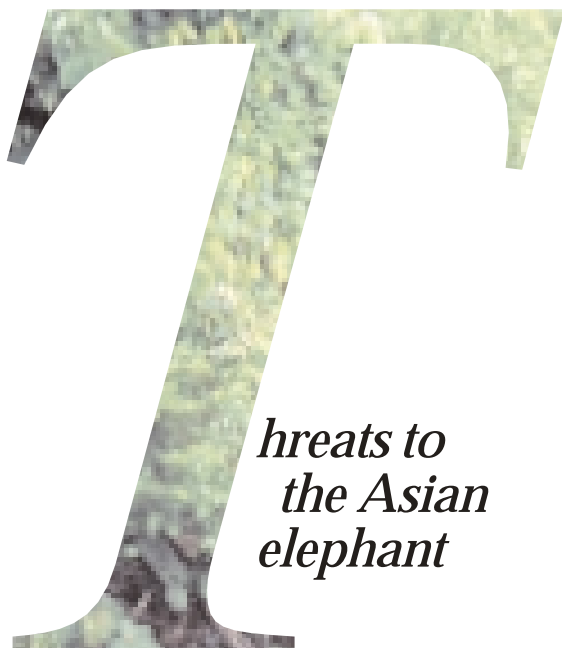


to be the subreserves of Mengyang, Menglun, Mengla, and Shangyong. One of the conservation problems in Xishuangbanna that has a direct impact on elephants is the conversion of forests to monoculture plantations such as rubber. Over 67,000ha of the Dai Prefecture is under rubber plantations.

*Table 1. Estimates of the number of Asian elephants in the wild*

Country	Region	Minimum Nos.	Probable Nos.	Speculative Nos.
INDIA	Northern	750	875	1,000
	Northeastern	7,200	9,250	11,300
	Central	1,500	1,750	2,000
	Southern	9,640	12,395	15,150
NEPAL		41	50	60
BHUTAN		60	80	100
BANGLADESH		195	217	239
SRI LANKA		3,160	3,783	4,405
	<b>Totals Subcontinent</b>	<b>22,546</b>	<b>28,400</b>	<b>34,254</b>
MYANMAR		4,639	4,820	5,000
THAILAND		1,300	1,650	2,000
MALAYSIA		800	1,000	1,200
BORNEO (Indonesia and Malaysia)		1,000	1,250	1,500
INDONESIA		2,800	3,800	4,800
	<b>Total Indo-Malayan</b>	<b>10,539</b>	<b>12,520</b>	<b>14,500</b>
LAOS		950	1,125	1,300
CAMBODIA		200	250	500-(2,000 ?)
VIETNAM		109	135	144
CHINA		250	275	300
	<b>Total Indochina + China</b>	<b>1,509</b>	<b>1,785</b>	<b>2,244 ?</b>
<b>Total</b>		<b>34,594</b>	<b>42,705</b>	<b>50,998</b>

**Source: IUCN's Species Survival Commission's Asian Elephant Specialist Group**  
**WARNING: almost all figures are very approximate**



*Threats to the Asian elephant*

**Habitat loss and fragmentation**

About 20 per cent of the world's human population live in or near the present range of the Asian elephant. Extensive modification of elephant habitats by humans is resulting in contraction of the species' range and the fragmentation of its distribution. Some experts believe that there is less of a future for the Asian elephant outside protected areas. However, many protected areas are too small to accommodate viable elephant populations in the long term.

Fragmentation of the elephant's forest habitat is particularly damaging. Elephants migrate with the seasons to find the best feeding areas. Now the migration routes have been disrupted, and herds are constantly confronted by new settlements and agriculture, where they are not welcome. The elephant's forest home has already been reduced to a fraction of what it once was in most countries in its range. India's formerly extensive forests, where elephants roamed widely, now cover less than 20 per cent of the country, and barely half that is suitable for elephants. The central Indian elephant population has been seriously fragmented. Thailand has cleared almost all its lowland forest, creating a huge void of wildlife habitat in the heart of the country. On the Indonesian island of Sumatra, vast areas of forest are being cleared to accommodate millions of people resettled from the crowded islands of Java, Bali, and Madura.



