	Hua Lum Pong Posts and Telegraph office
Jan 1994	Ornaments	28,128 items	Hua Lum Pong Posts and Telegraph office
Feb 1994	Raw	20 pieces	Bangkok airport: Customs office
Feb 1994	Cut pieces	739 pieces	Bangkok airport: Customs office
Mar 1994	Ornaments	7.23 kg	Hua Lum Pong Posts and Telegraph office
May 1994	Carved	9 items	Bangkok airport: Customs office
Sep 1994	Tusks	225.9 kg	Police
Sep 1994	Tusks	81 pieces	Bangkok airport: Customs office
May 1995	Ornaments	578 items	Police
May 1995	Raw	6 pieces	Bangkok airport: Customs office
Jul 1995	Raw	153 pieces	Police
Mar 1996	Raw	4 pieces	Bangkok airport: Customs office
Mar 1996	Raw	16 pieces	Bangkok airport: Customs office
Jul 1996	Raw	4 pieces	Bangkok airport: Customs office
Mar 1998	Raw	450 pieces	Bangkok airport: Customs office
April 2000	Raw	112 pieces (of 488 kg)	Bangkok airport: Customs office

Sources: Srikrachang and Jaisomkom, 2001, and Anon., 2000.

What are the present sources for raw ivory for the Thai ivory industry? Probably the largest is illegal imports. Several curio shop owners in Bangkok told the investigator that most of the tusks imported into the country are still coming from Africa. One said that a middleman offers him new stocks of African tusks about twice a year. Most new tusks, however, are offered to the wholesalers, craftsmen and shop owners in the main ivory crafting centre of Thailand, Phayuha Kiri. Either they go to Bangkok (Chinatown was specifically mentioned) to buy the tusks or traders from Bangkok go to Phayuha Kiri. There are a lot of tips of ivory available in Phayuha Kiri, The shop owners claim that although most of these are from Thai domesticated elephants, some come from Africa (as these tusks are often chopped up for easier concealment).

Ivory is still also smuggled into Thailand from Myanmar. The owner of one of the shops selling the largest amounts of ivory items in Chiang Mai produced an advertisement in the early 1990s (which was still being distributed in 2001). It stated "We use only the finest quality ivory tusk imported under licence control from Burma". Some tourists are no doubt tricked into believing that Thailand is importing this ivory legally, but the Thai authorities have given no such permits. The Myanmar border town of Tachilek opposite the Thai town of Mae Sai has been a major supplier of ivory to Thai traders for at least a decade. Some of this ivory was coming to Phayuha Kiri, according to the shopkeepers in 1995 (Srikrachang and Jaisomkom, 1998). In 1998 one of the investigators (EM.) visited Tachilek and counted 34 wildlife shops aimed at Thai wholesalers and retailers. There were over 1,456 ivory items (mostly name seals, bangles, pendants, small elephant carvings and rings in that order of importance) for sale. Many of the shop managers and other traders offer raw ivory as well to the Thais (especially those of Chinese origin). Smaller amounts of ivory were on sale in 1998 in another Myanmar town bordering Thailand, Myawaddy, also supplying the Thai market (Martin and Redford, 2000). A few tusks come to Thailand from Laos and Cambodia, according to traders in Indochina.

After imported tusks, another source for raw ivory is domesticated elephants. About 600 out of Thailand's 2,500 domesticated elephants are adult males with tusks (Lair, pers. comm., 2001). Every few years, as elsewhere in Asia, most of these elephants have their tusks pruned (also referred to as tipping). The reasons are to earn money from their sales, to prevent the tusks from being stolen, to improve the mahout's safety, to even the tusk lengths for aesthetic reasons, and to prevent crossed tusks or splitting lengthwise for the animal's comfort. Many of these domesticated elephants are privately owned, the largest number in Asia after Myanmar.

One businessman alone owns about 130, another owns 120 and a third owns 83! Female elephant tushes are too small to prune, but when the animals die in Thailand the tushes are sometimes removed and sold.

There has been a serious problem in Thailand with gangs of thieves forcibly cutting the tusks from government and privately owned domesticated elephants. From 1985 to 1994, 21 domesticated elephants owned by the Forest Industrial Organization had their tusks illegally removed (Srikrachang and Jaisomkom, 2001). Gangs of four to ten people chain an elephant to a tree and using a saw, cut off most of the tusk up to or even into the pulp cavity. Often the remaining part of the tusk becomes rotten and the elephant can feel great pain. These thefts of tusks from live domesticated elephants were common from the 1980s until the mid-1990s. One elephant specialist estimates that in the late 1980s about 70% of the domesticated elephants in Thailand had their tusks removed by criminal gangs (Prasop Tipprasert, pers. comm., 2001). Eventually, owners of elephants took strict measures to protect their animals. At the Thai Elephant Conservation Center near Lampang, for example, the elephants are chained at night and the tuskers are placed close to the mahouts' houses for increased protection (Lair, pers. comm., 2001).

Another source of raw ivory is from poached wild Thai elephants. From 1992 to 1997, 24 male elephants were known to have been illegally killed for their tusks (Srikrachang and Jaisomkom, 1999). Obviously more were killed that went unreported.

Government stockpiles of tusks are not made available officially to traders. There are, however, private stockpiles of ivory available to carvers, sometimes inherited. In 1992/1993 the Royal Forest Department allowed Thais to register their raw ivory in order to legalize its possession (to prevent the possibility of officials confiscating it for whatever reasons). Not surprisingly, residents of Bangkok declared the largest amount: 3,432 pairs and 1,451 single tusks. Thais in other parts of the country declared a total of 3,301 pairs, 582 single tusks, 9,519 pieces of tusks and 673 kg. The Nakhon Sawan Province, where the main ivory artisans are located, registered 267 pairs of tusks, 9,075 pieces and the previously mentioned 673 kg (Srikrachang and Jaisomkom, 1999 and 2001).

The wholesale prices for tusks are roughly the same throughout Thailand. Surprisingly, most craftsmen make no distinction between African and Asian ivory and thus the prices were the same. This is because the prices of Asian tusks had been lowered due to the larger amounts of cheaper African ivory imported into the country. In fact, the price of raw ivory wholesale in Thailand is one of the cheapest in Asia. The wholesale price in early 2001 for an average tusk of about 5 kg was 7,000 baht (USD 159)/kg. This price ranged from 4,000 baht (USD 91) to 8,000 baht (USD 182) depending on quality, according to curio shop owners, workshop owners and craftsmen. Small tusks cost about 3,000 baht (USD 68)/kg, while tiny offcuts cost 1,000 baht (USD 23)/kg.

Ivory workshops in Thailand

By 1979, the main centres of ivory craftsmanship were Phayuha Kiri and to a lesser extent Bangkok. Some of the Thai carvers had gone to Hong Kong to improve their skills in the art of ivory carving, as the industry expanded tremendously in the 1970s due to the huge increase in foreign tourists from 628,671 in 1970 to 1,858,000 in 1980 (Anon., 1995). In 1979, the average ivory craftsman earned USD 75-150 a month. To make even more money, some of the craftsmen sold the ivory powder for USD 1.50/kg to traditional Chinese medicine shops in Bangkok (as did their colleagues in Singapore). The pharmacists burned the powder and sold it to the customers to lower fever (survey by Esmond and Chryssee Martin in Bangkok in 1979).

The majority of ivory craftsmen in Thailand today live in and around the country's main ivory carving centre, Phayuha Kiri. It is a traditional small town consisting of one main street with mostly double storey buildings. Eleven of the 12 ivory shops, which sell mainly wholesale but some retail ivory items, are along this street. Few tourists ever visit the town and none of the shopkeepers speaks English; there are no signs in English although some labels are in Chinese; even the business cards are only in the Thai language. There are at least 50 craftsmen working in ivory (almost all ethnic Thais), mostly part time and mainly from their own homes with some artisans attached to the shops. Luxmoore estimated that there were 50-100 ivory craftsmen in 1989 (Luxmoore, 1989). For how long this small town has been an important ivory centre is not clear, but the ivory industry here has certainly been active for over 40 years. According to Luxmoore, one ivory shop has been there for about 200 years.

The shopkeepers in Phayuha Kiri were extremely reluctant to give out information on their ivory craftsmen. One reason given was their fear of the tax authorities. Although some work for shopkeepers, most of the craftsmen work on a freelance basis, obtaining their ivory from traders

or shopkeepers and selling their items to one or more shops in the town or to other buyers, mostly from Bangkok. Over 85% are jewellery items that are not carved, but are quickly made using electric powered drills and are mass-produced. Consequently, the artisans' earnings are not high. One of the prominent craftsmen admitted that he earned 10,000 baht (USD 227) a month making beaded ivory necklaces, while a woman worker polishing ivory name seals (requiring little skill) earned about 3,900 baht (USD 89). Almost all the items made out of ivory are small as there is no longer a demand by foreign customers for pieces larger than 15 cm.

The second main ivory carving centre in Thailand is in and around Bangkok. There are two types of ivory craftsmen: most produce jewellery, statuettes and other items, while some others carve names (hallmarks) on seals. No shop owner or craftsman could give a convincing figure of the number of ivory craftsmen in and around Bangkok, but nobody stated there were more than 20. Most work freelance from their homes. One Thai of Chinese origin admitted to owning a small ivory factory making bangles, pendants, a few sculptures and name seals for wholesale and retail sale for his shop in The Old Market in Chinatown. A master craftsman from Yunnan Province in southern China has set up a retail shop in the World Trade Center in the middle of the city displaying for sale 23 statuettes and 290 name seals. These seals are priced from 1,300 baht (USD 29.55) for a personal one of 2.5 x 7.5 cm to 12,000 baht (USD 273) for a business seal of 12.5 cm in length. He also carves names onto his seals. He charges 500 baht (USD 11.36) for a simple hallmark, 1,000 baht (USD 22.77) for an intricate one, and a maximum of 5,000 baht (USD 114) for a very complicated hallmark. In a colourful brochure, printed in Chinese, Thai and English, the master craftsman boasts that he can do "miniature carving on a piece of rice-shaped ivory with 560 Chinese characters on it, on whiskers or any hair-like material with a poem on it, or on a piece of 3 x 4 cm ivory with a story (more than 10,000 Chinese characters)".

Chiang Mai, as mentioned previously, was formerly an important ivory carving centre, but no longer. Luxmoore in 1989 found only two companies which still employed ivory craftsmen: Ivory House with two workers and Siam Gifts with five workers; there were also some men crafting from their homes (Luxmoore, 1989). In Siam Gifts they carved mostly Myanmar ivory as they believed it was superior to African ivory because it came from living elephants (the tips) and not from poached African elephants. In early 2001 Siam Gifts had no ivory workers, as according to the manager, the six craftsmen employed by 1990 had moved to Ivory House in 1991. Ivory House had ten craftsmen as late as 1996, but in that year they all left to carve other materials for the owner of another shop. They said that ivory tusks were becoming too difficult to obtain. Siam Gifts and Ivory House were still displaying large quantities of ivory items, mostly made before 1997.

It is not possible to obtain an accurate figure on the amount of ivory consumed by the Thai craftsmen on a yearly basis. The shopkeepers were interviewed in the 12 shops in Phayuha Kiri who have by far the largest quantity of ivory items for sale in Thailand to find out how much raw ivory was crafted in 2000. Six of the shopkeepers gave figures, admitting to an average per shop of 93 kg of raw ivory used in 2000. If the other six shopkeepers also used the same amount, then the total for the 12 shops would have been 1,116 kg of raw ivory for 2000. This is a minimum figure only. Many of the items offered for sale in these shops are bought from craftsmen, not employed by these shops, who get their raw ivory from elsewhere. It was not possible to obtain figures on the amounts of raw ivory used annually in Bangkok, but the amount of ivory used by craftsmen in Bangkok is considerably less than in Phayuha Kiri. Most Bangkok shopkeepers obtain their ivory items from Phayuha Kiri.

Retail outlets and prices for worked ivory in Thailand

In 1979 many of the Bangkok curio shops sold a wide variety of ivory items (see Table 14). The main buyers were Japanese and Europeans, especially the West Germans. Besides these retail sales, Thai businessmen also exported fairly large quantities of worked ivory objects. For example, in 1978, 3,530 kg of such items worth wholesale USD 507,856 were exported mostly to the Federal Republic of Germany (2,030 kg) and the UK (627 kg) (Thailand Government, 1978).

Table 14
Retail prices for Thai-made ivory items in Bangkok in 1979.

Item	Size	Starting USD price
Bangle	small	11
	large	22
Chopsticks, pair		8
Cigarette holder	10 cm	15
Comb	medium	17
Dice, pair	small	1.48
Dinner gong	20 cm	150
Figurine, Buddha	2.5 cm	1.10
Figurine, woman	40 cm	600
Figurine, elephant	7.5 cm	60
Pistol handle grip		47
Tusk, carved	60 cm	2,000

N.B. USD 1 = 20.3 Thai baht.
Source: Survey by Esmond and Chryssee Martin in September and October 1979.

In Bangkok today there are many hundreds of antique and curio shops with some selling ivory for the large number of foreign tourists who visit the city every year; over 9.5 million visited Thailand in the year 2000. Generally, Thais do not put a high priority on owning carved ivory or ivory trinkets, preferring to invest in gold and gems. Some Thais, especially ethnic Chinese, however, own pairs of tusks which they exhibit in their homes and businesses as a sign of prosperity, privilege and good fortune.

From December 2000 to February 2001 a survey of 111 four and five star hotels, eight malls and department stores, seven souvenir and tourist shops, and three "tourist spots" was carried out by WWF-Thailand to document wildlife products for retail sale. A total of 26,889 ivory items was counted for sale in Bangkok with an estimated value of 139,363,450 baht (USD 3,167,350). The next most numerous wildlife products found for retail sale were made from crocodiles (3,611 items) and snakes (3,190 items). Interestingly reptile products are only a fraction of the number and value for ivory objects for sale (WWF-Thailand, 2001, and Anon., 2001 a).

Martin's February/March 2001 survey in Bangkok was carried out in all the tourist areas. A total of 164 antique and curio shops, many in the hotels, was found offering for sale 38,510 ivory items (see Table 15). Most of them are in the following locations in the city: Oriental Place, New Road, River City, Silom Road, Yaowaraj Road (Chinatown), Siam Square, World Trade Center, Amarin Plaza, Sukhumvit Road and Shangri-La Lane. There were also curio shops in other hotels dispersed elsewhere in the city.

Table 15
Number of shops and ivory items seen for sale in Thailand in February/ March 2001.

City, town	No. of shops surveyed with ivory items	No. of items
Phayuha Kiri	12	39,649 (mostly wholesale)
Bangkok	164	38,510
Chiang Mai	18	10,020
Total	194	88,179

There are two general types of ivory items offered for sale in these 164 shops: antiques and new pieces. The number of shops specializing in antiques was around 61. The minimum number of antique ivory items that was offered for sale in these stores in early 2001 was 622. Of these an estimated 39% were carved in Thailand, 36% in China, 8% in Myanmar, 7% in Japan, 4% in Vietnam, and the remaining 6% in Laos, Indonesia, Europe, Cambodia and India, in that order, according to the shopkeepers. Most of these stores are located in and around Oriental Place, River City and New Road. These shops display far fewer items than those offering new pieces, but the quality of carving is far superior to the modern objects that largely consist of mass-produced jewellery. Most of the antiques are exquisitely carved figurines of humans and animals (including some outstanding pigs from China and Japan), fans, boxes, carved tusks, barges (boats) and netsukes. Curiously, there were few old Indian items, except for bangles, and almost none from Europe or Africa. There were, however, a few antiques from Vietnam (ear-plugs and combs), Laos (ear-rings and ear-plugs) and Cambodia (necklaces), according to the vendors. The old Thai items include mostly elephants, Buddhas, boxes, human figurines, human penises, carved tusks, ear-plugs and Thai chess pieces.

Most of the valuable ivory antiques were made in China, Japan, Myanmar and Thailand. The three most expensive items for sale in Bangkok in February and March 2001 were: a 55 cm long reclining Buddha with two monks for USD 34,000, either made in China or Thailand (see cover); a 90 cm tall female sculpture for USD 20,455, also from China or Thailand; and a 17 cm tall Japanese father and son for USD 16,000. Other valuable Thai objects were: a Thai chess set for USD 6,818, and a bust of King Rama V, 35 cm high, for USD 5,682, both carved in the late 19th century.

The most expensive ivory items in Bangkok are all beautifully displayed in modern-designed shops that are fully air conditioned, skilfully lit and employ multi-lingual attendants to serve the customers. This is in sharp contrast to the simple wholesale/retail shops in Phayuha Kiri.

The other general type of ivory for retail sale, new pieces, are mostly mass-produced, coming to Bangkok from Phayuha Kiri in very large numbers. Bangkok shops sell more ivory items retail than any other city in South or South East Asia. Over 85% is jewellery. The most popular are bangles, ear-rings, necklaces, pendants and rings (see Table 16). Other numerous items for sale are chopsticks, cigarette holders, ear picks, elephant sculptures and name seals. The shop with the largest number of items, located on Silom Road, offered 3,159 items. The shop with the second most ivory offered 2,162 items. The least expensive items in a single shop were ear-ring studs (USD 1.14), thin rings (USD 1.36) and small pendants (USD 1.70).

Table 16
Retail prices for Thai-made ivory items in Bangkok in February/March 2001.

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	0.6	18
	1.25	56
Ear-ring	1	6
Ear-ring stud	1 .25	1
Necklace, beaded	0.3	18
	2.5	109
Pendant	2.5	4
Ring	0.6	9
FIGURINES		
Buddha	1.6	7
	5	91
Elephant	9	68
TUSKS		
Carved	90 (4 kg)	1,932
Polished, pair	(20 kg)	13,636
MISC.		
Chopsticks, pair	22	57
Cigarette holder	10	39
Ear pick	7.5	4
Human penis	20	341
Letter opener	15	18
Name seal	7.5 x 2.5	41
Tiger tooth	5	14

* For final price after bargaining, deduct about 25-30%.
N.B. USD 1 = 44 Thai baht.

Cigarette holder, rings, pendants, bangles and a necklace

According to the owners, managers and shop assistants in the Bangkok antique and curio shops, the main buyers of ivory items are Americans, Europeans and Japanese followed by Taiwanese. This corresponds roughly with the main nationalities of visitors to Thailand, with the exception of the Malaysians (both of Malay and Chinese origin) who cross over the international border into southern Thailand in large numbers to visit the entertainment areas, but do not buy ivory items.

In Chiang Mai, unlike Bangkok, the hotels with their surrounding shopping centres have few ivory items on sale, although it is the second largest tourist city in the country. Instead, there are nine shops on Sankamphang Road a few kilometres east of the city centre which offer 80% of the 10,020 ivory items for sale in Chiang Mai (see Table 17). The shop selling the most items is Ivory House, as mentioned earlier, which displayed 4,612 ivory objects, mostly bangles, necklaces, pendants, rings, and other small items, made in Thailand. According to the manager, the main clients are Hong Kong Chinese, Malaysian Chinese, Singaporeans and Taiwanese; there are a few European buyers. One reason that most of the buyers are of Chinese descent is that the shop also sells birds' nests with the labels only in the Chinese language that attracts Chinese customers. Business is now more profitable for selling birds' nests than ivory objects at this shop.

Table 17
Retail prices for Thai-made ivory items in Chiang Mai in March 2001.

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	0.6	27
	1.25	59
	2.5	86
Ear-ring	1	3
Necklace, beaded	0.5	23
Pendant	3	6
Ring	0.6	3
FIGURINES		
Animal	2.5	14
Buddha	2.5	11
Elephant	2.5	14
TUSKS		
Polished	(580 g)	545
	(800 g)	795
MISC.		
Chopsticks, pair	22	80
Cigarette holder	10	41
Ear pick	3 x 7.5	4
Name seal	7.5 x 1.25	41
	7.5 x 2.5	80
Tiger tooth	5.6	14

* For final price after bargaining, deduct about 25-30%.
N.B. USD 1 = 44 Thai baht.

The most expensive ivory item for sale anywhere in Thailand was found in a shop on Chiang Mai's Sankamphang Road, a 45 cm long junk, supposedly 200 years old, which was made in China, but was bought recently in Myanmar. The price was USD 47,000. The second highest price in Chiang Mai was for another Chinese sculpture of an old man 45 cm tall for USD 18,500.

Chiang Mai is full of fishbone and resin items, also made into jewellery and sculptures. The shopkeepers generally do tell the customers which pieces are real ivory, although they sometimes mix them in the same display cases with the lower priced and more crudely made fishbone and resin objects.

In Phayuha Kiri, although most of the ivory is sold wholesale (it is the largest wholesaling centre in Thailand), some is available retail in the 12 shops. Besides ivory, some of these shops sold bronze religious statuettes, marble items and bone jewellery, sometimes very similar in appearance to ivory (but the shopkeepers specified which was which). Bone jewellery was also common in the early 1990s (Nakhonphanom, 1993). Some Asian tourists, such as Chinese, Japanese and Taiwanese, occasionally come to this small town, but their purchases of ivory items are small. Most ivory objects for sale are beads, Buddha figurines, ear picks, ear-rings and pendants (see Table 18).

In total there were 39,649 ivory items for wholesale and retail sale in the 12 shops in Phayuha Kiri (just a little higher than for Bangkok although the items were mostly smaller in Phayuha Kiri). Very little is bought retail by tourists as it is not economic for a tourist to go there just to buy some ivory. The largest number of ivory items in one shop was 10,698. The second largest number of items in a shop was 6,815. These figures are so large because they are mostly for the wholesale trade, and most are small items.

Table 18
Wholesale prices for Thai-made ivory items in Phayuha Kiri in March 2001.

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	1.25	18
	2.5	59
Broach	5 x 5	3
Ear-ring	1	2
Necklace	0.3	5
Pendant	5 x 5	3
FIGURINES		
Buddha	3.7	2
	9	36
Elephant	5	27
	9	70
Woman	20	409
	10	57
	15	119
Tiger	10	11
MISC.		
Cigarette holder	10	6
Ear pick	7.5	0.45
Chopsticks (pair)	22	27
Human penis	3.7	2
Name seal (plain)	7.5	5
Name seal (carved)	7.5	15
Tiger tooth	5	2

* As most ivory is sold wholesale, bargaining by the investigator was not attempted.
N.B. USD 1 = 44 Thai baht.

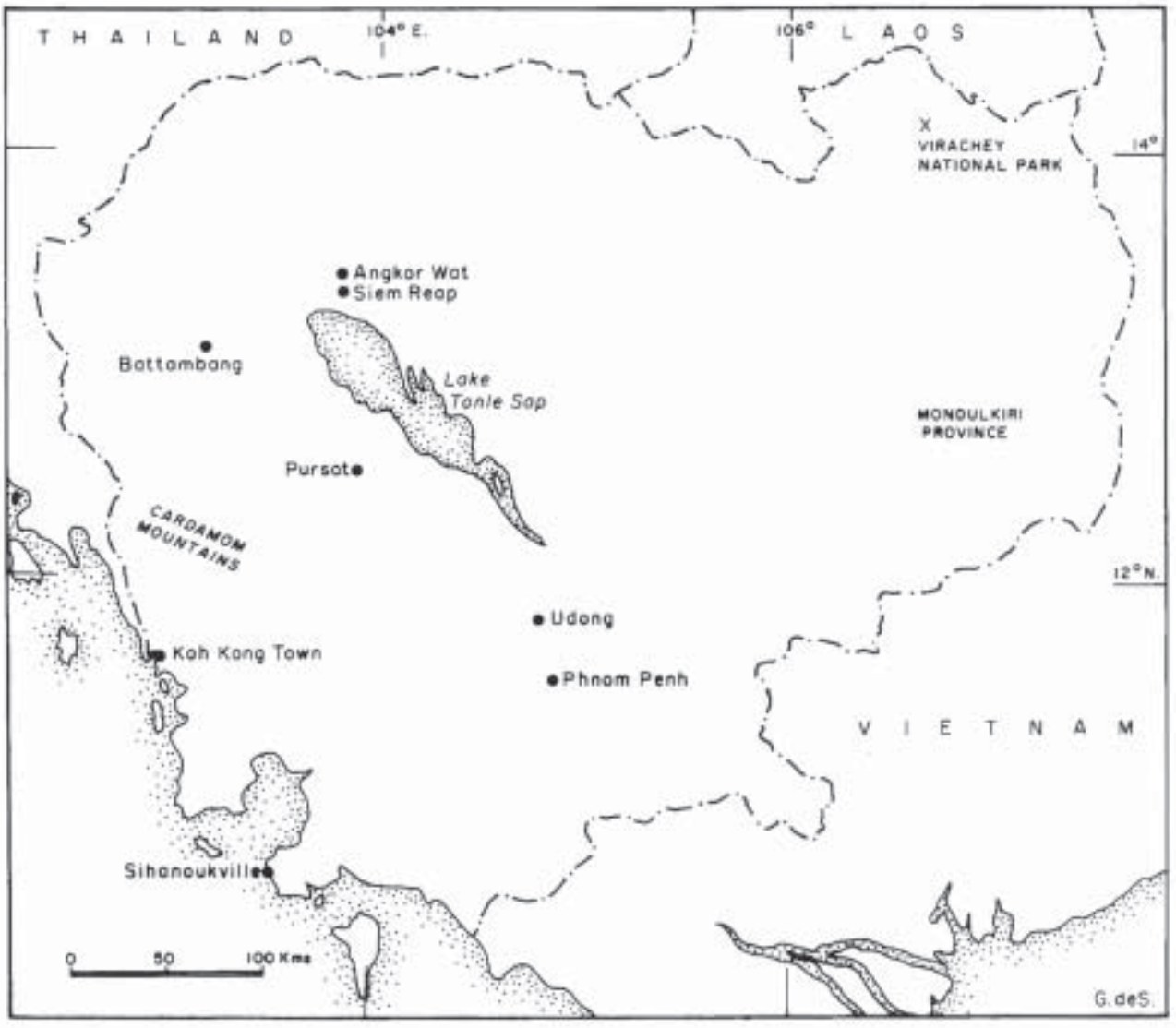
The managers and owners of the curio shops in Bangkok put a huge mark-up on the goods they buy wholesale in Phayuha Kiri. For example, a cigarette holder, which costs 280 baht (USD 6.36) in a Phayuha Kiri shop, is offered for sale in Bangkok for 1,700 baht (USD 39). Tiny ear-rings, which are only 85 baht (USD 1.93) in Phayuha Kiri, are 250 baht (USD 5.68) in Bangkok. A 7.5 cm pair of ear picks, which cost only 20 baht (USD 0.45), may be marked up ten times in some Bangkok curio shops.

Cambodia

The legal position of the ivory trade in Cambodia

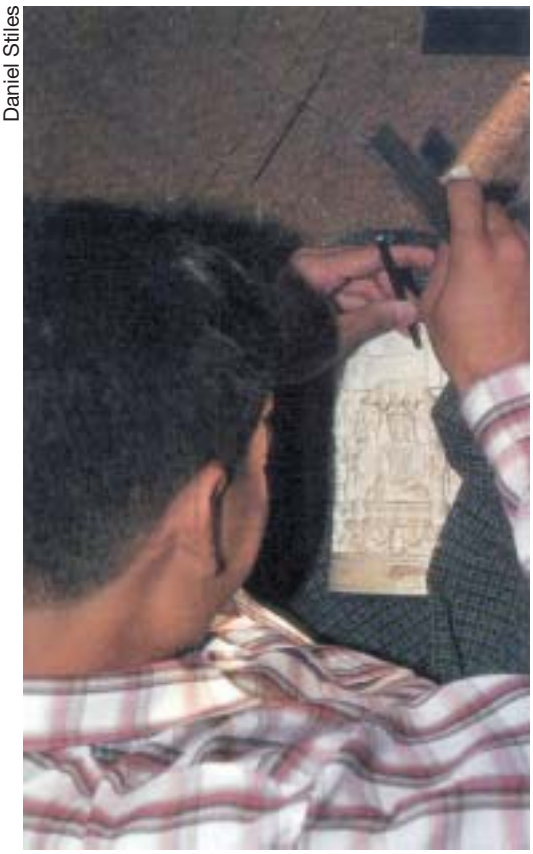
Cambodia signed the CITES Treaty on 2 October 1997, but the National Assembly had not yet ratified the Treaty by January, 2001 (Anon., 2001c). The internal trade in new ivory was declared illegal in 1994 when the Ministry of Agriculture, Forestry and Fishery (MAFF) issued Declaration 359 of 1 August 1994, which also banned all hunting in Cambodia. The domestic trade in old (presumably before 1994) elephant products was not prohibited (Sanderson, 2001). On 20 August 1996, a joint declaration by the Ministry of Environment (MoE) and MAFF prohibited in Article VI all sales, trade, harvest and transport of live wildlife (Anon., 2001c), but did not outlaw the sale of dead animal products. Therefore, at the time of this March 2001 survey, commerce of elephant products in Cambodia was legal for "old" items, but not for new ones.

Over the last few years, there has been no evidence of raw ivory being imported into Cambodia, but some domesticated elephants have been moved illegally into Cambodia from Vietnam and Laos and some have had their tusk tips cut off. The government has not arrested many traders or shopkeepers buying or selling new ivory items because of a shortage of trained manpower to carry out raids, lack of guidance by the government authorities and corruption between officials and private businessmen (Baird, 1996; Martin and Phipps, 1996; Sun Hean, 2000; Global Witness, 2001; and Sanderson, 2001).



Map of Cambodia

Daniel Stiles



This apprentice ivory craftsman works for one of the largest ivory outlets in Mandalay, Myanmar.

Daniel Stiles

Such shops, selling lots of ivory jewellery, are common in the Maha Muni Pagoda, Mandalay in Myanmar.

Daniel Stiles

These items are typical Burmese-style ivory carvings for sale in Mandalay, Myanmar.

Chryssee Martin

In Bangkok most of the ivory pieces for sale consist of jewellery, but in expensive shops there are larger items, including elaborately carved figurines and bridges.

Esmond Martin

This elephant in Angkor Wat, Cambodia, has had the tips of his tusks recently removed.

Chryssee Martin

These ivory objects were recently carved in Thailand; the rhino (15 cm long) was priced at USD 455 while the penis was on sale for USD 295.

Esmond Martin

Phayuha Kiri, the main ivory crafting centre in Thailand. Most items are mass-produced, especially jewellery.

Esmond Martin

Outstanding ivory figurines, such as this one for sale in Bangkok, are becoming rare in Thailand today.

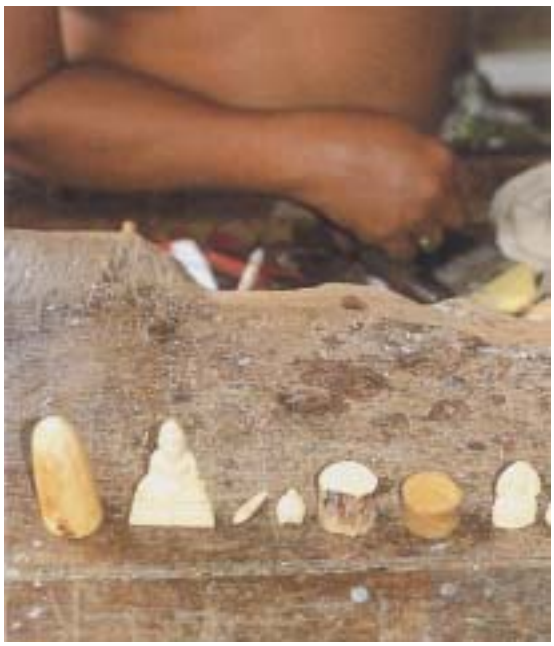
Esmond Martin

Phayuha Kiri in Thailand had more ivory objects for sale in early 2001 that anywhere else in this study, although most are small items.

Esmond Martin

Ivory items made in Phayuha Kiri in Thailand are mostly sold wholesale to Bangkok traders.

Esmond Martin



In Cambodia, ivory Buddhas such as these made in Phnom Penh in early 2001, are rare nowadays.

Esmond Martin

Most Buddhas for sale in Cambodia are made of bone which is cheaper for Cambodians, the main buyers. The two elephant tails were priced at USD 110 each.

Esmond Martin

This elephant trunk tip was on sale for USD 60 in Phnom Penh as a Cambodian medicine to cure skin injuries. This was the only trunk tip seen for sale by investigators anywhere in Asia.

Introduction to Cambodia

Field-work was carried out in Phnom Penh (1 million inhabitants) from 16 to 20 March, 22 to 23 March and 27 to 30 March; in the town of Sihanoukville (16,000 people) on 21 March; and in the town of Siem Reap (12,000 people) from 24 to 26 March 2001 (see map).

There were an estimated 250 wild elephants in 2000 according to the IUCN Asian Elephant Specialist Group (Kemf and Santiapillai 2000) and in early 2001 there were an estimated 250-330 (Hunter Weiler, elephant researcher for Fauna and Flora International, pers. comm., 2001). The number of domesticated elephants in early 2001 was an estimated 162 (Weiler, pers. comm., 2001).

Art historians do not know when ivory carving first started in Cambodia. In "The House for the White Elephant" on the grounds of the Royal Palace in Phnom Penh are four howdahs, inlaid with ivory, which were constructed in the 17th century in the former capital, Udong. In the same building are displayed three other ivory inlaid howdahs that were made in Phnom Penh in the 19th century. Inside "The Silver Pagoda", also in the Royal Palace compound, are a 45 cm high pagoda made of wood and ivory that was carved around 1925; a 15 cm high ivory Buddha, made at the same time in Phnom Penh; and four small ivory boxes from Phnom Penh, crafted 40 years ago. Another building, called "Artefacts for Royal Procession", houses five undated howdahs and five palanquins, all partly constructed out of ivory.

The National Museum in the capital displays two 19th century howdahs made of wood, wicker and ivory; one royal palanquin made in the 19th century, from wood and ivory with gold gilt; and another royal palanquin for the Queen Mother of King Norodum (who reigned from 1860 to 1904), constructed probably in Udong from wood, palm leaves and ivory. The use of ivory for luxury items probably dates further back than the 17th century, but there are no earlier examples on public display in Phnom Penh.

Sources and prices of raw ivory in Cambodia

From at least the lst century AD until the middle of the 19th century, wildlife products, including ivory, were major items of trade within Cambodia and beyond. For example, during the famed Angkor period, a Chinese official named Chou Ta-Kuan visited Angkor in 1296 and 1297 and wrote that the most sought-after products in Cambodia, presumably for export to China, were feathers of the kingfisher bird, rhino horn, beeswax and elephant tusks. This man gave the following details on the best quality tusks:

> Dwellers in the remote vastness of the mountains bring out the elephant tusks - two for each dead elephant... Tusks from an elephant freshly killed by spears are the best. Next in quality are those found soon after the animal has died a natural death. Least prized are those found in the mountains years after the elephant died (Chou Ta-Kuan, 1993).

Even during the fanatical and extremely harsh Khmer Rouge period (1975-1979) when over a million people were killed, wildlife products were significant export commodities to China. In May 1977, a ship left Cambodian waters for China, bearing 6 tonnes of monkey bones, 24,760 dried geckos, 1 tonne of snake skins, 145 kg of leopard and tiger skins, 74 kg of black bear skins and 1.5 tonnes of elephant bones. The Cambodian Government charged the Chinese Government low prices for these animal products: 1,400 yuan (USD 246)/tonne for tiger, monkey and elephant bones, and only 41 yuan (USD 7)/kg for tiger skins (Kiernan, 1996).

After the fall of the Khmer Rouge Government, and the subsequent re-establishment of private markets and shops, the price in wildlife commodities, including elephant ivory, rose through the 1980s. By 1991, carvers in Battambang (the second largest city in Cambodia) were purchasing raw ivory from Phnom Penh and Laos for USD 150/kg. A year later, good-quality tusks were being bought by craftsmen in Phnom Penh for USD 340/kg; and by late 1993, the price had gone up to USD 400. Small, cracked pieces were sold for around USD 100/kg (Martin and Phipps, 1996). In early 1994, when the first detailed survey of the wildlife trade in Cambodia was carried out by Martin and Phipps (1996), raw ivory was still valued at USD 400/kg.

The reason for the sharp rise in the price of tusks in the early 1990s was due primarily to the increased demand for ivory items by the greater number of foreign visitors to Cambodia and by

the Cambodians themselves. Furthermore, the number of elephants in Cambodia had declined from several thousand in the 1960s (Weiler, pers. comm., 2001) to between 500 and 1,000 in the early 1990s (Lair, 1997), so the supply of new tusks from Cambodian elephants was severely reduced. At the time of one of the investigator's (E.M.) survey in March, 2001, the price paid in US dollars by craftsmen and shop owners in Phnom Penh for tusks was slightly less than in the early 1990s. According to six of the artisans and shopkeepers, they paid from USD 300-350/kg, with an average of USD 338/kg for a tusk weighing from 2-5 kg.

There are also some prices known for what poachers are obtaining from middlemen for killing elephants in the south-west of the country. Information from interviews supervised by the Wildlife Protection Office of the Department of Forestry and Wildlife (WPO) indicates that hunters selling tusks below 3 kg get USD 114/kg, from 3-10 kg USD 182/kg, and large tusks, over 10 kg, USD 227/kg. The hunting gangs also earn USD 400-600 for other economic parts of an elephant: trunk, tail, lungs, lips, teeth, bone and skin (Chheang Dany, WPO officer, pers. comm., 2001).

There are two sources of raw ivory for the Cambodian craftsmen. The most important is from the illegally killed elephants in the country. The largest population of elephants is in the south-west, in the Cardamom Mountains, where maybe there are as many as 200 (Weiler, pers. comm., 2001). These elephants have been severely threatened by poaching gangs. In 1999 over a dozen gangs of six to ten men each were in and around the Cardamom Mountains, hunting elephants and tigers. Tigers were usually killed by shooting monkeys and placing the carcasses on top of land mines, while the elephants were shot with modern rifles, sometimes supplied by Thai merchants. Occasionally land mines were also set on elephant trails (Weiler, pers. comm., 2001). These hunting operations were "highly organized, secretive, well-equipped and financed by outside interests" (Weiler and Men Soriyun, 1999). In 2000 six elephants were shot within a small area (Thma Bang), in the Cardamom Mountains; the tusks and tushes, trunks and lungs were removed and reportedly sent to a trader at Chhi Phat. Some of these products may have eventually ended up near the Thai border at Koh Kong town for illicit export to Thailand, while others may have remained in Cambodia, which is often the case for elephants poached in the south-west part of Cambodia. An investigation of the deaths of these six elephants was carried out by the staff of the community-based Tiger Conservation Project, and they discovered that three gangs were involved in hunting in the area; one group of six included two policemen; an exceptionally large group of 15 mainly consisted of Cambodian military personnel; and a smaller group of six villagers comprised the third group. A senior district official was the main buyer of wildlife products in Thma Bang. Other members of the army were found involved in cutting down forest trees and killing wildlife (Wildlife Protection Office, 2000; To Sareth, 2000; and Uch Seiha, 2000).