Elephant hunting in ancient times – but still ongoing today.



Ivory for sale in Thailand at a tourist shop.

In Vietnam, more forestland has been cleared since 1975, when the US–Vietnam conflict ended, than during the massive bombing and Agent Orange raids (Kemf 1990). In the richest forested area of the country, the Central Highlands, coffee and pepper plantations are replacing centuries-old woodland. In Sri Lanka, the vast Mahaweli River Valley Project for settlement, crops, and irrigation cuts a wide swathe through the heart of elephant country. Myanmar, Cambodia, and Laos still have considerable forest cover, but these areas are suffering from unmanaged and illegal logging. Oil palm, rubber, and pulp plantations in Malaysia and



ELIZABETH KEMF

Vietnamese villager feeds young elephant captured in 1997.

Indonesia have also been responsible for stripping away millions of hectares of elephant habitat.

The situation is particularly tragic when elephants are “pocketed” in small patches of forest, which cannot meet their food and water requirements, and from which they have no way to escape. Killing rogue or problem elephants is not an acceptable option in many parts of Asia, particularly in India. Capture of problem elephants for training and human use is a limited option.

### **The timber trade and illegal logging**

Research carried out by WWF has revealed that the international timber trade is now the primary cause of forest degradation and loss in those forests that contain the highest levels of biodiversity. In 1995, WWF’s report *Bad Harvest* pointed out that Cambodia, Laos, Vietnam, and Thailand were among countries where illegal logging was having an important but unquantified effect (Dudley et al. 1995). Between 1995 and 2000, Global Witness, a UK-based NGO, published a series of reports on legal and illegal logging in the four aforementioned countries, focusing mainly on Cambodia. Following submission of a report by Global Witness to the government of Cambodia, an investigation by a military task force found that “380 logging trucks had crossed the Cambodian border into Vietnam in November and December of

1999”. In May 2000, Global Witness called upon Cambodia’s neighbours, the governments of Thailand, Laos, and Vietnam, to enforce Cambodia’s 1999 timber export ban, noting that: “Currently all three countries systematically abuse it.” (Global Witness 2000) In doing so, all of these countries are undermining the rapidly disappearing forest home of wild species, including the critically endangered Asian elephant. There have been recent attempts to clamp down on illegal logging and corruption in Vietnam, but forest guards have been killed in their attempts to halt timber poachers. According to a report by Agence France Presse in August 2000, a top Vietnamese provincial official was dismissed because of gross neglect of his duty to protect his province’s land and forests. Fifteen defendants, most of them provincial and forestry department officials, also received jail terms. An additional 35 people were jailed for up to 20 years over the scandal in which more than 53,000 m<sup>3</sup> (185,000 ft<sup>3</sup>) of timber was alleged to have been illegally felled from protected forests and wildlife sanctuaries between 1993 and 1995. (Agence France Presse 2000) An official study released in Vietnam this summer also revealed that 12 forestry officers have been killed on duty and 490 injured since 1995. The report said that more than 22,000 cases of illegal logging had been detected nationwide in the first six months of 2000 and concluded that violence had increased dramatically over the same period (Watkins and Huw 2000).



Mother and calf elephants killed by a train passing through a protected area in India.

Elephants are used for illegal timber operations in Thailand, often severely misused, and “overworked everywhere” (Lair 1997). Cambodia’s Wildlife Protection Department reported that in September 1998, five elephants working for a foreign logging company in a concession north of Phnom Penh had been “worked to death” (Reuters 1998).

### Human–elephant conflict

When elephants invade crops, and sometimes villages, there are violent clashes as people try to drive them away with fire, muzzle-loaded guns, and crude bombs; elephants and people are killed and injured. The elephant, a lovable animal for the world at large, has become a menace for many living in its range.

The conversion of forested areas to agriculture has led to serious elephant–human conflicts. In 1985, in Syamtalira Bayu (Indonesia), elephants reportedly destroyed 270,000 rubber seedlings and 14,000 young trees in one plantation. The cost of the damage from three weeks of crop raiding was estimated at US\$12,000. Indonesia’s national newspaper, *Kompas*, reported that between 1993 and 1995, nearly 1 million hectares of rubber, oil, palm, and coconut plantations were destroyed by marauding elephants. The estimated loss was US\$6 million (Bangun 1996).