The second largest elephant population is in the north-east, in Mondulkiri Province where the number is unlikely to exceed 75 (Weiler and Chheang Dany, 2001), as there was heavy poaching in the 1980s and early 1990s. Today, Cambodians as well as Vietnamese, who cross the border surreptitiously, go after the remaining elephants (Heffernan *et al.,* 2001). They do not set land mines, but use many kinds of guns to shoot them. When elephants are killed, the tusks, tushes, meat, tails, bones and other parts are removed for sale. The meat is eaten locally, while the rest is sent to Vietnam (probably Ho Chi Minh City) and to Phnom Penh.

A third area with elephants in Cambodia is Virachey National Park, bordering Laos and Vietnam. Over the last few years, the Cambodian army has shot elephants here, and the ivory has been sent south to Phnom Penh for sale (Joe Walton, Wildlife Conservation Society, pers. comm., 2001). In early 2001, about 25 elephants remained in this Park (Weiler and Chheang Dany, 2001).

It is difficult to ascertain how many elephants have been recently killed in Cambodia; however, Chheang Dany and Weiler estimate, based on their extensive field-work, that 50 elephants were killed in 1999 and about the same number in 2000 (pers. comm., 2001). In the past, tushes were not usually taken from cow elephants, but they are today due to the shortage of raw ivory.

The second source of ivory for the carvers is from domesticated elephants. According to a census carried out in all the provinces of Cambodia, there were 144 domesticated elephants in the country in 2000, with the largest number in Mondulkiri Province, 83. There used to be many more domesticated elephants. Due to a variety of reasons, including the lack of capture expeditions (because of anarchy in the country), taboos by the major owners against breeding and the decrease in demand for elephants as a means of transport, their numbers have declined sharply in the 1990s

(Weiler and Chheang Dany, 2001). The owners prune the tips of the tusks of their elephants every two to three years, partly to sell the ivory to make money. About 75-80% of the domesticated elephants are cows because the owners prefer them to the more aggressive bulls, and as the Asian cow elephant has tushes only, not tusks, there is not much ivory available from Cambodia's domesticated elephants.

Ivory workshops in Cambodia

The greatest number of ivory craftsmen live in and around Phnom Penh. It was not possible to obtain their exact number because the craftsmen interviewed in the capital stated that some members of their profession wanted to keep their occupation secret for tax reasons, while others were afraid that if information was given out on their competitors, customers would seek them out to try to obtain lower prices for their goods. In 1994 there were about 30 (Martin and Phipps, 1996), and the number is roughly the same now, based partly upon the new items in the shops. A wildlife specialist who has also studied the wildlife markets in Phnom Penh thinks there could be as many as 40, but some of these also carve elephant teeth (molars) and various bones (Heng Kimchhay, pers. comm., 2001). The craftsmen work in some of the souvenir shops and in their homes.

The most common types of ivory items are small Buddha figurines used as decoration or as amulets, which account for at least 80% of the total pieces made. Most are 2.5-5 cm in height. A 2.5 cm Buddha would take a craftsman an hour to make, normally using electrically powered drills. According to one prominent craftsman, if a shopkeeper or a private customer provides the raw ivory (to ensure that authentic raw material is used), the craftsman will charge about 7,000 riels (USD 1.80) for the labour to make a 2.5 cm Buddha; but if the craftsman supplies the raw ivory, he will sell the small Buddha for USD 5 wholesale. This craftsman also works in stone and wood, but says he does not use elephant bone because his customers might think he was trying to cheat them. Elephant bone is extremely cheap, USD 2.50-3/kg, and can be made to resemble and feel like ivory. In fact, most of the small Buddhas crafted these days are made out of elephant and other bones, which are more affordable to the average Cambodian.

The next most common item crafted from ivory is a flower bud, usually between 2.4 and 4 cm in length, slightly smaller than the average Buddha. One of these can be made quite rapidly; indeed, a craftsman can make five 3 cm buds in an hour. One craftsman said that he charges 5,000 riels (USD 1.25) for one bud this size if the shopkeeper supplies the ivory, and USD 3 if he uses his own stock. Other items now made in Phnom Penh include cigarette holders, beaded necklaces, dice, human and animal figurines.

Young men in Phnom Penh are still being taught how to carve ivory in the Beaux Arts University and by older carvers; but because the tusks are so expensive, apprentices usually work on elephant tushes, bones, wood, human teeth, shells and various stones. There is also some ivory carving being done in Pursat, Battambang and perhaps also Siem Reap. In 1994 one of the investigators (E.M.) visited Battambang and found in the main market, Psar Phom, two brothers who had been carving ivory for about three years; one learned the craft in the Beaux Arts University, and afterwards taught his brother. They purchased their tusks from Phnom Penh and Laos for USD 350/kg and used about 4-5 kg each year in the early 1990s. In 1993 these brothers used only hand tools to make Buddhas, flower buds, rings and crucifixes. The small, simple Buddhas were most in demand in the market, and they could each make five Buddhas in a day. They claimed that they worked only in ivory and that they were the only ivory carvers in Battambang in 1994.

It is difficult to estimate how much ivory carvers earn in Cambodia because most of them work independently and they do not like to disclose their earnings. Salaried wood and stone carvers in several large workshops in Siem Reap get USD 50-100 a month, unless they are master craftsmen, in which case they may earn up to USD 200 a month. These salaries are high for Cambodia, as an average government employee, with a university degree, is paid only USD 15-20 a month.

The amount of ivory used by the craftsmen in Cambodia is relatively little, as there are few people who work in ivory and most of the items they make are very small. The tusks from elephants poached in Cambodia and the pieces of ivory obtained from domesticated elephants are possibly more than sufficient for the craftsmen. There is, however, a demand from wealthy Cambodians (especially ethnic Chinese) for large, whole, polished tusks. They believe that a pair of tusks symbolizes good luck, prosperity and power.

Retail outlets and prices for worked ivory in Cambodia

Phnom Penh is the main retail market in quantity and variety of ivory items (see Tables 19 and 20). In March 2001, 54 souvenir and jewellery outlets plus one antique shop (owned by a Frenchman) offered 1,683 ivory items for sale. Most of the shops are located in Phnom Penh's city centre, especially around the National Museum and in and around the main markets of Tuol Torn Pong (popularly called the Russian Market), Thmei (the Central Market), and 0 Russei Market. Of the ivory objects counted, 82% were small Buddhas and amulets (see Table 20). Most of these are bought by Cambodian men who may display them at home, or hang them around their necks. Of the 1,386 Buddhas on sale in the city, about 95% were from 2.5 to 5 cm in height, and the retail prices ranged from USD 4-5. The largest Buddha seen was only 11 cm, and was priced at USD 70. There were some more expensive ivory Buddhas encased in gold. Besides Cambodians, some Thais and Frenchmen also buy the Buddhas.

Table 19
Number of shops and ivory items seen for sale in Cambodia in March 2001.

City, town	No. of shops with ivory items	No. of ivory items
Phnom Penh	55	1,683
Siem Reap	4	90
Total	59	1,773

Table 20
Retail prices for ivory items in Phnom Penh in March 2001.

Item	Size in cm	Starting USD price *
JEWELLERY		
Bangle	1.25	8
Ear plugs, pair (from northern Thailand)	5	37
Necklace, small beads		26
Pendant, flower bud	3	7
FIGURINES		
Buddha (amulet)	2.5	11
	5	18
	10	65
Elephant	7.5	50
Human	7.5	29
Lion	7.5	25
Water buffalo	7.5	30
TUSKS		
Tusk/tush, polished	45	643/kg
MISC.		
Chess piece, old		70
Chopsticks, pair, with knife (Chinese, 19th century)		200
Cigarette holder	10	22
Dice, pair	2.5	20
Flute	20	120
Snuff-box (Chinese, 19th century)	10	120

*For final price after bargaining, deduct about 20%.
N.B. USD 1 = 3,900 riels. All ivory items in Cambodia were quoted in US dollars, however, not in riels.

The second most common ivory item for sale, making up 9% of the total, was the flower bud. Called in the Khmer language *phka champa,* the flower bud is a replica of that from the plant *Michelia alba,* widely cultivated in tropical Asia for its fragrant flower (Dy Phon, 2000). In Cambodia, women often put one of these real flowers in their hair. The ivory flower bud is worn by women as a pendant or, less commonly, as an earring. Most are from 2.5-4 cm and retail from USD 4-10 each.

The other ivory objects for sale in Phnom Penh are necklaces, bangles, cigarette holders and different kinds of pendants (see Table 21). By far, the most expensive item for sale was a pair of polished tusks weighing a total of 7 kg, for USD 3,500. The next most expensive item was an old, Cambodian-made set of prayer beads for USD 450. The reason why there are so few expensive ivory items is that most Cambodians are extremely poor, and relatively few foreign tourists have come to the country because it has been unsafe.

Table 21
Types of ivory items seen for retail sale in Phnom Penh in March 2001.

Item	Percentage of total
Buddha	82
Flower bud	9
Necklace	1
Bangle	1
Pendant (other than Buddha or a flower bud)	1
Cigarette holder	1
Misc.	5

Cambodia Buddha

The second place with the most ivory items was Siem Reap, the town that is adjacent to the Angkor Wat ruins. Siem Reap is now attracting many foreign tourists, compared with a few years ago, as there are now direct flights from Bangkok, Ho Chi Minh City and Singapore, avoiding Phnom Penh. In 1999, 28,525 tourists arrived in Siem Reap, directly by air from Bangkok, but one year later 70,640 came from Bangkok and 15,960 from Ho Chi Minh City (Ministry of Tourism, 2001). In 1994, Martin saw only a few ivory items for sale in just two shops in Siem Reap (Martin and Phipps, 1996). In March 2001, there were 89 ivory items in three shops in Siem Reap, primarily catering to tourists. Most objects (78) were in one large, Chinese-owned souvenir shop. All were Buddhas, 2.5 cm in height, reasonably well carved, and priced at USD 20 each (see Table 22), but

Table 22
Retail prices for ivory items in Siem Reap in March 2001.

Item	Size in cm	Starting USD price*
Buddha	2.5	20
	3.7	25
	7.5	65
Human sculpture (old)	5	25
Name seal	7.5	130
Knife with ivory handle (old)	10	55

* For final price after bargaining, deduct about 20%.

with bargaining could be bought for USD 16. Another shop, also large, recently built and Chinese-owned, had seven name seals for sale. This was unusual, as there was not a single name seal for sale in Phnom Penh in 2001, but a lot of Japanese tourists go to Angkor Wat, and these 7.5 cm long seals were being offered to them for USD 130 each, but after much bargaining could be bought for USD 100, still a very high price. A similar seal could be purchased in Bangkok for USD 41. The seals in Siem Reap were the most expensive of any ivory items on sale in the town. Other items in this shop were also expensive; a 2.5 cm Buddha was twice the price of similar ones in Phnom Penh shops. The probable reason is that this new, modern shop was built to attract wealthy foreign tourists visiting Angkor Wat, not Cambodians. There were no authentic ivory items found in the 110 or so small jewellery shops in the Old Market, and only one in the 73 jewellery shops in the Upper Market in Siem Reap.

Sihanoukville, the country's main port and the principal beach resort for foreigners and Cambodians, has a typical market, called the Leu Market. Inside are 85 small jewellery shops, of which 73 had 440 Buddhas and 45 flower buds made from bone and other materials, not ivory. The 2.5 cm high non-ivory Buddhas were priced around USD 3, and the flower buds were even less. In Phnom Penh's smaller markets, there were also many small Buddha figurines and flower buds that were made from different materials. For example, in the Olympic Market, on the mezzanine floor, there are 89 small jewellery shops, 56 of which had 1,309 small Buddhas and 288 flower buds, probably none of which was made of ivory, although they closely resembled it. These Buddhas were priced at USD 1-3, while the flower buds sold for USD 1-2. Both types of items were generally more crudely carved than those made from ivory. Sometimes it was difficult to see from what material the smallest items were made, and the total number of ivory items seen in the three urban centres surveyed in 2001 is a minimum figure because it is possible that some of the littlest items may not have been recognizable as ivory, and therefore were not counted.

The main buyers of the ivory Buddhas and flowers, which constitute 90% of the ivory items on sale in the country, are Cambodians, followed by Thais and a few European, American and Japanese tourists. Cambodians themselves are by far the major buyers of ivory. This is also true for Laos, but unlike the other countries in South and South East Asia, where foreign tourists buy almost all the ivory available.

Other elephant products for retail sale in Cambodia

In most South East Asian countries, more parts from the tiger are for retail sale than from any other animal. You can find tiger whiskers, meat, bone, skin, blood, penis, fat, claws and teeth in the markets and in traditional pharmacies. In Cambodia, however, it is the elephant which has the greatest number of parts for sale. Besides the tusks, tushes, molars and bones, which are used by craftsmen, many other parts of the elephant are readily available in some of the major markets, especially the Central and O Russei markets, in Phnom Penh. Most of the parts are wanted for medicinal purposes (see Table 23), but some are used for decoration and jewellery. This is a serious problem for Cambodian elephants because poachers will go after any elephant, whether or not it carries ivory.

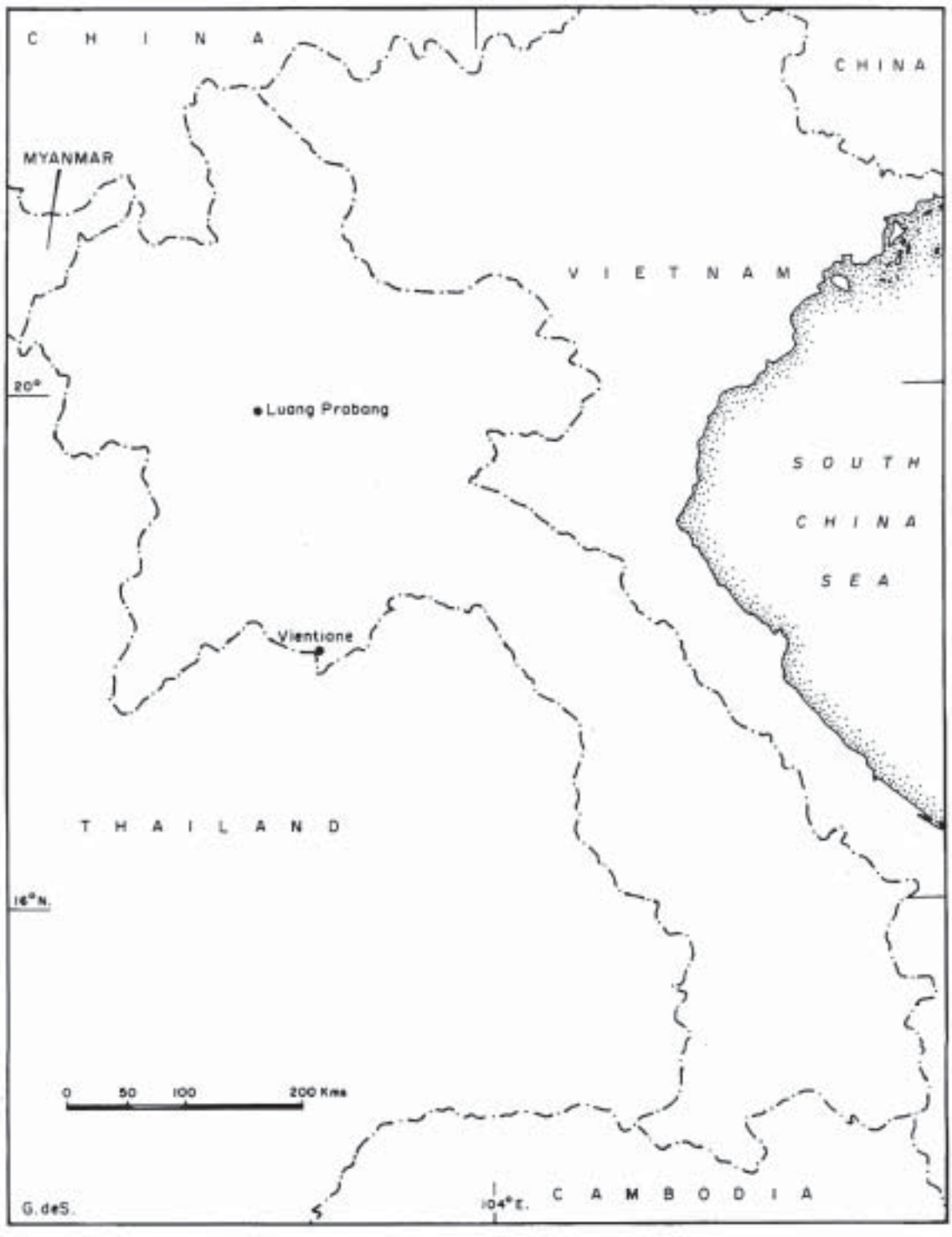
Table 23
Elephant products for retail sale in the main markets in Phnom Penh in March 2001.

Product	Use by Cambodians	Price in USD
Bone	Carving into many inexpensive items	2/kg
Foot pad	Medicinal	
Hair	Bracelet or ring	1 each
Lip	Medicinal	70
Lung	Medicinal: to treat asthma	
Nail	Medicinal: to lower temperature	
Penis	Medicinal	
Skin	Medicinal: to cure skin problems/injuries	80/kg
Tail	Decoration	110
Tooth (molar)	Carving and medicinal: health tonic	23/kg
Trunk tip	Medicinal: to cure skin injuries	40-75
Tush	Carving into many items	
Tusk	Carving into many items	700/kg

Laos

The legal position of the ivory trade in Laos

Laos is not a signatory to the CITES Convention, although there is ample national legislation prohibiting the killing of and trade in the products of the elephant and other protected wildlife species (Decree of the Council of Ministers No. 185/CCM, 1986; Decree of the Council of Ministers No. 118/CCM, 1989; Decree 1074 of the Ministry of Agriculture and Forestry, 1996; and Declaration of the President No. 125/PO, 1996) (Nooren and Claridge, 2001). Ivory and other wildlife products can, however, be imported and exported with government authorization and a certificate of origin under Decree of the Council of Ministers No. 18, Article 4 of 1989 (Todd Sigaty, pers. comm., 2001).



Map of Laos

In spite of the laws, a great deal of poaching is carried out in Laos. Because of the general poverty in the country bush meat forms an important component of the diet. Wildlife products, including meat, live animals and ivory, have been traded internally and internationally with China, Vietnam and Thailand for generations.

This situation continues today, although poachers are caught and prosecuted from time to time (Duckworth *et al.*, 1999; and Martin, 1992a). The government does not have the resources to enforce the wildlife laws effectively (Arlyne Johnson, World Conservation Society, pers. comm., 2001). Vendors of ivory and other wildlife products were aware that it was illegal, and during this study many would not allow photographs to be taken, though their goods were openly displayed.

Introduction to Laos

Laos was visited from 21 to 31 January 2001. The capital Vientiane (population 640,000) and Luang Prabang (75,000) were surveyed (see map).

Traditionally, ivory has been used in Laos only as sword, knife and machete handles, royal seals, tribal ear plugs and for Buddha amulets. There appears to have been no decorative art using ivory until the 20th century, based on what was seen in museums and art books. Laos is not mentioned in Kunz (1916) nor St Aubyn (1987). The quality of carving of most pieces seen was of a low standard, except for imported pieces from China.

Laos still has 53% of its land under forest cover, though illegal logging is widespread. Laos has been popularly known as *Lane Xang*, or "The Land of a Million Elephants", since antiquity, but only an estimated 3,000 to 5,000 wild and 850 domesticated elephants remained in 1988 (Martin, 1992a). Lair (1997) guessed that only 200-500 remained in the wild in the mid-1990s, with an additional 1,200 domesticated elephants. Duckworth, et al. (1999) think that Lair's estimate of wild elephants is too low, and Kham Khoun Khounboline found 839 wild elephants in a 1998 survey of 22 areas of Laos (Johnson, pers. comm., 2001). There are from 950 to 1,300 wild elephants remaining in Laos (according to the IUCN Asian Elephant Specialist Group), almost all of them in the south (Kemf and Santiapillai, 2000).

Sources and prices of raw ivory in Laos

Virtually all raw ivory carved in Vientiane comes from the southern provinces of Laos. More Laotian raw ivory is smuggled into Vietnam than is used in Laos. Vendors and carvers said that larger pieces and tusks sold for USD 250-300/kg. In the Morning Market the investigator asked the shop owner to weigh an 18 cm raw tusk she had for sale and give the selling price. The piece weighed 170 g and the shop owner said the price would be 2,000 Thai baht, or USD 46.50 at the rate of exchange for the year 2000, which works out to about USD 274/kg. (The deer antler that one carver uses for amulets costs USD 80/kg.) Several raw tushes less than 10 cm in length were seen for sale.

Martin (1992a) states that raw ivory prices in Laos rose from USD 100/kg in 1988 to about USD 200/kg in 1990 due to the increase in foreign visitors resulting from an opening of the Laos economy. The 20-33% price rise over the past ten years is probably due more to ivory scarcity than to increased demand, as carvers and vendors said that ivory commerce had not changed much over recent years, but raw ivory had become much more difficult to find.

Ivory workshops in Laos

Three wood-carving teachers at the National School of Fine Arts in Vientiane make additional income by carving Buddha ivory amulets and any other items that might be commissioned. They also taught ivory carving in past years, but nowadays ivory had become too expensive and difficult to obtain to use in teaching (Mr Paivanh, lecturer at the National School of Fine Arts, pers. comm., 2001). They usually buy their own low grade ivory for carving amulets, but clients must provide the ivory for larger items. An antique shop in the Morning Market employs two other carvers. The owner of this shop and the carvers are all Vietnamese. There are only five ivory carvers in Vientiane, due to low demand (Paivanh, pers. comm., 2001). Martin (1992a) found ten ivory craftsmen in 1990, thus the number had been halved by 2001. Martin (1992a) also stated that there were a few ivory carvers in Luang Prabang, but nobody is there working ivory today.

The Vietnamese shop owner in the Morning Market had one ~2 kg tusk and another tusk section, already marked for carving, hidden away for future use. The fact that they had not been carved supports the view that demand is very low.

A carver can make five ivory amulets a day and he will sell one for 40,000 kip (USD 4.87), about half the retail price. At least one carver, another teacher at the National School of Fine Arts, is using deer antlers to fashion Buddha amulets, and he passes these off to clients as ivory. Without a detailed study, it is impossible to know how many of the 'ivory' amulets — and perhaps other small pendants as well — are made from deer antler rather than elephant ivory.

The total number of ivory craftsmen in Vientiane and Luang Prabang has decreased from at least a dozen in 1990 to five in 2001. This indicator is consistent with concluding that there has been a decline in demand for ivory in Laos over the past decade.

Retail outlets and prices for worked ivory in Laos

Table 24 shows the number of souvenir and jewellery shops visited. Out of a total of 182 shops some 63, or 34.6%, carried ivory, although the quantity in each was very low. The total number of pieces seen was 1,424. The great majority of these pieces were 3-4 cm Buddha amulets and pendants and other 2-4 cm pendants shaped in the form of elephants, elephant tusks or hearts. The smaller Buddhas are usually worn by women as pendants, while larger ones (5-6 cm) tend to be carried somewhere on the body by men. These types are also carved in bone and deer antler and it is very difficult to distinguish them from ivory.

Table 24
Number of shops and ivory items seen for sale in Laos in January 2001.

City, town	No. of shops surveyed	No. selling ivorv	No. of items
Vientiane	143	53	1,346
LuangPrabang	39	10	78
Total	182	63	1,424

Seven of 21 souvenir shops in central Vientiane displayed small amounts of ivory. Most ivory was found in four antique shops on the ground floor of the Morning Market and in 42 jewellery and souvenir shops on the upper floor. The most pieces (388) seen in any outlet in Laos were found here. Many of the larger ivory items were antiques, as there is little demand for newer large pieces. The most common large piece (>10 cm) was the carved tusk. Mounted raw and carved tusks were found as small as 6 cm in length, however, supporting the vendors' contention that there is a severe raw ivory shortage in Vientiane. Other large items were Kwan Yin and Maitreya figurines, opium pipes and old machete handles.

Laos opium pipe

The ten shops selling ivory in Luang Prabang were all located along the main tourist road, which changes name about four times along its length. They carried very small quantities of ivory, and 61 of the 78 pieces seen were 2-4 cm Buddha amulets and pendants. Again, the larger items were almost all antiques. The only new ivory items coming into Luang Prabang today are amulets.

No ivory was sold in temples, museum shops or at the airport.

Table 25 shows the range of prices for most types.

Prices were generally much lower in the Morning Market than in other shops. The USD 3,000 carved hollow section, for example, was seen in a luxury hotel in Vientiane, while a similar piece in the Morning Market was priced at USD 650. Elephant molar teeth were sold in several shops in Vientiane and Luang Prabang and ranged in price from USD 16-40.

The main buyers in Vientiane for the Buddha amulets are Laotians, followed by visiting Thais. Vendors in Vientiane said that the main buyers in general were Chinese from Thailand, China and Hong Kong, and Japanese. The very high proportion of Kwan Yin and Maitreya as subjects for the carved tusks and figurines indicates that vendors were targeting these Chinese communities. They said western tourists rarely bought ivory. In Luang Prabang, Laotians were the main buyers of amulets, but the larger ivory antiques, mainly knife/machete handles, were purchased by European tourists.

Vendors said that sales of ivory had remained stable for the past five years and were at a fairly slow rate. Although tourist numbers are increasing, according to the reports of hoteliers interviewed, most of these are low budget backpackers, people who rarely buy ivory. In early 1990 Martin (1992a) found a 4 cm Buddha amulet costing USD 8 and a bangle costing USD 35, which are essentially the same prices as in 2001, suggesting no increase in ivory demand. The fact that the same Buddha amulet carved in bone can be bought for USD 0.85-1.22 must also reduce the demand for ivory use. Very often the amulets are put into base metal or gold frames with glass protective covers, making raw material identification even more difficult. An ivory amulet with a gold frame costs USD 40.

Table 25
Retail prices for ivory items in Laos in January 2001.

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	1	30
	1,5	40-85
Bangle, engraved	4	200
Necklace, small beads	20	
Necklace, large beads	70	
Pendant, elephant	1-2	5-9
FIGURINES		
Religious		
(Buddha amulet)	3-4	8-10
	6	80
(Maitreya)	6-10	400
	12	200
	18	750
	20	400
TUSKS		
Carved	8	80
	16	155
	20-25	450-2,000
	50	700
	130	8,000
Carved, hollow section	30	650-3,000
Polished, pair		
with silver bases	12	125 each
Polished, chipped and cracked	20	200-225
Polished, pair		
with silver mounts	40	450 each
Polished	60	250
	70	400
MISC.		
Chopsticks, pair	30	
Cigarette holder	6-8	10-15
	10	30
Knife/machete with ivory handle		
(with scabbard)	5-7	25-35
	8-10	400
	10-15	149-309
	12	1,000
Lamp	55	1,800
Name seal	5-6	40-45
Opium pipe	25	450
	30	600-1,000
	40	850

* For final price after bargaining, deduct about 20-35%.
N.B. USD 1 = 8,220 kip.

Vietnam

The legal position of the ivory trade in Vietnam

Vietnam acceded to CITES on 20 April 1994. A series of government laws and decrees prohibit the hunting of elephants and other listed wild species (Prime Minister's directive 134/TTg, 1960; Council of Minister's decree 39/CP, 1963) and the use, trade and transport of products derived from them (Ministry of Forestry decision number 276/QD, 1989; Council of Minister's decree 18/HDBT, 1992; Prime Minister's directive 359/TTg, 1996). In addition, Article 29, paragraph 5 of the December 1993 Environmental Protection Law prohibits the exploitation and trade of species on the government's list of threatened species. The elephant is classed in category LB., patterned after CITES Appendix I, which means there is a complete ban on all trade of the species' products. In July 2000 the Revised Criminal Code set out regulations for the prosecution of cases of illegal exploitation of rare and precious wild species, including elephants (TRAFFIC, 2001).

The legal position of the internal and international trade in elephant and other wildlife products is clear, but elephants are still illegally hunted in Vietnam and ivory continues to be carved and sold openly in shops, along with a great variety of other wildlife products. These include bear and tiger teeth, claws and skins; deer and antelope skulls and antlers/horns; and bush meat is commonly sold in markets and restaurants (Martin, 1992b; Stiles and Martin, 1994 and 1995; and Nash, 1997a). No rhino horn was found anywhere, including in traditional medicine shops, but when asked about it, sales people either gave a curt "no" or walked away.

The WWF/TRAFFIC office in Hanoi states that the lack of compliance with the laws is due to the absence of regulations to deal with ivory obtained by craftsmen and vendors before the prohibitions came into effect, and also because there are no clear regulations specifying the responsibilities of the various law enforcement agencies (Nguyen Tri Man, TRAFFIC, pers. comm., 2001). Ivory vendors simply claim that they are selling 'old' ivory items, which is legal. Government-owned stores catering to tourists were found to sell ivory objects in both Hanoi and Ho Chi Minh City, and many of the ivory items were clearly not old, illustrating that the government has yet to come to terms with enforcing the wildlife conservation laws.

Introduction to Vietnam

Vietnam was visited from 9 to 21 January 2001. Due to financial constraints only Ho Chi Minh City (4.6 million people), Hanoi (3.7 million) and the town of Vung Tau (170,000) were visited (see map), though Hue also sells appreciable quantities of retail ivory and Dalat has modest amounts (Man, pers. comm., 2001). Vietnam does not appear to have a long tradition of working ivory. No book out of many consulted on the art of Vietnam even mentioned ivory art works (such as Thuong, 1997), and the earliest ivory objects seen in museums were dated to the 19th century in the Historical Museum in Ho Chi Minh City and to the early 20th century in Hanoi's History Museum. The objects in both cases were official government seals. No ivory was seen in the Fine Arts Museum in Hanoi. Buddhist sculpture in Vietnam over the centuries made use either of wood, which was subsequently lacquered, or stone. St Aubyn (1987) and Kunz (1916) do not include Vietnam in their historical reviews of ivory art.

Good quality ivory carving seems to have developed during the French colonial period in the first half of the 20th century. Hanoi and Hue emerged as the main carving centres, catering mainly to French administrators and French and Chinese-Vietnamese businessmen as the economy developed. The men of several families became established ivory craftsmen through about three generations, some of whom came to be known for their great carving skill. Martin (1992b), for example, found a celebrated ivory craftsman in Hanoi who used six tonnes of ivory a year in the early 1950s, and he had learned to carve from his grandfather. At the time of the 2001 survey this man had died, but his son was located and he is still working ivory. He is also teaching the craft to his 15 year-old son. There was general consensus from both craftsmen and the owners of art and craft outlets that the quality of ivory carving was on the decline in Vietnam. The older generation master carvers had either died or retired, and the newcomers had not attained the same level of skill. Most buyers today are not as particular about the quality of the pieces as in prior times, though finely worked pieces can still be found.

Map of Vietnam

Vietnam has a long history of exporting wildlife and wildlife products to neighbouring countries, mainly China. From the 3rd century BC to the 10th century AD Vietnamese kings sent wildlife and wildlife products to Chinese rulers as tribute, including ivory. Exports, all illegal, are still common, despite an agreement made in 1995 between Vietnam and China to improve co-operation in the conservation of wildlife (Nash, 1997a). Li and Wang (1999) report that they saw on seven occasions

in 1997 Asian and African elephant raw ivory, bone and skin passing from Vietnam into Yunnan Province of China, and that the trade in wildlife products in China is going underground as a result of stricter government controls. TRAFFIC (2000b) reported that wildlife trade between Vietnam and China was on the increase. Nongrao and Donxing in Yunnan are major crossing points (Nash, 1997a). Vietnamese poachers, often ex-military, hunt elephants for their ivory, meat and skin inside Vietnam and in Cambodia and Laos. Between 1992 and 1996 some 48 elephants were killed in Ha Tinh Province, seriously depleting the local population (Dawson and Tuoc, 1997).

At the beginning of the 20th century large parts of Vietnam were forested and there were sizeable populations of both wild and domesticated elephants. At this time Vietnam was exporting trained elephants to Thailand, Cambodia, Laos and Myanmar to work in the timber industry (Tuoc and Santiapillai, 1991). As elsewhere in Asia, elephants were the main method for transporting felled logs out of the forests. Between 1943 and 1983 forest cover had fallen from about 44% to 24% of the country, most of it being found along the border with Laos and Cambodia. The Vietnam war (called the American war in Vietnam) destroyed forest habitats in militarily strategic areas, which no doubt also depleted elephant and other wildlife populations. Today total forest cover is probably only 10% (Kemf and Santiapillai, 2000).

In 1990 there were an estimated 1,459-1,631 wild elephants in the country, with the highest numbers seen in Dak Lak (480-505), Gia Lai-Kon Turn (250) and Lai Chu (126-243) Provinces (Tuoc and Santiapillai, 1991). Economic liberalization and an increase in tourism raised both local and visitors' demands for worked ivory, which resulted in heavy poaching. The elephant in Vietnam is under severe threat and only about 135 wild elephants remain, a drop of over 1,000 in ten years, living mainly in or near national parks in the western highlands near the borders of Cambodia and Laos (Dawson *et al.*, 1993; and Kemf and Santiapillai, 2000). Lair (1997) estimated that there were about 225 domesticated elephants left in Vietnam in 1996. In the 1980s there were approximately 500 in Dak Lak Province alone. Domesticated elephants are still important to the peasants near the town of Tay Nguyen and in Dak Lak for hauling logs and transporting goods (Cao, 1995), but even these are poached on occasion.

Sources and prices of raw ivory in Vietnam

Several informants in both Ho Chi Minh City and Hanoi named Dak Lak Province, and specifically the town of Ban Ma Thuot, as the source of their raw ivory. Many informants said that the owners of domesticated elephants amongst the ethnic minority communities cut tusk sections off living elephants and sell the ivory at USD 500/kg. Near the town of Tay Nguyen, which is near the Yok Don National Park, wild elephants were said to have been poached, and the ivory cut into pieces and sent north to Hanoi or south via Ban Ma Thuot to Ho Chi Minh City. Raw ivory from Laos and Cambodia is also smuggled into Vietnam where it goes via Kon Turn and Ban Ma Thuot to Hanoi, Hue and Ho Chi Minh City. The TRAFFIC office confirmed this information (Man, pers. comm., 2001) and said that raw ivory in early 2001 cost from USD 350-500/kg, depending on size and quality. One carver in Hanoi said that he bought raw ivory from a Vietnamese who brought it from Angola where he worked. The carver paid USD 300/kg for it.

In Ho Chi Minh City the investigator was offered two poor quality tusks, one weighing about 4 kg and the other 3 kg, for a fixed price of USD 1,200. One tusk was mostly black and the other was brown and cracked, and even these tusks cost about USD 171/kg, higher than the price of good quality raw ivory in either Thailand or Myanmar. In Hanoi a pair of mostly hollow, thus less desirable for carving, 70 cm long mounted tusks weighing about 3/kg in total was priced at USD 700, or USD 233/kg.

Martin (1992b) reported that in 1990-91 raw ivory varied in price from USD 100-200/kg depending on availability and the current rate of retail sales. A carver in Hanoi told this investigator that he paid USD 100/kg for raw ivory in early 1995, but that the price rapidly increased that year, which prompted him to retire from ivory carving. The at least three- to five-fold increase in the price of raw ivory from 1995 to 2001 explains the upsurge in retail prices compared with 1991. This upsurge in prices is most likely a result of economic liberalization and the concomitant increase in prosperity and visits by tourists and businessmen.

Ivory workshops in Vietnam

Retail ivory vendors in Ho Chi Minh City were very reluctant to reveal the locations of ivory carvers. Most of them said that their ivory was carved outside Ho Chi Minh City, variously in Ban Ma Thuot, Hue and in one instance an unnamed village 70 km away. One former workshop located by Martin (1992b) is now a clothing store. One man with a souvenir shop in a non-tourist area, a branch of one of the largest ivory shops near Dong Khoi Street in a main tourist area, said that he used to carve ivory in his home above the shop, but he said that he had stopped carving ivory as he had sold none in three years. Another shop owner said that there were some part-time carvers in Cholon, the Chinese part of Ho Chi Minh City, but he could give no addresses.

Two ivory craftsmen were located in Hanoi, but because of the *Tet* (Chinese New Year) approaching at the time of the investigator's visit, none was working. One said that there were about ten ivory carvers in Hanoi, and that three or four families were involved in ivory carving in the village of Th'u'ong Tin, some 20 km south of Hanoi. One shop owner said that her father carved the ivory sold in her shop, but she refused to take the investigator to visit the workshop. The TRAFFIC office in Hanoi said that raw ivory from Vietnam was taken to China to be carved and was re-imported, as the carvers in Vietnam were not skilled enough, but neither of the craftsmen interviewed in this study said they knew of this practice.

Traditionally, the craft of ivory carving was passed down from father to son, but this custom is dying out as educated boys do not want to be what they perceive as manual labourers (Nguyen Nang Luong, retired ivory carver, pers. comm., 2001).

Retail outlets and prices of worked ivory in Vietnam

Table 26 shows the number of retail art and craft outlets visited, the number that contained ivory objects, and the number of items seen in each city. In all, some 3,039 ivory pieces were found for sale in 50 outlets in the two cities and one town visited. Some 276 shops and boutiques that might be expected to carry worked ivory were visited, thus 18.1% of these did have it for sale. Tourist textile outlets, unless they also sold handicrafts, were excluded.