Human presence in elephant habitat can lead to fatalities. Up to 300 people are killed annually in India by elephants (Kemf and Jackson 1995). Between 1993 and 2000, 38 people were killed by elephants in Vietnam (Polet 2000, pers. comm.). In heavily populated areas of Vietnam, many of

which are new economic zones, human casualties occur when elephants move from one forest fragment to another.

Conflicts arise when the animals pass through human settlements, especially cultivated areas. In Sumatra in 1996, 12 elephants were found dead on the grounds of an oil-palm plantation, poisoned by plantation workers who tried in vain to cover up the crime (Bangun 1996).

Some countries provide compensation for crop damage or deaths caused by elephants. Nevertheless, there is often strong political pressure on wildlife authorities to eliminate elephants close to populated areas. As the numbers of people increase, elephant–human conflicts are likely to become more frequent; experts consider such conflicts to be the leading cause of elephant kills in Asia.

### Illegal hunting and trade

Male Asian elephants, most of which have tusks, have suffered the most from the ivory trade. This is by no means a new phenomenon, for ivory has been a valued substance from time immemorial, and Asian artists and craftsmen have long been renowned for their skills in transforming tusks into complex and beautiful objects. Despite legal protection of all elephants in the country, tuskers in southern India have been particularly hard hit, and few remain of the magnificent specimens that once roamed the land.

Poaching of Asian elephants for ivory and meat is a serious problem in southern India, where 90 per cent of the bulls are tuskers, and in northeastern India, where some people (especially the Nagalanders) eat elephant meat. Selective removal of tusker males may lead to an increase in tuskless males in the population (Santiapillai and Jackson 1990; Sukumar et al. 1998). In 1995–1996, poaching of Asian elephants for hide, meat, and ivory increased sharply (Kemf and Jackson 1995). A lack of males has led to a significant drop in recruitment; for example, in Periyar Tiger Reserve in southern India, where the male–female sex ratio is 1:120, fewer than 30 per cent of the adult females are accompanied by a calf or juvenile under five years of age. In contrast, in Rajaji National Park in northwestern India, the sex ratio is 1:2, and more than 95 per cent of adult females are accompanied by calves or juveniles (Williams 2000, pers. comm.).

The problem is not confined to India. In 1998, Men Phimean, Director of Cambodia’s Wildlife Protection Department, said that poachers had slaughtered many bull elephants for their tusks, and that Cambodia might have to import bulls from neighbouring Laos to address a critical shortage of male elephants (Reuters 1998). Vietnam has also reported a severe shortage of male elephants in the wild (Do Tuoc 1998).



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Forest clearance in Sri Lanka and other Asian countries has resulted in fragmentation of elephant habitat.

A 1997 TRAFFIC report (Nash 1997) indicated that, seven years after international trade in ivory was banned, illegal commerce continued in the Far East, with South Korea and Taiwan being major markets. However, most of this illegal ivory appeared to come from African, rather than Asian elephants.

#### **Capture of wild elephants/care of domesticated animals**

The capture of wild elephants for domestic use has become a threat to wild populations where numbers have been seriously reduced. Because of the long years of infancy, when an elephant is not capable of work, it has been the custom to take wild elephants and train them rather than breed from domesticated animals. India, Vietnam, and Myanmar have banned capture in order to conserve their wild herds, but in Myanmar elephants are still caught each year for the timber industry or the illegal wildlife trade. A 1996 press article that appeared in a Myanmar state-run newspaper reported that eight problem wild elephants had been captured by the Forest Department (Lair 1997). Unfortunately, crude capture methods have led to a high mortality level. Efforts are being made not only to improve safety but also to encourage captive breeding rather than taking from the wild. With nearly 30 per cent of the remaining Asian elephants in captivity, attention needs to be paid to improved care and, where appropriate, reintroduction into the wild. In Thailand, thanks to a programme supported in part by WWF, several domesticated elephants, some of which had been abused, have been reintroduced into the wild (see page 24).

#### **Genetic threat**

There has been concern about the genetic effects of reducing the number of big tuskers. The danger arises when the

big tuskers are eliminated, and poachers find it worthwhile to kill immature males for their small tusks. When tuskers are killed, the number of males in a population decreases, resulting in skewed sex ratios. This may lead to inbreeding and eventually to high juvenile mortality and low breeding success. Removing large tuskers also reduces the probability that these longer-ranging loners will mate and exchange genes with females of different sub-populations. In populations with a high ratio of *makanas*, or large tuskless males, the sex ratio would be better balanced, reducing adverse genetic effects.

#### **Disease**

In the early 1990s, an outbreak of haemorrhagic septicaemia, a cattle disease rare among elephants, was responsible for the deaths of several animals in Sri Lanka's Uda Walawe National Park in May 1994 (Santiapillai 1994 pers. comm.). In small herds of elephants, epidemics such as this could wipe out entire groups.

# What WWF is doing for Asian elephants

Owing to its large size and need for large areas of suitable habitat, the Asian elephant can be considered a “flagship” species, meaning that conservation action for elephants has the potential to help maintain biological diversity and ecological integrity on a large scale.

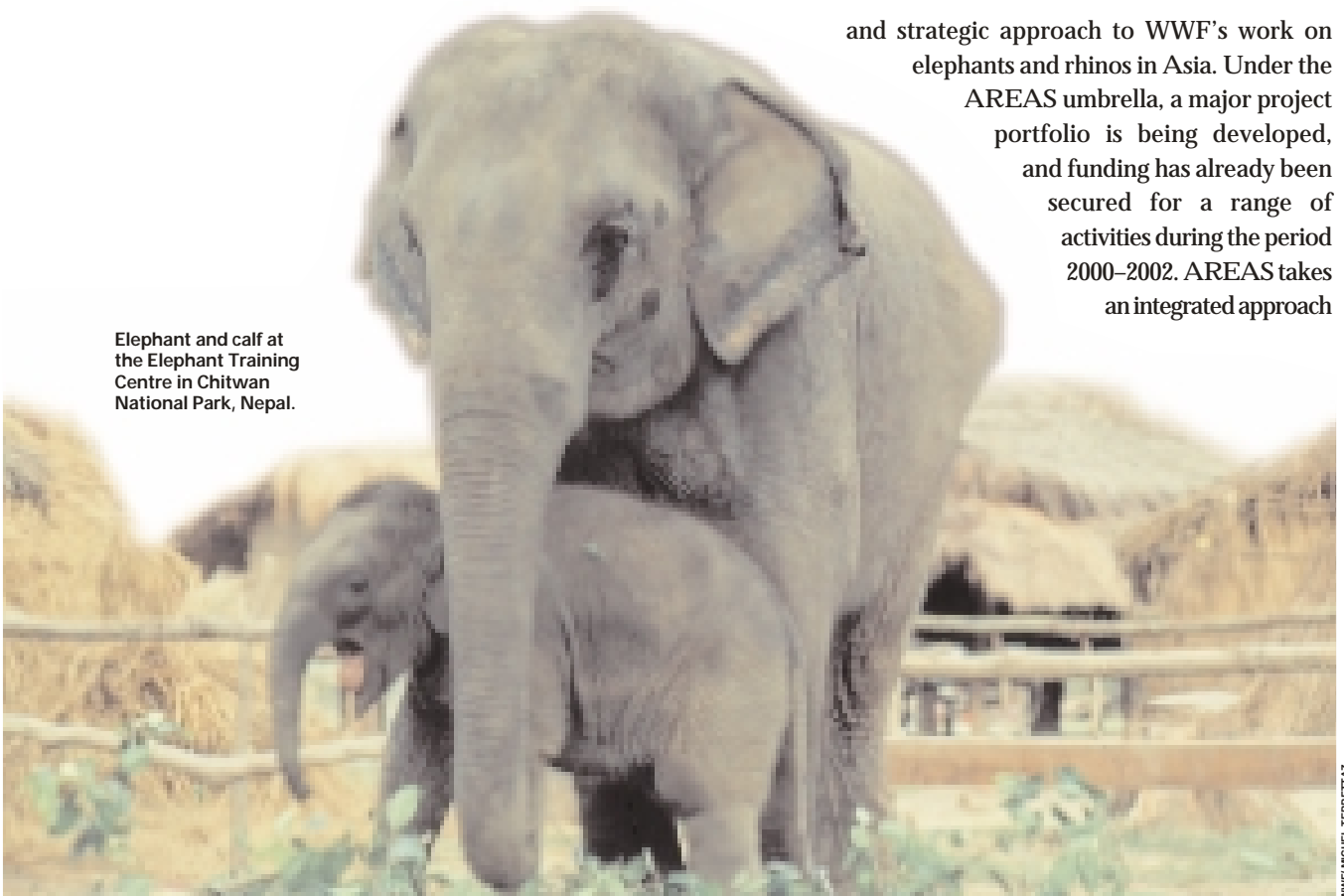
**WWF Asian Rhino and Elephant Action Strategy (AREAS).** Following a WWF Workshop on Asian Rhinos and Elephants (held in Ho Chi Minh City, Vietnam in December 1998), AREAS was set up with the aim of providing a coordinated