Table 26
Number of shops and ivory items seen for sale in Vietnam in January 2001,

City, town	No. of shops surveyed	No. selling ivory	No. of items
Ho Chi Minh City	99	37	2,262
Hanoi	157	13	777
Vung Tau	20	0	0
Total	276	50	3,039

In Ho Chi Minh City the largest number of pieces seen in one shop was 551 and the smallest was one. In Hanoi the range was 201 to one piece. The greatest numbers of large ivory items were found either in shops specializing in ivory, or in expensive art and jewellery boutiques. These larger pieces consisted of local Buddhist religious figures such as Niet Ban Tinh Xa (the Vietnamese script uses Roman characters, but contains a large number of various accents which are omitted here), a popular female goddess who resembles the Chinese Kwan Yin, Maitreya who in Vietnam represents prosperity (often with several small children draped over him), the Taoist Long Life sage, various fat-bellied 'fairies' from Chinese mythology, old Taoist Immortals, large tusks carved into rural village scenes or elephant bridges, lamps made from carved tusk hollow sections, and Bodhisattvas with multiple arms. Many of these objects displayed obvious Chinese influences. One shop in Ho Chi Minh City carried dyed ivory Chinese cabbages *(bok choi)*, also seen in Singapore (which had been carved in Beijing), but the shop owner claimed that they had been manufactured in Vietnam. Classical Buddhas in serene poses were rare, except on amulets, which are worn as pendants. All worked and raw tusks seen measured 30 cm or more, a marked contrast to nearby Laos, which sold tiny tushes.

The most common small items in order were name seals, Buddha and painted protective amulets, votive tablets, mounted and sometimes framed carved or painted plaques in various shapes, chopsticks, jewellery (bangles, necklaces, pendants, ear-rings and rings), cigarette holders, dice, and smaller versions of the religious figures mentioned above. Popular items in Hanoi were engraved round or square ivory compasses 5-10 cm in diameter (see Table 27). Sculpted elephants, common in most other Asian countries visited, were rare in Vietnam.

Three shops in Ho Chi Minh City carried a total of ten ivory items, including one 25 cm carved hippo tusk, all of African origin. One shop owner brought his pieces back from a trip to Europe, and a Vietnamese trader sold some items to the other shops. Three large African busts in one shop were priced at USD 700- 1,000 and had been sitting there for five years.

The Miss Saigon Shopping Plaza in Ho Chi Minh City, a government-owned department store catering to foreign tourists, displayed real and fake (bone and cast resin) ivory items mixed together. The carved ivory was of low quality and highly priced. The floor manager very aggressively tried to sell the fake ivory as real. The fact that elephant ivory items were for sale there at all does not speak well for government respect of its wildlife laws.

No ivory was found in any of the large markets, museum shops or at the airports.

Vietnamese compass

Table 27
Retail prices for ivory items in Vietnam in January 2001,

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	<1	45-50
	1	70-150
	2	60-200
Ear-ring, small		25
Necklace, large beads		75-250
Necklace, small beads		40-120
Pendant, Buddha	3	25-30
Ring, plain		10-20
FIGURINES		
Religious	<5	15
	5-10	30-150
	10-20	35-200
(Bodhisattva)	10-20	400-800
	20-30	250-500

Table 27 continued

Item	Size in cm	Starting USD price*
TUSKS		
Carved	30-40	380-700
	40-50	400-1,000
	60	400-2,000
	(poor carving)	110200
		120500
MISC.		
Chopsticks, pair		36-95
Cigarette holder	8-10	35-70
(carved)	20	140
Comb	8	60-110
Compass	5-6	150
	10	350-500
Disc, painted	5	20
	12	35
Lamp (hollow tusk section carved)	40	500-2,000
Name seal	5	20-30
	6-8	25-72 (Govt. shop USD 80 after discount)
Plaque, carved	8-10	150-250
Scent bottle, painted	3-6	8-25
Votive tablet	5-7	35

* For final price after bargaining, deduct about 10-20%.
N.B. USD 1 = 14,450 dong.

In Ho Chi Minh City vendors identified ethnic Chinese from Taiwan, China, Hong Kong and Singapore as the main buyers of carved ivory, followed by Japanese, French and Koreans. Taiwanese especially preferred the larger pieces, which indicates that it is not difficult to export ivory from Vietnam, nor to import it into Taiwan. Vendors said that few Europeans or Americans bought ivory as they knew it was illegal to import it into their home countries. In Hanoi, however, several vendors named Americans and French as buyers of ivory along with Chinese, Japanese and wealthy Vietnamese. Japanese are known to pay the highest prices.

Vendors reported that retail sales of ivory were slow these days, and that the market dropped considerably in 1995 after Vietnam joined CITES and began enforcing the new Environmental Protection Law. No shops in Vung Tau, a tourist beach resort town, sold ivory, though Martin (1992b) found several outlets selling ivory in the early 1990s. An ivory carver he interviewed there was no longer in his former home workshop, and one vendor said that it was illegal to sell ivory and that one could be arrested if found with it in this town. A hotel receptionist said that ivory was too expensive for the average Vietnamese, and he had only seen it once, at the home of his wife's parents. The other wildlife products, mainly marine, found in Vung Tau in 1991 (Martin, 1992b) are still being sold in large quantities.

Martin (1992b) reported that most of the 50 or so souvenir shops he found in Hanoi sold ivory, and in early 2001 that number was down to 13, even though the number of souvenir shops has increased considerably over the past ten years with the liberalization of the Vietnamese economy and increase in tourism. A carver/souvenir shop owner interviewed in Hanoi in 1991 (Martin, pers. comm., 2000) has now retired from carving, and he closed his shop in 1998 due to poor business. Martin (1992b) found 31 shops out of about 60 selling ivory in the Dong Khoi Street area in Ho Chi Minh City. Only 10 shops were found to carry ivory on Dong Khoi Street in this survey, plus another three along a street off Dong Khoi. There were large amounts of carved bone, however, as a replacement. Nineteen out of 38 antique shops on Nguyen Van Minh Street were found to sell small quantities of raw and carved ivory, along with other wildlife products.

Vendors in Vietnam said that retail prices of ivory items were about the same in early 2001 as in 1995, but that ivory was much harder to come by. The scarcity of ivory has apparently been offset

by the demand decline to keep retail prices steady. Retail prices have increased considerably since 1990/91 for smaller pieces, however, as they are more popular probably because they are easier to smuggle. Table 28 compares prices for similar items in Martin (1992b) and the prices found in this survey.

Table 28
Retail prices for ivory items in US dollars in Vietnam in 1991 compared with 2001.

Item	1991	2001
Bangle, thin	15	45-50
Ear-ring, small	1	25
Necklace, small beads	15	40-120
Ring	1-2	10-20
Buddha, 6 cm	7	30
Buddha, 15 cm	35-160	100
Chopsticks, pair	33	36-95
Cigarette holder, 10 cm	19	35-70
Cigarette holder, engraved, l 8 cm	40	140
Name seal	17 (7.5 cm)	45 (8 cm)
Tusk, carved, 30 cm	250	380
Tusk, carved, 61 cm	1,025	400-2,000
Tusk, elephant bridge	395 (48 cm)	400 (45 cm) 2,500 (50 cm)

The USD 2,500 carved tusk in Table 28 is from a government-owned tourist souvenir shop in Hanoi. The government-owned shops always had higher prices, as they received guided visits of wealthy tourists on package tours. As well as ivory items, other prohibited small wildlife products had also risen in price, being easier to smuggle. For example, tiger teeth and claws had risen from USD 9 and USD 10 respectively in 1990/91 to USD 90 and USD 100 in 2001.

The retail price indicator shows that the demand for smaller ivory items has risen while larger pieces have fallen since the 1990 CITES ban. The significant drop in the number of shops selling ivory suggests that worked ivory demand has declined over the past decade.

Singapore

The legal position of the ivory trade in Singapore

Singapore acceded to CITES on 28 February 1987. The Singapore Government banned the selling of raw and carved ivory on the islands in 1989 with the Endangered Species Act, except for ivory stocks that had been registered with the Primary Production Department prior to November 1986. Article 4 specifically prohibits, without a permit, the import, export, re-export, transport by sea, possession, sale or display of any scheduled species or specimen with a fine of up to 5,000 Singapore dollars (S$) and up to a year in jail (Todd Sigaty, pers. comm., 2001). When asked, vendors say that they are selling old stocks of worked ivory, though sometimes they are ignorant of the date in the law (November 1986) and say that the ivory is simply pre- 1990. Shops and department stores that used to sell ivory now sell carved bone, so CITES regulations have probably reduced the number of ivory outlets in Singapore, though there is no earlier survey of the number of shops selling ivory with which to compare.

Introduction to Singapore

Singapore (population 4.3 million) was visited from 21 to 26 November 2000 and from 8 to 9 January 2001. Since the Singapore islands were made up of only a small trading port and Malay fishing villages until they were incorporated into the British colonial empire in the 1820s there is no long tradition of ivory carving. Ivory craftsmen probably did not begin entering Singapore from China and Hong Kong to work until well into the 20th century.

Until Singapore joined CITES, it was a major destination for African raw ivory. Pearce (1989) attempted to quantify the amount of ivory imported from Africa between 1983 and l 987 from Singaporean Customs records. Ivory was classed with other types of wildlife products, but based on source and value of the declared consignment he calculated that over 536 tonnes of ivory entered the country in these four years from various African countries, It is extremely unlikely that an average of 136 tonnes of ivory was sold annually in the domestic market, thus Singapore acted then, as now, as a transit point for other Asian destinations (Menon and Kumar, 1998). In 1997 352 kg of name seals were seized in Japan coming from Singapore, and in 2000 about 500 kg of raw ivory shipped from Singapore were confiscated at Japan's Kobe port. In this instance a board member of the Japanese Ivory Association was one of the people who went to collect the ivory (TRAFFIC, 1997, 2000d). Also in 2000, more than 2 tonnes of raw ivory shipped from Douala, Cameroon via Singapore was seized in Taiwan (TRAFFIC, 2000d).

The quality of craftsmanship of the ivory displayed for sale was in general very high and at times astonishing in its intricacy and finesse.

Singapore has no indigenous elephants.

Sources and prices of raw ivory in Singapore

All ivory entering Singapore these days destined for the domestic market is worked. Several good-sized polished tusks were found for sale at three different shops. A tusk 1 m in length (~3 kg) was priced at USD 4,651 after discount in one shop and a 1.2 m tusk (3.5 kg) at USD 4,346 and a 1.5 m (5 kg) tusk at USD 5,291 in another shop after discount; all of these tusks were from South Africa. The price works out to about USD 1,058-1,550/kg, probably the most expensive raw ivory in the world. It is no wonder they had been sitting unsold for at least 15 years.

When one of the investigators (E.M.) visited Singapore in 1979 he found that most raw ivory was imported from Africa. The average wholesale price was USD 140/kg at that time.

Ivory workshops in Singapore

Informants said that no ivory carving was currently being done in Singapore as it was illegal, although two former carvers were found in Chinatown. One of the former carvers said that his pre- 1990 raw ivory had come from South Africa.

In 1979 one of the investigators (E.M.) found from 30 to 50 ivory carvers in Singapore, most of them Singaporean Chinese, but others from Hong Kong and China. The Singaporean craftsmen

did not carve ivory as well as those from Hong Kong and China, and they did not paint pieces as the others did, although they smoked some items to make them look older. According to shop managers, ivory carving had stopped by 1990.

Retail outlets and prices of worked ivory in Singapore

Table 29 shows the number of shops that were visited, the number that were selling ivory, and the total number of pieces seen. Some 23 shops out of 158 were selling ivory, or 14.6%. Most of the ivory was seen in the Tanglin Shopping Centre (7 of 38 art boutiques) on Tanglin Road and in the Singapore Handicraft Centre (7 of 18 shops) in Chinatown. Six outlets in shopping complexes on Orchard Road carried ivory, along with two more in the People's Park Shopping Complex in Chinatown, one in the Raffles City Complex and one in Little India. Some shops in Little India tried to pass off carved bone as ivory. No ivory was sold in museum shops, and none was seen in two shops selling Buddhist religious artefacts or in the airport.

Table 29
Number of shops and ivory items seen for sale in Singapore in November 2000 and January 2001,

No. of shops surveyed	No. selling ivory	No. of items
158	23	2,700

The number of pieces seen in retail outlets ranged from one to 677. The most common large items (>20 cm) were typical Chinese characters such as Kwan Yin, Maitreya, the Long Life sage and Immortals of the Taoist religion, fishermen, and 'fairies'. Taoist Immortals, sages and fairies have been the subjects of Chinese ivory carvings since Ming dynasty (1368-1644) times (St Aubyn, 1987). Other common large items were intricately carved tusks (village scenes, elephant bridges, dragon boats), incense burners and vases. One expensive boutique carried large, quite extraordinary sculpted and dyed vegetables, complete with garden insects, and bouquets of dyed ivory flowers. One vegetable and insect cornucopia, entitled Autumn Harvest, was priced at S$ 200,000 or USD 116,279. The accompanying plaque said that it had been carved in the Beijing Ivory Engraving Factory from 30 kg of ivory. Less common large items were the Singapore stylized lion and Canton or magic balls (carved hollow balls one inside the other, on a pedestal). Two shops in Chinatown, owned by one family, sold statuettes of Mao Tse Tung and other communist Chinese heroes.

The most popular small item by far (<10 cm) was the name seal, costing between USD 57.55 and USD 279. A person can have his name carved onto a seal for an extra S$ 80 (USD 46.50), with the seal costing an additional USD 57.55 to USD 279. Other common small items were the Chinese figures enumerated above, pendants and chopsticks. Ivory jewellery was much less commonly seen in Singapore than in other countries in this study.

Two shops in Chinatown also carried carved hippo tusks, some quite large. Vendors said that they came from Hong Kong, and it is possible that they originated in Uganda, as Martin and Stiles (2000) reported that a Kampala wildlife trader was shipping both hippo and elephant ivory from Uganda to Hong Kong. This shop also displayed African warthog tusks, both plain and carved. Expensive antique boutiques in the Tanglin Shopping Centre and on Orchard Road carried ivory tablets called *hu* that dignitaries held before them in the Tang and Ming dynasties when addressing the Emperor in the Forbidden City (St Aubyn, 1987). One shop in Chinatown carried a 25 cm African bust. The one shop carrying authentic ivory in Little India had a Mogul painting on a plaque identical to those seen in Sri Lanka. It was priced at S$ 950 (USD 552), ridiculously high.

Table 30 shows a range of the types of ivory items seen and their prices.

Esmond Martin

In Vietnam, ivory craftsmen work from 7 am to 4 pm because they need maximum sunlight to carve.

Esmond Martin

These ivory carvings made in Vietnam and for sale in 1991 are larger than the items now being produced for the market there.

Daniel Stiles

This downstairs antique shop in the Morning Market in Vientiane, Laos, had polished mounted tusks on display; the small 40 cm pair at the back were on offer for USD 900 while the other was not for sale

Esmond Martin

Canton balls, also called magic balls, are made in China in a process as shown here; they are still imported into Singapore for sale.

Daniel Stiles

This master carver is from a distinguished ivory carving family in Vietnam.

Esmond Martin

In the 1980s, ivory carvers in Singapore made a great variety of items, including dice for games.

Table 30
Retail prices for ivory items in Singapore in November 2000 and January 2001.

Item	Size in cm	Starting USD price*
JEWELLERY		
Bangle	<1	58-105
	1.5	183
Necklace, small beads	76-87	
Pendant	4-8	10-58
FIGURINES		
Elephant	6 x 12	337
Lion	6 x 20	570
Religious	5-10	291-1,279
	10-20	270-3,140
(Maitreya)	10	395-802
(Maitreya)	15	1,453
	20-30	1,163-5,698
(Buddhist monks, set of 18)	25	32,558
	30-40	1,744-6,163
(Kwan Yin)	50	20,349
TUSKS		
Carved	12	581
	25	4,651
	40	11,628-14,535
	45	1,744-14,535
MISC.		
Canton or magic ball	25	512-581
	40	5,814
Chinese cabbage	20	1,105
	25	2,442
Chopsticks, pair	116-122	
Dragon boat	100	14,535
Flower bouquet	38	20,930
	42	26,163
Gourd split open with grasshoppers	30	5,698
Incense burner	25	2,000
	30	5,581
	35	3,800
	50	11,628
Letter opener, painted	15	40
Name seal	6	58-87
(carved top)	6	116-279
	7 x 2	69-76
	7 x 3	97
	8 x 3	137

* For final price after bargaining, deduct about 20-35%.
N.B. USD 1 = 1.72 Singapore dollar.

In general, ivory pieces were considerably less expensive in the Chinatown shops. Only very wealthy people can afford the larger, more elaborate items. Vendors said that buyers of these pieces were typically Singaporean Chinese, though infrequently Chinese from Malaysia or Taiwan would also buy them. Chinese from China or Hong Kong could purchase the same pieces in China at lower prices, so they did not buy. Japanese and Koreans also bought large items occasionally, usually as special gifts for relatives or business associates. Most vendors said that sales of the larger items were slow, but satisfactory.

The Chinatown name seal makers do a very good business as many East Asians, both Singaporean and foreign, prefer ivory name seals with which to stamp their names. Even some European and American tourists buy a seal and have their name carved on it as a curiosity. The smaller figurines are bought almost exclusively by Chinese and Japanese, as the characters they represent are put in the house for good luck and most have some cultural or religious significance. Western tourists rarely buy them, as similar items can be found in other Asian countries at much lower prices, though they do buy jewellery pieces occasionally.

Informants said that retail prices were higher now than before 1990, because the Chinese source price had risen. It is quite likely that only some of the shops specializing in ivory in Chinatown actually still have pre-1986 stocks, and these are the outlets offering the lowest prices. The more expensive boutiques on Tanglin and Orchard Roads are nowadays importing carved pieces from China and Hong Kong and thus have to pay current market prices. One boutique owner in the Paragon on Orchard Road said that he had received an ivory shipment only one month previously from China, and a German boutique owner in the Tanglin Shopping Centre said that he has no problem bringing new worked ivory stocks in from China. Shop owners said that ivory comes in from many Chinese cities, with Beijing and Guangzhou specifically being mentioned. Thornton et al. (2000) reported that Hong Kong and mainland China ivory carving factories and shops still sell worked ivory to foreign tourists and businessmen and smuggle raw and worked ivory to Japan and other countries.

Other vendors said that they had stopped selling ivory after it was made illegal. The Yue Hua Department Store, a well known place in Chinatown, displayed beautiful, conspicuously labelled, cow bone carvings on its upper floor. Bone carvings of this quality may have the potential to act as satisfactory substitutes for elephant ivory items.

In 1979 one of the investigators (E.M.) found scores of shops selling ivory, so it seems the number of retail outlets has decreased significantly since then. Some USD 1.75 million worth of worked ivory items was imported in 1978, almost all of it from China and Hong Kong, with small amounts from India (USD 24,300) and Japan (USD 21,094) (Singapore Government, 1978). Most of the ivory items made in Singapore were jewellery pieces and animals (see Table 31). The most expensive piece seen was a Chinese-made 'King's Garden', which consisted of a group of trees and at least a dozen human figures within a garden setting measuring 120 x 60 cm and 40 cm high. It was made in the 1950s and was priced at USD 41,120.