India's Project Elephant was launched throughout the country in 1991.

and strategic approach to WWF's work on elephants and rhinos in Asia. Under the AREAS umbrella, a major project portfolio is being developed, and funding has already been secured for a range of activities during the period 2000–2002. AREAS takes an integrated approach

Elephant and calf at the Elephant Training Centre in Chitwan National Park, Nepal.



to conservation needs and has identified 13 major landscape units for priority action, eight of which are of particular importance for Asian elephants:

- Nilgiri/Western Ghats (India)
- Kaziranga/Karbi-Anglong (India)
- Arunachal/Assam/Namdapha (India)
- Emerald Triangle (Cambodia, Laos, and Vietnam)
- Tenasserim/Western Forest Complex (Thailand)
- Northern Peninsular Malaysia and southern Thailand (Malaysia and Thailand)
- Southern Sabah and northeastern Kalimantan (Malaysia and Indonesia)
- Riau (one in Indonesia; one shared by Indonesia and Malaysia)

A full-time AREAS coordinator has been appointed to take forward development and implementation of the strategy. Projects dealing specifically with conservation of the Asian elephant are currently being implemented in Indonesia and Malaysia, with proposals for work in India and Thailand under development. Other AREAS projects relevant to all Asian rhino and elephant species are being developed in the fields of population surveying, human-wildlife conflict mitigation, monitoring of illegal trade (through TRAFFIC), communications and outreach, and technical support.

### India

Elephants occur in several of India's famous national parks, where WWF is supporting Project Elephant through its general state affiliates. Project Elephant was initiated in 1991 as the Indian National Elephant Conservation and Management Strategy. A task force has created a long-term conservation programme for the elephant in India under a specially funded initiative based on the ecological approach of Project Tiger. The objectives of the project are to ensure the long-term survival of the larger populations and to evolve management plans for the smaller populations, especially in terms of reducing human–elephant confrontations. Within elephant reserves, the project aims to link remaining habitat fragments by establishing new corridors, at the same time as strengthening protection of existing corridors that are under threat. WWF-India's Biodiversity Hotspots Conservation Programme in the eastern Himalayas and Western Ghats is aimed at conserving biodiversity in these two important elephant habitats. WWF-India has also assisted in environmental awareness programmes aimed at reducing conflict between wildlife and people.

TRAFFIC-India continues to monitor the trade in ivory and other products and is also helping efforts to encourage ivory-carvers to make the switch to ivory substitutes. Under WWF's AREAS programme, TRAFFIC India is involved

in various activities: the preparation of an inventory of state-held ivory stocks and an assessment of their storage and registration systems; assisting forensic research in ivory identification and elephant meat and skin use; aiding enforcement agencies in controlling illegal trade in ivory by helping set up informer networks; investigating domestic trade in ivory in India and cross-border trade with Nepal, Bhutan, and Myanmar in ivory, elephant meat, and skin.



Radio-collaring an elephant in Mudumalai, India.

### Vietnam

In 1995, WWF supported the development of an elephant action plan for Vietnam. This plan, adopted by the government in 1996, was partially funded by FFI. WWF is cooperating closely with FFI in Vietnam and is active in several protected areas where wild elephants occur, including Vu Quang and Cat Tien national parks. These two five-year projects aim to integrate conservation with sustainable development in and around the protected areas, to ensure their long-term security and the viability of their wild fauna and flora. Management is being strengthened and various measures taken to improve health care, education, and employment opportunities. A census of Cat Tien's small elephant population is planned, and this study should result in the preparation of an elephant action plan for the park and its surrounding forest concessions (Polet 2000, pers. comm.).

### Thailand

The Western Forest Complex is the largest-remaining area of protected forest in Southeast Asia and home to more than one-third of Thailand's wild elephants. WWF has been supporting a range of measures to strengthen conservation management and monitoring within Hai Kha Khaeng/Thung Yai wildlife sanctuaries. WWF is also working with the Karen people to increase understanding of the distribution, abundance, and ecology of elephants in Thung Yai Wildlife Sanctuary. As part of the AREAS portfolio (see above), WWF is developing a project for elephant conservation in the Western Forest Complex as a whole.

## THAILAND RELEASES ELEPHANTS BACK INTO THE WILD

*Elephant World Lampang Thailand, a project designed to rescue abused and unwanted elephants, completed its induction of 72 elephants at the natural holding centre in late 1999. The event was timed as a tribute to coincide with the sixth cycle birthday of the King of Thailand, who turned 72 on 5 December. The elephant project is a collaboration between various governmental and non-governmental organizations, including the Lampang Administration Office, Royal Thai Army, Forestry Department, Livestock Development Department, and WWF. The aim of the project is to rescue elephants abused by human activities, reduce unemployment of Thailand's 3,500 domesticated elephants, and increase Thailand's wild elephant population. The 72 elephants in the project will be classified according to their health and situation and put in different feeding areas. The sick and old ones are kept at the Rehabilitation Center, Lampang Province. Some will be used as breeding parents and others will be released to the wild. The elephant project has so far released seven domesticated elephants in the Doi Muang Wildlife Sanctuary.*

In northeastern Thailand, protected areas within the western Isan forests support about a quarter of the country's remaining wild elephants. WWF has been working to protect the forest ecosystems, reduce threats to elephants, develop sustainable livelihoods for nearby human communities, and to establish forest corridors between protected areas.

WWF Thailand also launched an Elephant Ivory Trade Campaign in late 1999. The campaign was motivated by the finding that out of 17 hotels in downtown Bangkok, 11 were engaged in an ivory trade estimated to be worth over 60 million baht (US\$ 1,446 million). WWF is also helping to draft the first Thai Elephant Action Plan (Sukumar 1998).

### Indonesia (Sumatra)

A Population and Habitat Viability Analysis (PHVA) was undertaken in 1993 to estimate the status of the Asian elephant in Sumatra after recent changes in human population

and forest cover. The analysis indicated that the incidence of human-elephant conflict in Sumatra had risen, and that elephant populations of less than about 25 animals were at a very high risk of extinction (Sukumar and Santiapillai 1993).

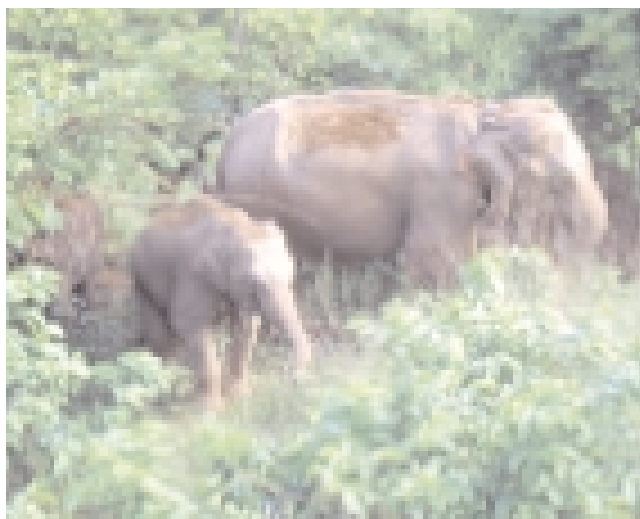
The province of Riau, on the island of Sumatra, has been identified as a priority landscape for the Asian elephant within the AREAS framework. Here, approximately 700 elephants survive in small fragments of forest surrounded by plantations, logged areas, and human settlements. Elephant-human conflicts, which have been a serious problem for some years, are increasingly frequent. WWF has been invited to help develop a new five-year land-use plan in partnership with the local authorities