Name seals

Table 31
Retail prices for ivory items in Singapore in 1979.

Item	Size	Country of origin	Starting USD price
Animal	2.5 cm	Singapore	13
	10 cm	Singapore	79
	25 cm	China	364
	30 cm	China	467
Bangle	small	Singapore	8
Buddha	20 cm	Singapore	18
Chinese junk	10 cm	China	94
Chess set (19th century)	10 cm pieces	India	1,402
Cigarette holder	10 cm	China	23
Necklace	3.75 cm	India	12
Netsuke	7.5 cm	Japan	60
Ear-rings, pair	2.5 cm	Singapore	14
Pendant	2.5 cm	Singapore	14
Tusk, carved	45 cm	China	701
	75 cm	China	1,262
	90 cm	Singapore	4,042
Tusk, polished (African)	2.75 kg		526
	26 kg		6,449
	42 kg		10,280

N.B. USD 1 = 2.14 Singapore dollars.
Source: Survey by Esmond and Chryssee Martin in August 1979.

Most of the buyers in the late 1970s were Americans, Europeans and Japanese, while the French and Germans were the main buyers of large polished and carved tusks. Few Singaporeans bought ivory, preferring gold or jade ornaments.

Status of the ivory trade in South and South East Asia

Presented in Table 32 is the aggregated data of the ivory trade indicators collected in the eight countries surveyed in this study.

Table 32
Ivory trade indicators for South and South East Asia in 2000-2001.

City, town	Retail outlets	Workshops	Craftsmen	USD price/kg for raw ivory			Min. no. of items
				<2kg	2-5kg	>10kg	
NEPAL							
Kathmandu	57	2	4	-	166-207	-	1,546
SRI LANKA							
Colombo	6	0	0	-	-	-	102
Kandy	7	~3	~4	-	-	-	355
Negombo	3	0	0	-	-	-	19
Polonnaruwa	3	3	~10	-	-	-	116
SW coast	3	0	0	-	~300	-	27
MYANMAR							
Mandalay	19	~6	~45	-	142	>350	2,363
Yangon	34	5	10	43-85	142	-	3,438
THAILAND							
Bangkok	164	-	~20	23-68	91-182	-	38,510
Chiang Mai	18	-	6?	-	-	-	10,020
Phayuha Kiri	12	-	~50	23-68	91-182	-	39,649
CAMBODIA							
Phnom Penh	55	-	~30	150	350	450	1,683
Siem Reap	4	-	-	-	-	90	
LAOS							
LuangPrabang	10	0	0	-	-	-	78
Vientiane	53	4	5	-	250-300	-	1,346
VIETNAM							
Hanoi	13	5*	~20*	-	350-500	-	777
HCMC	37	>1	>2	-	350-500	-	2,262
SINGAPORE							
Singapore	23	0	0	-	-	-	2,700
TOTAL	521	~30	~200	-	-	-	105,081

* Including Th'u'ong Tin village 20 km south of Hanoi.
N.B. - = no data.

It is clear that Thailand is by far the largest market for worked ivory in South and South East Asia with 88,179 pieces seen in only three main centres. By inference the country consumes the largest quantities of raw ivory. The amount of worked ivory in Thailand greatly exceeds the quantity seen in any African country in the 1999 survey (Martin and Stiles, 2000; and Stiles and Martin, 2001). The second largest market is Myanmar, with 5,801 pieces seen in the country's two major cities, followed by Vietnam (3,039) then Singapore (2,700). Following these are Cambodia (1,773 items), Nepal (1,546 items), Laos (1,424 items) and Sri Lanka (619 items). The pieces in Singapore were larger on average than those seen in Vietnam, thus in weight of ivory Singapore would be placed third.

The rankings of the countries based on estimated weight of worked ivory seen is the following:

1. Thailand
2. Myanmar
3. Singapore
4. Vietnam
5. Nepal
6. Sri Lanka
7. Cambodia
8. Laos

If all cities and towns where ivory was sold in each country were to be surveyed, Vietnam would probably surpass Singapore, but the other rankings would remain the same. The internal ivory markets in the first four ranked countries should be of some concern to national wildlife authorities and to CITES, while the last four ranked countries are of lower priority at current domestic trade levels.

Surprisingly, the total of approximately 105,000 worked ivory items seen in these eight Asian countries almost equals the total of about 110,000 pieces seen in the 15 African countries visited in the 1999 ivory markets survey (Martin and Stiles, 2000). Thus the scale of the internal ivory market of South and South East Asia is almost equal to that of Africa. It must be remembered that while all the ivory items seen in Africa were made from African tusks, the ivory items seen in South and South East Asia were made from both Asian and African tusks.

Retail ivory prices

Table 33 shows representative retail prices for ivory items seen during this survey. Singapore has by far the highest retail prices, followed by Vietnam. The least expensive worked items can be found in Myanmar. Singapore has the highest prices because it continues to import high quality items from China and Hong Kong, and the cost of living there is higher than any other place in the survey. The prices in Vietnam and Myanmar conform to the raw ivory prices in these two countries, with Vietnam having the most expensive (USD 350-500/kg) and Myanmar the cheapest (USD 142/kg). In Thailand, raw ivory prices are also relatively low, as are retail worked ivory prices. In South Asia, the retail prices in Sri Lanka are usually higher than those in Nepal.

Retail prices are influenced by several factors. For example, the same item will be more expensive in a high-priced boutique than in a temple or craft market. Prices also vary depending on the quality of workmanship and the age and historical value of the item. Pieces such as Maitreyas and Sri Lankan elephants cost more than other pieces of similar height because of their greater thickness, and other subjects such as Bodhisattvas have higher prices than items of similar height because of the intricacy of carving required.

Table 33
Retail asking prices for ivory items in US dollars in South and South East Asia in 2000-2001,

Ivory item	South Asia		South East Asia					
	Nepal	Sri Lanka	Myanmar	Thailand	Cambodia	Laos	Vietnam	Singapore
Bangle								
1.5 cm	42	-	70	56	8	40-85	70-150	183
Buddha amulet								
2.5-4 cm	19	26	8	11	14	8	23	-
Chopsticks								
pair	0	0	40	80	0	30	65	19
Cigarette holder								
10 cm	0	-	10	41	22	30	35-75	-
Ear-ring								
small	0	-	2-20	6	6	-	-	-
Elephant								
7.5-12 cm	191	305	-	68	0	50	-	337
Name seal, plain								
6-8cm	48	-	47	41	130	42	51	72
Necklace, beaded								
small	49	165	7	23	26	20	40-120	81
large	125	-	95	109	-	70	75-250	-
Religious figurine								
5-10 cm	52	69-303	30-150	91	18-65	10	30-150	291-1,279
Ring, plain								
small	4	-	6	9	0	-	15	-
Tusk, carved								
25-40 cm	-	1,343	102-350	318-8,795	0	-	380-700	4,651
40-50 cm	-	-	250	-	0	-	400-1,000	1,744-14,535
50-60 cm	-	-	568	1,301	0	700	400-2,000	-
75 cm	4,729	-	1,433	-	0	-	-	
90-100 cm	-	1,647	2,045	1,932	0	-	-	14,535
120 cm								116,279
Tusk, polished								
per kg	0	566	-	872	643	-	-	1,058-1,550

N.B. - = no data.

Trends in the ivory trade in South and South East Asia

As in Africa, past ivory trade studies present only fragmentary data and the picture on trends in the ivory trade are not easy to discern. Table 34 presents the data the investigators have been able to find in the literature of the indicators in the past compared with those of this study.

Table 34
Past and present ivory trade indicators for South and South East Asia.

Country	Year	USD price for raw ivory 1-5kg	No. of retail outlets	No. of workshops	No. of craftsmen	Minimum no. of items
Nepal	1979	140	-	-	30-50	-
	1982	92-115	-	-	8+	-
	1991	187	-	-	-	-
	1998	242	71	-	-	1,454
	2001	166-207	57	2	4	1,546
Sri Lanka	1979	170	-	-	107	-
	1987	110	-	-	-	-
	2001	300?	22	6	~1	620
Myanmar	1981	26	-	-	-	-
	1995	239	-	-	>60	-
	2001	142	53	~11	~55	5,801
Thailand	1979	99	-	-	-	-
	2001	159	194	-	~70	88,179
Cambodia	1991	150	-	-	-	-
	1992	340	-	-	-	-
	1994	400	-	-	-	-
	2001	338	59	-	~30	1,773
Laos	1988	100	-	-	-	-
	1990	200	-	-	10+	-
	2001	250-300	63	4	5	1,424
Vietnam	1989	150	-	-	-	-
	1990/1	100-200	>80	-	63-83+	-
	2001	350-500	50	>7	>22	3,039
Singapore	1979	140	-	-	30-50	-
	2001	-	23	0	0	2,700

N.B. - = no data.

The investigators believe that trends in the scale of the ivory market can be most cost-efficiently monitored and assessed by using the indicators of raw and worked ivory prices, number of ivory retail outlets, number of ivory workshops and craftsmen, and the number of items seen displayed for sale. Major changes in the numbers up or down between points in time can suggest changes in market scale and ivory demand, though several factors must be taken into consideration. For example, changes in ivory prices depend on the availability of ivory (supply), the number of people buying given quantities of ivory (demand), and local laws and efficiency of enforcement (risk). The relevant importance of these factors must be determined in order to explain a trend. More direct indicators such as ivory consumption and weight of displayed pieces have proven too difficult to obtain accurately and systematically in short visits. Longer visits, while desirable, are not feasible for region-wide studies due to budgetary and manpower constraints. Ideally, governments,

conservation organizations and donors could work together to develop lower cost monitoring and evaluation of ivory markets by qualified local people.

Where comparable data exist, some points to be concluded from Table 34 are the following:

1. In all the countries visited, raw ivory prices are higher in 2000/2001 than at any pre-1990 date (the date of the African ivory CITES ban).

2. Where raw ivory prices in the 1990s are known (Nepal, Myanmar and Cambodia), they are higher than for 2001.

3. There is a pattern for the countries where data are available, showing raw ivory price increase in the 1990s following the CITES African ivory ban and, except for the small markets of Laos and Vietnam, a subsequent drop in price by 2000.

4. The number of ivory retail outlets has declined from 1979 in Singapore and from the 1990s in Nepal and Vietnam.

5. The number of ivory carvers has decreased notably from earlier periods in Nepal, Sri Lanka, Laos, Vietnam and Singapore. In Myanmar the number has declined in Yangon but has remained about the same in Mandalay.

6. The minimum number of items seen in 1998 and 2001 in Nepal is about the same.

Overall trends

The raw ivory price trend in South East Asia seems to be affected by both supply and demand factors. Pre-1990 South East Asian prices were lower than in 2001, while pre-1990 African prices were higher than in 1999 (Martin and Stiles, 2000). With the 1990 CITES ban, raw ivory prices in South and South East Asia rose while raw ivory prices in Africa fell immediately post-ban, as exports of raw ivory out of Africa dropped, increasing supply in Africa and reducing supply in South and South East Asia. Illegal trade routes and methods to send ivory out of Africa to Asia have been developed in the interim, so African raw ivory price rises seen since 1990 in some countries may be related to this. Data are available from the early and mid-1990s in only the Democratic Republic of Congo, Cameroon, Nigeria and CÙte d'Ivoire (Dublin and Jachmann, 1992; Dublin *et al.*, 1995; and Stiles and Martin, 2001). Ivory demand rose in the 1980s with economic development in South East Asia. Demand kept growing in the early and middle 1990s, and ivory prices rose even higher with the slowdown of imports of African ivory after the CITES ban. Following the economic crisis of 1997 in South East Asia, raw ivory prices in 2001 have come down somewhat everywhere where data are available, except in Vietnam. Recent raw ivory price reductions in most of South East Asia may also be partially a result of increased imports of illegal African ivory into Thailand.

Ivory demand has probably declined in Cambodia, Laos and Vietnam over the past five years. The raw ivory price in Cambodia and the number of ivory craftsmen in Laos have definitely declined, suggesting decreased demand, as the supply is available, according to information that raw ivory from these countries is being exported elsewhere. Data and interviews with informants suggest that business is slower today than in the past in Vietnam, in spite of raw and worked ivory price rises, which are due to ivory scarcity and not to increased demand.

Although there are few earlier data, Thailand exported in the mid- 1980s some 200,000 +/- 50,000 pieces of worked ivory a year (Luxmoore, 1989), and many Bangkok shops displayed large quantities of ivory. The carving centre of Phayuha Kiri had 50-100 ivory craftsmen in 1989 (Luxmoore, 1989). In early 2001, that number was around 50. Although the number of tourists has increased significantly in Thailand from 1990, approaching 10 million a year in 2000, the CITES ivory ban has probably kept the Thai ivory market at roughly the same level it was in the 1980s, though almost all sales are now internal rather than wholesale exports. Work carried out by TRAFFIC East Asia in Thailand in 1997 supports this view for the 1990s: ". . . it appears that the

quantities [of worked ivory items] observed during the February 1997 survey are very similar to those observed in the same shops in l 993" (Nash, 1997b).

Myanmar shows some price anomalies. The 1981 raw ivory price of USD 26/kg in Myanmar compared to USD 92-115/kg in 1982 in Nepal and USD 170/kg in l 979 in Sri Lanka shows that demand for ivory was very low in comparison to nearby countries around 1980. This was certainly a result of the poverty in the country and lack of foreign visitors. By 1995 the price had skyrocketed to USD 239/kg, compared to USD 242/kg in 1998 in Nepal and USD 400/kg in 1994 in Cambodia. In early 2001 the raw ivory price had fallen to USD 142/kg for medium sized tusks. This is reliable information, as several vendors and craftsmen gave the same price in both Yangon and Mandalay. They also said that raw ivory prices had been increasing over the past few years. There was possibly a price upsurge in late 1995 due to the 1996 Year of Tourism promotion made by the Myanmar Government, which actually started in October 1995. There was a steady rise in the number of visitors to Myanmar in the late 1990s following economic liberalization, and ivory vendors said that business is good, so it seems there must have been a substantial increase in raw ivory supply since 1995 to explain the price drop. Perhaps the military operations in the north and east of the country are resulting in more elephant killing than people have realized up to now. Supply may also have increased in Myanmar if exports of Myanmar raw ivory to Thailand have decreased significantly as a result of cheaper African ivory imports to Thailand. Only a more in-depth study could answer the question.

The demand for ivory in South Asia has probably declined over the years in response both to increased prices and increased risks related to selling ivory, as evidenced by the significant decline in the number of retail outlets and ivory craftsmen in Nepal and Sri Lanka. Very little worked ivory is openly displayed in India and the number of ivory retail outlets, which secretly sell it today, and the number of ivory craftsmen have declined significantly since 1989 (Vigne, 1991).

Chinese cabbage and grasshopper carved in China

Discussion

This study is the first to examine in detail the ivory objects for sale in the main retail markets in South and South East Asia. In addition to identifying and quantifying the individual ivory items, data have been collected on the geographical origin of the imports of raw and worked ivory, the number of craftsmen, the wholesale prices of raw and worked ivory items, and the nationalities of the main customers. The purpose of this study is to provide base line statistics on the ivory trade of South and South East Asia in order to assess in the future any changes in supplies of raw ivory, demand for worked ivory items and trends up or down in the markets. Some Parties to CITES have attempted to re-open a legal trade in ivory, arguing that by selling tusks the supply of ivory will be expanded, thus lowering both the price of ivory and the incentive to poach elephants. Other Parties have argued that by releasing legal sources of ivory onto the world market, the demand for ivory will increase, forcing up the price of ivory and thus exerting more pressure on the remaining elephant populations. Irrespective of which argument one supports, it is necessary to have information on market trends, past and present, to enable conservationists and government officials to make rational decisions on whether or not limited ivory sales should once again be allowed.

Retail sales of ivory items in South and South East Asia

In South and South East Asia, there was a minimum of 105,081 ivory items for retail sale in the 18 cities and towns in the eight countries surveyed in late 2000 and early 2001. Phayuha Kiri, in Thailand, had the greatest number of ivory items (39,649), followed very closely by Bangkok (38,510), and by Chiang Mai (10,020). These three Thai places offered for sale 84% of the total ivory items seen in this survey. Unfortunately, there is no detailed previous survey of the number of ivory items or shops in Thailand, making it difficult to make a comparison with the past (Luxmoore, 1989; and Nash, 1997b). However, it appears from the discussions held with shopkeepers, that the amount of ivory available for retail sale has remained roughly the same since the mid- 1990s. Although many tourists from western countries have stopped buying ivory pieces in Thailand since 1990, there has been a very significant increase in the total number of tourists from 5,760,533 in 1993 (Anon., 1995) to about 9,500,000 in 2000. Amongst these are many more Asians who do buy ivory, in particular the Taiwanese and South Koreans.

There is, however, little correlation between the number of tourists visiting a specific country in South and South East Asia and the number of ivory items on view. Countries such as India, Malaysia and Indonesia, which attract over 2 million visitors a year each, have almost no ivory on display; while Myanmar, which receives under 300,000 tourists annually, displays at least 5,800 ivory items in shops and markets in two cities.

Unlike in Africa, diplomats, UN staff and personnel from international organizations are not major purchasers of ivory in South and South East Asia. The main buyers, instead, are tourists and businessmen from Europe (especially the French, Germans and Italians), Japan, Taiwan, Thailand, Singapore and the United States, in that order. Most of these people purchase small items, especially jewellery, which are more difficult to intercept at borders than larger pieces. The large items, such as carved or polished tusks are very rarely bought by tourists, but by local residents who believe that pairs of tusks are signs of good luck, prosperity and status.

With the change from strict socialist-planned economies in Myanmar, Laos, Cambodia and Vietnam to more market-orientated economies since the late 1980s, many of the retail outlets of the cities studied in these countries have flourished, and more ivory items have consequently been put on sale. The amount probably peaked in the mid-1990s, and has remained more or less stable since then.

The sources and movement of tusks in South and South East Asia

Sri Lanka, Myanmar, Cambodia and Laos are the only countries reported here that can and do supply the internal ivory market from indigenous elephants without resorting to raw ivory imports. Sri Lanka, Laos and Cambodia can only do this because the internal markets are so small, but they

do import small quantities of worked ivory pieces that local carvers cannot or choose not to make themselves. Any increase in market demand in any of these countries would spell disaster for indigenous elephant populations. Myanmar, if the ivory trade remains at current levels, will probably not be able to supply its own demand before the end of this decade. Already, ivory vendors and carvers in Yangon are complaining of a shortage of raw ivory, and there is currently a demand for imports of raw ivory there. Ivory workshops in Mandalay are at present supplying most worked pieces seen for sale in both Mandalay and Yangon.

Illegally, ivory in its raw form is being exported from several African countries and imported into some South East Asian countries for use by the artisans. By far, the largest amount goes to Thailand because Thai craftsmen consume more raw ivory than any others within the region. Since this commerce is illicit, it is not possible to quantify the annual amounts, but they are significant. Those importing African raw ivory into Thailand like it because it is easily available and much cheaper at this stage than Asian ivory, according to the traders. In 1999, tusks could be obtained from merchants in the cities of West and Central Africa for as little as USD 20 per kg, compared with a minimum of USD 140 per kg for comparable Asian tusks. According to the craftsmen, it makes no difference to most craftsmen whether the ivory is of African or Asian origin. There is a shortage of Asian ivory and the cheaper imports of African tusks have reduced the poaching pressure on Thailand's wild elephants.

There is a considerable movement of tusks from Asian elephants in the region. Vietnam obtains illegal raw ivory from Laos, Cambodia, and a little from Africa. Poachers from Vietnam enter Laos and Cambodia to poach elephants and other animals; they are seriously threatening the survival of the remaining wild elephants and other endangered animals. Vietnam's own wild and domesticated elephant populations continue to decline in importance as a raw ivory source in proportion to the decline in elephant numbers themselves, which in 2000 probably numbered only about 350 wild and domesticated combined. The country is currently facing a severe raw ivory shortage, reflected in the high price of wholesale raw ivory, the highest in any country in this report.

Indian traders supply some of the demands of the craftsmen in Nepal and Myanmar. Other traders on the borders of Myanmar, Cambodia and Laos purchase ivory for Thai craftsmen.

Ivory from domesticated elephants is also supplied to craftsmen. Some of these are moved back and forth between Thailand and Myanmar, and in either country may have their tusks tipped, and these are then sold to craftsmen. Working elephants also go from Vietnam and Laos into Cambodia (Oan Kiry, Manager of Compagnie des Elephants d'Angkor, a tourist enterprise which owns 11 domesticated elephants in Angkor Wat, pers. comm., 2001), and from India into Nepal, and the tusk tips of these are sold as well.

The movement of carved ivory in South and South East Asia

In Kathmandu, the percentage of foreign-made ivory items has gone up since 1998, and in 2000 only 38% of the ivory objects offered for sale were made in the country. This is because there are just a few craftsmen still practising the art of ivory carving, and foreign imports are cheaper. The worked items come in illegally from China, including Tibet, and India.

In 1989, Luxmoore estimated that about half of the many thousands of ivory pieces for sale in Thailand had been made in China and Hong Kong, but by 2001 this percentage had somewhat declined. One could, of course, still see available for sale many new and old Chinese pieces, along with antiques from India, Myanmar, Cambodia, Laos, Vietnam, Indonesia and Japan. Thailand has the greatest variety of ivory objects for sale anywhere in the regions studied, and attracts the largest number of collectors from all over the world.

Singapore is the second biggest importer of illegal ivory after Thailand, all of it worked. The main sources are China and Hong Kong. Singapore also acts as a trans-shipment hub for raw and worked ivory going from Africa to Eastern Asian destinations. There has been no ivory carving here since 1990.

Sri Lanka imports small quantities of worked ivory from India. These are mainly Hindu religious figurines from Chennai (Madras) and Moghul-style paintings on ivory plaques from Rajasthan.

Vietnam (Ho Chi Minh City) had on display ten African-made items while Singapore and Sri Lanka each had one. These are very rare in South and South East Asia as Asians do not generally

appreciate African worked ivory because they usually do not like the African styles of carving nor the subjects carved.

Ivory substitutes

Since the price of raw tusks has increased since the late 1980s in all the cities and towns recently surveyed, and tusks are in short supply in several places, there has been a move by craftsmen to produce items out of materials that resemble ivory. Resins, bones (mainly from the elephant, cow, fish and water buffalo), plastic and painted wood are commonly used.

In Cambodia over 90% of the small Buddhas and flower buds are made from bone and other materials; they are visually very similar to elephant ivory. Sometimes, the vendors themselves cannot tell the difference. Occasionally, they will knowingly try to sell a bone piece as ivory, but outright fraud is uncommon in Cambodia, as well as in Laos. The thousands of Buddha amulets and pendants seen in Laos are carved from bone or deer antler; there are a few pieces of a bone resin mixture.

In Sri Lanka also, the majority of items seen in the shops are not made of ivory, but of bone or moulded resins. Some are stained or tinted to make them look old. It is often difficult to distinguish authentic ivory when the pieces are small. For example, when Charles Santiapillai organized his ivory survey in Sri Lanka in 1997, his investigators were unable to tell the difference between real ivory and the substitutes used (Santiapillai

et al., 1999). In their article, they consequently made no differentiation in their Table l between the number of fake and real ivory pieces for sale in 86 shops (Santiapillai *et al.*, 1999). This is understandable, as the investigator here also had difficulties in identifying the materials used in some of the pieces in Sri Lanka, when he could not handle them.

In Thailand there are many curios made out of different kinds of bone and other materials similar in appearance to ivory, but usually the shopkeepers display these in vitrines and on shelves separately from ivory pieces. A few do mix them up, however, and claim that all are ivory. The main place for producing both ivory and simulated ivory items in Thailand is Phayuha Kiri, but neither the wholesalers nor the retailers here mix them up, and in fact they package them differently.

Myanmar has quite a number of carved bone items in the shops at the Shwedagon Pagoda in Yangon and the Maha Muni Pagoda in Mandalay, some of them being elephant bone. Only one shop selling ivory in the New Bogyoke Market in Yangon displayed carved bone. The workmanship of the carved bone pieces was greatly inferior to that on ivory.

In Singapore carved bone was found mainly in Little India and in the cheaper souvenir shops in Chinatown and in department stores along Orchard Road. Bone was rare or absent in the more expensive boutiques.

The decline in the number of craftsmen

In each of the countries surveyed the number of ivory craftsmen has declined during the past decade. In Singapore there is not one who is still active, and there are no more than five each in Kandy, Kathmandu, Ho Chi Minh City and Vientiane. Except in Myanmar, younger men are no longer being attracted into this profession, believing that there is not much of a future in ivory carving. Few shop owners in Nepal and Cambodia are interested in sponsoring local ivory craftsmen because the type of item that sells best is jewellery and this can be imported from China and Thailand at lower costs. Some of the traditional ivory items, such as intricately carved window frames in Nepal, jewel-encrusted ivory elephants (Perahera) in Sri Lanka, lamps in Vietnam and large sculptures of people and animals in Cambodia are no longer in demand.

With the exceptions of Thailand and Myanmar, the shortage of raw ivory and consequent expensive price has also stabilized or lowered demand, so fewer ivory craftsmen can make a decent living from the industry.

The decrease in the quality of ivory items

There has been a marked decline in ivory craftsmanship, mainly because it is hard to sell modern, expensive sculptures. It is uneconomic to stock high-quality pieces of any type of item because few customers are discriminatory and willing to pay high prices for finely made objects. Few even

appreciate the older masterpieces. For example, in Kathmandu, shopkeepers have great difficulty in trying to sell the exquisitely carved, traditionally designed sculptures and model window frames that were once in vogue among the Nepalese, and foreign tourists find them too expensive and too big to smuggle into their home countries.

Prior to the economic boom starting in the 1980s in South East Asia, the main buyers of worked ivory were the upper classes, who demanded high quality. With higher incomes leading to a broadened middle and upper class, and a greatly increased number of foreign tourist and business visitors, the ivory markets grew in the 1980s. These new ivory buyers were not as discerning as the earlier ones, and in addition younger, less skilled craftsmen were employed to meet the increased demand. Good ivory workmanship fell as a result. This pattern continued into the 1990s, and the death and/or retirement of the old master craftsmen from the pre-1980 period have lowered overall worked ivory quality further.

Thais have over 80% of all the ivory items for sale in South and South East Asia, and at least 85% consists of jewellery that requires little skill to produce and has no real artistry. The few sculptures being carved in Thailand now are not as intricately or carefully carved as those made 20 years ago. This is also true for almost all the sculptures being made in other countries in the region. When one looks at the older sculptures in Bangkok's antique shops, which were made in Thailand, Myanmar, Cambodia, Laos, Vietnam and China, the difference in quality between these and modern works is striking. Blame can be partly placed on foreign tourists who do not appreciate fine workmanship, but seem to prefer cheap, small items, even when they are crude. Some tourists, however, lamented that it was indeed dismaying to see ivory being wasted this way.

Myanmar and Singapore are exceptions to this trend. Singapore imports Chinese worked ivory, where standards remain high, and Myanmar, while it does produce many mediocre quality ivory carvings, also has a few master craftsmen, all in Mandalay. The Myanmar Government considers ivory carving to be a national cultural heritage, and it is encouraging the continuation and the improvement of ivory carving skills through support given to the Myanmar Art and Artisans Association. Myanmar can be expected, therefore, to preserve a sector of high-level ivory craftsmanship — as long as the ivory holds out.

The illegal killing of elephants in South and South East Asia

Table 35 demonstrates that there has been a clear decline in the number of wild elephants between the late 1980s and 2000 in all eight countries in the study, with the exception of Thailand. In Vietnam (92.3%), Cambodia (87.5%) and Laos (55%) this decline has been quite drastic. These figures are gross estimates and should be treated with some caution concerning the actual numbers, but the relationship of the late 1980s to 2000 figures is reasonably reliable. There has been a similar decline in domesticated elephant numbers (Lair, 1997), though not as serious.

What is the cause of this approximately 40% decline in wild elephant numbers in slightly over ten years? Certainly human population growth and deforestation of elephant habitat by logging operations and agricultural extensions has had an effect, along with the killing of elephants as a result of human-elephant conflict. But the scale of the ivory trade and illegal killing of both wild and domesticated Asian elephants reported in the country chapters also points to the importance of the crafting of new ivory items and the sale of worked ivory as a cause of the decline in Asian elephant numbers. There is still enough natural habitat left in each of the South and South East Asian countries surveyed (and those not surveyed) to support existing, and in many cases larger, elephant populations (Kemf and Santiapillai,

Table 35
Wild elephant population estimates for South and South East Asia in the late 1980s and 2000.

	Late 1980s	2000
Nepal	90	70
Sri Lanka	2,950	2,500
Myanmar	6,500	4,820
Thailand	1,650	1,650
Laos	2,500	1,125
Cambodia	2,000	250
Vietnam	1,750	135
Total	17,440	10,550

N.B. Almost all the figures are approximate, especially for the late 1980s, but the trend has been mostly downwards. References: Santiapillai and Jackson, 1990; and Kemf and Santiapillai, 2000, except for Sri Lanka, which is explained in the chapter on Sri Lanka.

2000). Therefore, the most immediate threat to elephant populations in these countries is poaching for ivory and other elephant products, not habitat loss.

Although there is movement of raw ivory among the countries of South and South East Asia, not much is exported from the region. Once an elephant is poached for its ivory, other parts of the animal are often taken: bones and teeth, which are also used in the ivory carving industry; hair for bracelets and rings; tail for decoration; trunk tip, penis, lungs, teeth, skin, nails and lips for medicinal purposes; and occasionally, such as in northern Cambodia, the meat is eaten.

Another factor driving poachers to go after elephants and other animals is that rural people in Myanmar, Cambodia, Laos, and Vietnam are some of the poorest in all of Asia, and illicit hunting is one of the few ways they can make money. Taking Cambodia as an example, until very recently, farming was extremely risky because of the presence of so many land mines in the most fertile agricultural areas. Salaried jobs are few, except in the army and government, and even there, salaries are very low. In Phnom Penh, on the other hand, 1 kg of raw ivory is worth the equivalent of the payment for 17 months' work for the government.

Ivory dealers in Cambodia have even selected the elephants whose tusks they want. They lend cameras to the poachers, tell them to go and photograph the elephants they see, bring back the camera to process the film, then the dealers choose which of the elephants they want the poachers to get (Chheang Dany, pers. comm., 2001). Such a practice is now also going on in Nepal for selecting rhinos with the larger horns (Gopal Prasad Upadhyay, Chief Warden, Royal Chitwan National Park, pers. comm., 2001).

Thailand's wild elephant population has remained stable at around 1,650 from the late 1980s (Santiapillai and Jackson, 1990) to 2000 (Kemf and Santiapillai, 2000), although, at least 24 wild bull elephants are known to have been killed for their ivory between 1992 and 1997 (Srikrachang and Jaisomkom, 1999).

Myanmar is second only to India for the largest wild elephant populations in Asia. The numbers, however, are only guessed at. In 1982, Myanmar's Forest Department estimated, without carrying out detailed surveys, that there were about 6,250 wild elephants and the IUCN Asian Elephant Specialist Group estimated 3,000 to 10,000 (mid-point 6,500) wild elephants in the late 1980s (Santiapillai and Jackson, 1990). In 2000, the number was perhaps 4,820 (Kemf and Santiapillai, 2000). The country's elephants provide almost all the ivory used in the carving industry, and the traders admit that a lot of their ivory comes from poached elephants.

In Sri Lanka elephants are being killed by poaching, by land mines in the civil war zones in the north, and in human-elephant conflict by farmers. In the 1990s the deaths of about 200 wild elephants were documented (Alahakoon and Santiapillai, 1997; Anon., 1997; and Kambe, 2000), and certainly many more undocumented deaths occurred. The wild elephant population, as stated in the Sri Lanka chapter, declined from about 12,000 in 1900, to approximately 2,950 around 1990 to between 2,000 and 2,500 in 2000. The IUCN Asian Elephant Specialist Group's "probable" number of 3,783 (Kemf and Santiapillai, 2000), based on de Silva's (1998) admitted guess, is not credible given earlier elephant population estimates and rates of elephant deaths (Thouless, 1994; and Alakahoon and Santiapillai, 1997).

Law enforcement efforts in South and South East Asia

Not one government in either of the regions has adequate controls over its ivory carving industries or shopkeepers selling ivory. Except for Laos, which has its own legislation prohibiting imports and exports of ivory, and Cambodia, which has signed but not yet ratified CITES, all the other countries surveyed in 2000 and 2001 are Parties to CITES, which prohibits commercial international trade in elephant ivory. Cross-border trade, however, in raw and worked ivory is still common as all these governments do not enforce the laws. Some government officers, in particular Customs officers in Myanmar, Cambodia and Laos, actually facilitate this trade, refusing to check for the export of tusks through border points. One of the investigators (E.M.) has witnessed this on the Myanmar/Thailand border at Tachilek and Mae Sai (Martin and Redford, 2000).

Sometimes, Customs officers take bribes to allow the movement of illicit wildlife products. This has been documented in Cambodia (Sun Hean, 2000) and Laos (Nooren and Claridge, 2001), and is also common elsewhere in the region. Table 36 summarizes the legal status of the sale of worked ivory internally in the countries visited.

Table 36
Legal status of domestic sales of ivory items in the countries surveyed of South and South East Asia.

Legal	Illegal	Conditional
Myanmar	Sri Lanka Nepal Laos Vietnam	Singapore (legal if registered with the government prior to November l 986) Thailand (legal for domesticated Thai elephant ivory only) Cambodia (legal for items made from old ivory, presumably pre-1994)

In four of the countries surveyed, Nepal, Sri Lanka, Laos and Vietnam, it is prohibited by local laws to sell either new or old ivory objects, but there were over 6,600 items in these countries, openly displayed for sale in late 2000 and early 2001. Although Sri Lankan authorities occasionally try to close down their internal illegal trade in ivory objects, the governments of Nepal, Laos and Vietnam rarely take any action. One of the investigators (E.M.) has repeatedly reported to the authorities in Nepal that there are over 1,500 ivory items on sale in Kathmandu, but nothing has been done to try to rectify the matter.

In Singapore and Cambodia, national laws prohibit the sale of "new" ivory objects, but in practice most of the items on view in the shops are newly made. The governments, for whatever reasons, do not enforce their own laws. In Thailand, objects made from the tusks of domesticated Thai elephants are legally for sale, but not from wild or imported ones. The Thai authorities, however, almost never visit the main retail or wholesale shops to try to find out the origin of the ivory, according to the shopkeepers. In Myanmar the government prohibits the trade in whole raw tusks, but whole worked tusks are legally openly on display for sale in Yangon and Mandalay shops.

Government neglect, apathy, lack of manpower, and outright official corruption have greatly aided the poaching of elephants in most of these countries, except in Nepal where elephant poaching is rare. The majority of Nepal's wild elephants are in remote areas of Royal Bardia National Park, and wildlife poachers do not have contact with ivory dealers. Singapore, of course, has no wild elephants. In Myanmar, Cambodia, Laos and Vietnam, there are not enough guards to protect the elephants, and often government officers have little motivation, due to their low salaries (less than USD 50 a month), and inadequate leadership from their superiors. Therefore, poachers are rarely caught. Worst of all is the corruption practised by the army and police forces in some of these countries. In Myanmar, army personnel actually hunt the elephants (Myint Aung, 1997). In Cambodia, in October 2000, the soldiers and police who were directly involved in the killing of several elephants in the Cardamom Mountains were not prosecuted. The Cambodian army has been responsible for the killing of elephants in other parts of the country as well; moreover, close to the capital city, in Kirirom National Park, there is poaching carried out by the military (Global Witness, 2001). Official vehicles are used to transport wildlife products to shops owned by the military and policemen in small towns and villages (Sun Hean, 2000).

In Sri Lanka, Myanmar and Cambodia the central governments do not have complete control over their territories. There are various rebel groups who are fighting the authorities in order to try to win their own autonomy. They also kill elephants and trade in their products. Sri Lanka is relatively effective in controlling the illegal transport of raw ivory, because of the numerous military roadblocks, and in the manufacture and selling of worked pieces in and around Colombo. It is not as efficient in controlling the transport of worked pieces or the working of ivory in Kandy and around Polonnaruwa. In Myanmar, only the transport of raw ivory is illegal, but it routinely finds its way from the northern and eastern forests to Mandalay, presumably with the connivance of the authorities.

Effect in South and South East Asia of the 1999 CITES approved auctions of government ivory stocks in southern Africa to Japan

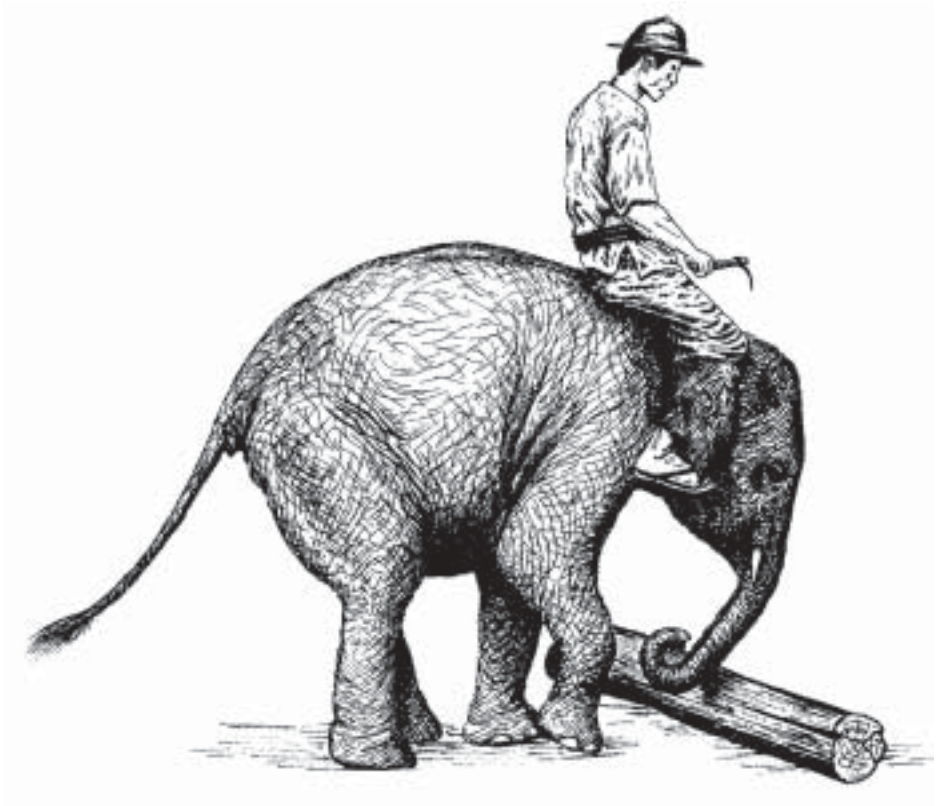
Some ivory dealers in Africa mistakenly thought that the one-off sales of Botswanan, Namibian and Zimbabwean tusks in 1999 to Japan might be the beginning of the re-opening of the international ivory trade (Martin and Stiles, 2000). There was evidence of greater sales of ivory objects in a few

shops in southern Africa, as some tourists also presumed that the ivory restrictions were being lifted.

Not a single shop owner nor vendor, however, in South or South East Asia mentioned these official sales in southern Africa to the investigators because they either did not find them significant or more likely had never heard of them. Thus, the auctions did not cause the ivory trade to increase in South and South East Asia, as had been feared and has occurred in some African markets.

Pessimistic views on the future of the ivory trade

Because the craftsmen do not see much of a future for their profession, they are not encouraging younger members of their families to learn the art. In Nepal, the few remaining ivory craftsmen doubt that any market will remain for their pieces in another ten years. In Vietnam, many craftsmen have already given up, and in Sri Lanka, where the government has cracked down, ivory carving definitely seems to be a dying profession. In Thailand, especially in Phayuha Kiri, some of the craftsmen are worried about obtaining adequate supplies of tusks in the future. Only in Myanmar, where there is currently a healthy ivory market and active government support to ivory crafting, is there any optimism about the future of the ivory industry.



Thai mahout with a young domesticated elephant.

Conclusions

The overall scale of the ivory trade in South and South East Asia is of great concern. Although the scale is low in Nepal, Sri Lanka, Cambodia and Laos, the trade seriously threatens the small and dwindling wild and domesticated elephant populations. Vietnam's elephant population has almost been wiped out because of the demand in Vietnam's markets for ivory and other elephant products, and a steady high demand for ivory in Myanmar is threatening its elephant populations. Singapore puts pressure on both Asian and African elephants by importing newly carved ivory from China. Thailand's elephant population has remained stable over the last decade because it illegally imports large amounts of raw ivory from Africa, and secondarily from Myanmar.

The wholesale price of raw ivory, unlike in Africa, was higher in 2001 than it was in the late 1980s in the countries surveyed in South and South East Asia. In 2001 the average price of tusks was over five times higher than in Africa (USD 250 versus 45), due to the strong demand from mostly foreign tourists and businessmen and the scarcity of supply. This high price of tusks has put severe pressure on Asian wild elephants, resulting in a decline of perhaps over 80% in Cambodia, Laos and Vietnam in the 1990s. If this demand for tusks continues at the present rate, more Asian elephants will be killed because in all of the countries surveyed (except Singapore which has no elephants) the economic return for the poachers and middlemen is very high in the poverty-stricken rural communities.

None of the governments for the countries surveyed has control over the ivory trade; thus it is probable that customers will continue to buy thousands of ivory items annually. Although the number of ivory craftsmen decreased in the 1990s in most of the countries surveyed, Chinese businessmen continued to export illicitly Chinese-made items to many countries in South and South East Asia. The investigators counted over 105,000 ivory items for retail sale in the 17 main towns and cities of the eight countries studied, which is similar to the numbers found in the main cities for the whole African continent. The number of foreign tourists and businessmen visiting South and South East Asia, around 20 million a year, has been increasing at over a million per annum, ensuring that the ivory business will continue.

The governments of these countries need to improve their domestic legislations and enforce them, which has been done quite successfully in India. Cambodia and Laos must become full members of CITES, and all the countries must implement the CITES regulations by enforcing the prohibition of commercial imports and exports of raw and worked ivory. A public awareness campaign aimed at ivory traders and their customers is also required, emphasizing the adverse effects of the ivory trade. In addition, a similar public awareness effort is required in the western world to target potential customers of ivory items in South and South East Asia.

It is much more economical to control the marketing side of the ivory industry than to prevent the illegal killing of elephants. If there is a significant decline in the market for ivory, prices should fall and elephant poaching will decrease dramatically. Unfortunately, it appears that demand for ivory has remained steady or increased in some places in Asia since the mid- 1990s, stimulating elephant poaching. A high demand for ivory in only a few countries can effect elephant populations in many more. If CITES and the national governments of the countries surveyed do not improve and enforce existing laws and decrees, the ivory markets of the world will continue to claim the lives of hundreds or thousands of elephants every year.

References

Alahakoon, J. and Santiapillai, C. (1997). Elephants: unwitting victims in Sri Lanka's civil war. *Gajah* 18, 63-65.

Anon. (1987). Weighty issues of survival. *Asiaweek*, August 2, 50-5 l.

Anon. (1995). *Thai/and in Figures, Third Edition 1995-1996*. Alpha Research Co. Ltd., Bangkok.

Anon. (1997). Tuskers poached. *Gajah* 18, 69.

Anon. (2000). Thais Seize 112 Elephant Tusks. Associated Press (AP), l May.

Anon. (2001a). Huge Illegal Trade in Wildlife: WWF. *The Nation,* Bangkok, 8 March.

Anon. (2001b). Legal loopholes help ivory trade, put elephants at risk. *Bangkok Post,* Bangkok, 11 May.

Anon. (2001c). Draft Wildlife Law. Version 29 January 2001. Department of Forestry and Wildlife, Kingdom of Cambodia, Phnom Penh, unpublished.

Baird, l. (1996). Foreign Investment and Wildlife Trade Hit Ratanakhiri. *IPPL* (International Primate Protection League) *News* 23 (1), 19-20, April.

Bauer, K. (ed.) (1995). *Illegal Trade of Wildlife Products in Nepal.* WWF Program Report Series No. 9, Kathmandu.

Cao, Van Sung (1995). *Ressources Biologiques et Environnement au Vietnam.* Editions The Gioi, Hanoi.

Caughley, G. (1995). Comments on elephants in Burma. *Gajah* 14, 1-9.

Chin, H., Kumara, P., Piyadasa, W., Ganegoda, G. and Perera, V. (1998). *Domesticated working elephants in Sri Lanka.* Paper presented at the First National Symposium of Elephant Management and Conservation, 29-30 May 1998, Colombo, Sri Lanka.

Chou Ta-Kuan (1993). *The Customs of Cambodia.* The Siam Society, Bangkok.

Dawson, S., Tuoc, D., Khoi, L. and Cuong, T. (1993). *Elephant Surveys in Viet Nam.* WWF-Vietnam Project Report VN 0005. WWF, Hanoi, Vietnam.

Dawson, S. and Tuoc, D. (1997). Status of elephants in Nghe An and Ha Tinh Provinces, Vietnam. *Gajah* 17, 23-35.

Dublin, H. and Jachmann, H. (1992). *The Impact of the Ivory Ban on Illegal Hunting of Elephants in Six Range States in Africa.* WWF, Gland, Switzerland.

Dublin, H., Milliken, T. and Barnes, R. (1995). *Four Years After the CITES Ban: Illegal Killing of Elephants, Ivory Trade and Stockpiles.* IUCN, Gland, Switzerland.

Duckworth, J., Salter, R., and Khounboline, K. (1999). *Wildlife in Lao P D.R. 1999 Status Report.* IUCN/WCS/CPAWN, Vientiane, Laos.

Dwivedi, P. (ed.) (1975). *Nepalese Art in a Nutshell.* National Museum, Kathmandu.

Dy Phon (2000). *Dictionary of Plants Used in Cambodia.* Published by Dy Phon, Phnom Penh.

Global Witness (2001). *The Credibility Gap — and the Need to Bridge* ***it.*** Global Witness, London, May.

GoM (Government of the Union of Myanmar) (1994). Ministry of Forestry, Forest Department, *Notification No. 583/94, 26 October.* Yangon.

Heffernan, P., Chheang Dany, Venkataraman, A., Sam Han, Kuy Tong and Weiler, H. (2001). Studies of the Asian Elephant *(Elephas maximus)* in Mondulkiri and Kampong Thom Provinces, Cambodia. Field Survey Results: Interim Report. Fauna and Flora Indochina Programme and Wildlife Protection Office, Department of Forestry and Wildlife, Phnom Penh and Hanoi, unpublished, March.

Heinen, J. and Leisure, B. (1993). A new look at the Himalayan fur trade. *Oryx* 27 (4), 231-238.

Heinen, J., Yonzon, P. and Leisure, B. (1995). Fighting the illegal fur trade in Kathmandu. *Conservation Biology* 9 (2), 246-248.

Hendavitharna, W., Dissanayake, H., de Silva, M. and Santiapillai, C. (1994). The survey of elephants in Sri Lanka. *Gajah* 12, 1-30.

Hirth, F. and Rockhill, W. (ed.) (1911). Chau Ju-kua. His Work on the Chinese and Arab Trade in the twelfth and thirteenth Centuries, entitled Chu-fan-chi. St Petersburg.

Ishawaran, N. and Punchi Banda, A. (1982). *Conservation of the Sri Lan/can elephant — Planning and management of the Wasgomuwa-Madura-Gal Oya complex of reserves.* Final Report of IUCN/WWF Project 1783. WWF International, Gland, Switzerland.

Japan Government (1886). Annual Return of the Foreign Trade of the Empire of Japan, 1885. The Bureau of Customs, Tokyo.

Jayawardene, J. (1994). *The Elephant in Sri Lanka.* The Wildlife Heritage Trust of Sri Lanka, Colombo, Sri Lanka.

JWCS (Japan Wildlife Conservation Society) (2000). *Effect of resumption of international trade on Japanese ivory market.* JWCS, Tokyo.

Kambe, S. (2000). Sri Lanka Elephant Report. Unpublished.

Kemf, E. and Santiapillai, C. (2000). *Asian Elephants in the Wild.* WWF Gland, Switzerland.

Kiernan, B. (1996). *The Pol Pot Regime: Race, Power and Genocide in Cambodia under the Khmer Rouge, 1975-80.* Yale University, New Haven and London.

Kunz, G. (1916). *Ivory and the Elephant in Art, in Archaeology, and in Science.* Doubleday, Page and Co., Garden City, New York.

Lair, R. (1997). *Gone Astray: The Care and Management of the Asian Elephant in Domesticity.* FAO, Bangkok.

Li, W. and Wang, H. (1999). Wildlife trade in Yunnan Province, China, at the border with Vietnam. *TRAFFIC Bulletin* 18(1), 21-30.

Luxmoore, R. (1989). The Ivory Trade in Thailand. In: The Ivory Trade and the Future of the African Elephant, Prepared for the Seventh CITES Conference of the Parties, Lausanne. Ivory Trade Review Group, Oxford, UK, unpublished report.

Martin, C. and Martin, E. (1990). Sri Lankan ivory sculpture in retrospect. *Pachyderm* 13, 35-38.

Martin, E. (1992a). The trade and uses of wildlife products in Laos. *TRAFFIC Bulletin* 13(1), 23-28.

Martin, E. (1992b). Observations on the wildlife trade in Vietnam. *TRAFFIC Bulletin* 13(2), 61-67.

Martin, E. (1997). Wildlife products for sale in Myanmar. *TRAFFIC Bulletin* 17(1), 33-44.

Martin, E. (1998). Ivory in Kathmandu. *Oryx* 32 (4), 317-320.

Martin, E. and Phipps, M. (1996). A Review of the Wild Animal Trade in Cambodia. *TRAFFIC Bulletin* 16 (2), 45-60.

Martin, E. and Redford, T. (2000). Wildlife for Sale. Biologist 47 (1), 27-30.

Martin, E. and Stiles, D. (2000). *The Ivory Markets of Africa.* Save the Elephants, Nairobi and London.

Martin, E. and Vigne, L. (1989). The Decline and Fall of India's Ivory Industry. *Pachyderm* 12, 4-12.

Maskey, T. (1 998a). Sustaining Anti-poaching Operations and Illegal Trade Control. WWF Nepal Program Report Series No. 37, Kathmandu.

Maskey, T. (1 998b). *The Status of CITES implementation and trade of wild animals in Nepal.* Ministry of Forests and Soil Conservation, Kathmandu, unpublished report.

Menon, V. and Kumar, A. (1998). *Signed and Sealed: The Fate of the Asian Elephant.* Asian Elephant Research and Conservation Centre, Bangalore, India.

Ministry of Tourism, Kingdom of Cambodia (2001). *Cambodia Tourism Statistical Report in 2000.* Statistics and Information Office, Planning Development Department, Phnom Penh.

MyintAung (1997). On the distribution, status and conservation of wild elephants in Myanmar. *Gajah* 18, 47-55.

Myint, Nan (n.d.). *Myanmar traditional sculpture in ivory.* Mandalay, Myanmar Handicrafts & Traditional Ivory Carvings Workshop Co-op.

Nakhonphanom, S. (1993). Ivory Carving. In: *Thai Minor Arts* (ed. Prapatthong, S.). National Museum Division, The Fine Arts Department, Bangkok.

Nash, S. (ed.) (1 997a). *Fin, Feather Scale and Skin: Observations on the wildlife in Lao PDR and Vietnam.* TRAFFIC South East Asia, Petaling Jaya.

Nash, S. (ed.) (1997b). *Still in Business: the ivory trade in Asia, seven years after the CITES ban.* TRAFFIC International, Cambridge.

Nooren, H. and Claridge, G. (2001). *Wildlife Trade in Laos: the End of the Game.* Committee for IUCN, Amsterdam, Netherlands.

Olivier, R. (1978). Distribution and status of the Asian elephant. *Oryx* XIV(4), 412-416.

Pearce, D. (1989). Imports of unworked ivory to Singapore, 1979-1987. ITRG/EG 89-05, CITES Gland, Switzerland, unpublished report.

Pringle, C., Murgatroyd, C. and Shakya, M. (1999). CITES Compliance in Nepal. Kathmandu, unpublished report.

Sanderson, J. (2001). Wildlife Trade in Phnomn Penh, Cambodia. Center for Applied Biodiversity Sciences, Conservation International, Phnom Penh, 21 March, unpublished report.

Santiapillai, C. and Jackson, P. (1990) *The Asian Elephant. An Action Plan for its Conservation.* IUCN, Gland, Switzerland.

Santiapillai, C., Silva, A., Kamyawasamn, C., Esufali, S., Jayaniththi, S., Basnayake, M., Unantenne, V. and Wijeyamohan, S. (1999). Trade in Asian elephant ivory in Sri Lanka. Oryx 33(2), 176-180.

Shrestha, H. (2000). *Tourism in Nepal. Marketing Challenges.* Nirala publications, Kathmandu.

Silva, de M. (1998). Status and conservation of the elephant *(Elephus maximus)* and the alleviation of man-elephant conflict in Smi Lanka. *Gajah* 19, 1-68.

Singapore Government (1978).

Singapore Half- Yearly Trade Statistics, 1978. Department of Statistics, Singapore.

Srikrachang, M. and Jaisomkom, S. (1998). The Situation of Elephant Poaching and Ivory Trade in Thailand. Bangkok, unpublished report.

Smikrachang, M. and Jaisomkom, S. (1999). Situation of Elephant Poaching and Ivory Trade in Thailand. **IUCN/SSC** Asian Elephant Specialist Group Newsletter 2, 8-10 April.

Smikrachang, M. and Jaisomkom, S. (2001). Situation of Elephant Poaching and Ivory Trade in Thailand. Bangkok, unpublished report.

St Aubyn, F. (ed.) (1987). Ivory: an International History and Illustrated Survey Harry Abrams, New York.

Stiles, D. and Martin, E. (1994). New war in South East Asia. *Swara* 17(5), 19-21.

Stiles, D. and Martin, E. (1995). Guest Editorial: Economic Boom leads to Wildlife Doom in Southeast Asia. *International Zoo News* 42 (4), 202-204.

Stiles, D. and Martin, E. (2001). Status and trends of the ivory trade in Africa, l 989-1999. *Pachyderm* 30, 24-36.

Sun Hean (2000). Status of the Tiger and its Conservation in Cambodia. A Thesis submitted to the Faculty of the Graduate School of the University of Minnesota for the Degree of Master of Science.

Thailand Government (1978). *Foreign Trade Statistics of Thailand, December **1978.*** Department of Customs, Bangkok.

Thornton, A., Perry, C., Ruhfus, J., Powell, M. and Bell, D. (2000). *Lethal Experiment.* Environmental Investigation Agency, London.

Thouless, C. (1994). *Conflict between humans and elephants in Sri Lanka.* FAO Project Report No. UND/SRL/001/GEF, Colombo, Sri Lanka.

Thuong, Phan Lam (1997). *Ancient Sculpture of Vietnam.* Fine Arts Publication House, Hanoi.

To Sareth (2000). A Special Report from Mr To Sareth, Tiger Conservation Wildlife ranger at Khmar Bang District, Koh Kong Province. Phnom Penh, unpublished.

TRAFFIC (1992). India Reinforces Ivory Trade Ban. *TRAFFIC Bulletin* 13(1), 3.

TRAFFIC (1997). Seizures and Prosecutions.

TRAFFIC Bulletin 16(3), 114.

TRAFFIC (2000a). Seizures and Prosecutions. *TRAFFIC Bulletin* 18(2), 74.

TRAFFIC (2000b). Seizures and Prosecutions. *TRAFFIC Bulletin* 18(2), 75.

TRAFFIC (2000c). The l l th Meeting of the Conference of the Parties to CITES, *TRAFFIC Bulletin* 18(3), 97- 114.

TRAFFIC (2000d). Seizures and Prosecutions. *TRAFFIC Bulletin* 18(3), 126.

TRAFFIC (2001). Legislative framework. WWF/IUCN, Hanoi, Vietnam, unpublished report.

Tuoc, D. and Santiapillai, C. (1991). The status of elephants in Vietnam. *IUCN-WWF Asian Elephant Specialist Group Newsletter* 7, 2-8.

Uch Seiha (2000). Report of Elephant Hunting and illegal sawmill in Koh Kong. Wildlife Office, Phnom Penh, unpublished.

Vigne, L (1991). The Collapse of India's Ivory Industry. *Pachyderm* 14, 28.

Weiler, H. and Men Soriyun (1999). An Updated Status of the Wild Elephant in Cambodia. Phnom Penh, April, unpublished report.

Weiler, H. and Chheang Dany (200 1). Cambodia Report. Paper presented to the International Workshop on the Domesticated Asian Elephant, Bangkok, 5-10 February, unpublished.

Wildlife Protection Office, Department of Forestry and Wildlife, Kingdom of Cambodia (2000). Report of the Hunting and Killing of Elephants and of other Illegal Forestry and Wildlife Activity in Thma Bang, District of Koh Kong Province. Phnom Penh, 8 December, unpublished.

WWF-Thailand (2001). Summary of Trade Survey (December 2000 to February 2001). Bangkok, unpublished report.

Zaw, K. (1997). Utilization of elephants in timber harvesting in Myanmar. *Gajah* 17, 9-22.

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