### Borneo

Another AREAS priority landscape for the Asian elephant is located in northern Borneo, covering a large part of southern Sabah (Malaysia) and northeastern Kalimantan (Indonesia). The region is thought to sustain several thousand elephants, whose numbers have actually increased in the last 25 years as a consequence of secondary forest growth after logging of primary forests. However, much of the secondary forest is now under pressure from conversion to oil palm plantations, and existing protected areas are too few and too small to maintain significant elephant numbers. WWF is working with the authorities, forest concessionaires, and oil palm plantation owners to identify a sustainable conservation solution, including the strengthening of the protected areas network and the establishment of habitat corridors.

### Malaysia

A further priority landscape for the Asian elephant under the AREAS programme lies in the border region between northern Malaysia and southern Thailand. Several hundred



Wild elephants in India.

AC WILLIAMS



elephants occur in this region, which includes two large Malaysian protected areas, Taman Negara and Belum. Both of these areas have served as refuges for elephants captured and translocated by the Malaysian Wildlife Department in efforts to reduce conflicts with humans. However, Taman Negara and Belum are themselves surrounded by plantations and villages, and human–elephant conflicts have increased along their boundaries. WWF is evaluating ways in which it could contribute to reducing conflicts and assist in the department’s efforts to conserve a viable elephant population in peninsular Malaysia.

**Cambodia**

WWF has completed preliminary elephant surveys under its AREAS programme and is focusing on building the capacity of national government staff to undertake further surveys, analyse data, and prepare reports, by training staff from appropriate central and provincial government agencies. WWF is also working on the development and implementation of a comprehensive national elephant conservation strategy and action plan, including a long-term monitoring scheme to track changes in the status and distribution of elephants in Cambodia.

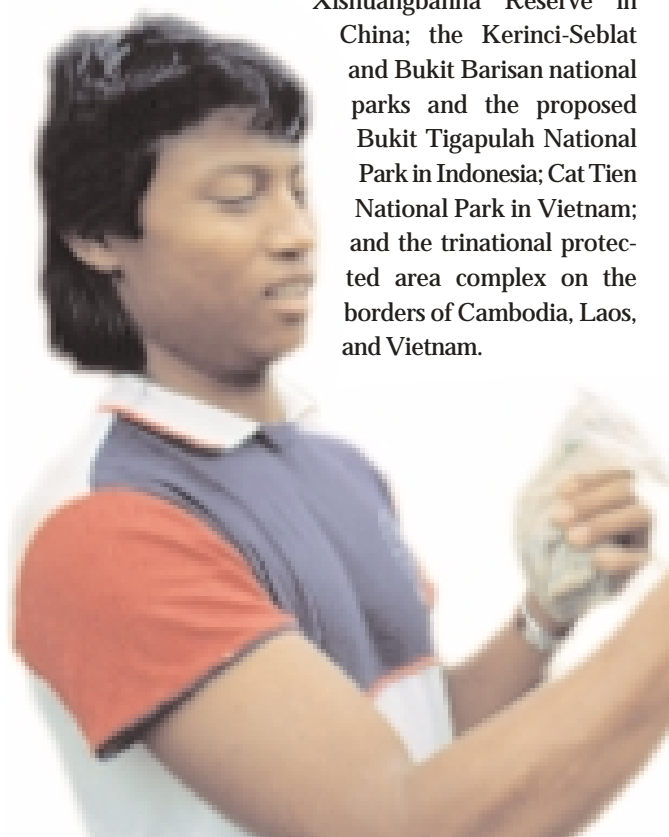
**Other WWF projects**

WWF is active in a number of protected areas that support populations of wild elephants. Among these are: Royal Bardia National Park in Nepal; Royal Manas National Park in Bhutan; Xishuangbanna Reserve in China; the Kerinci-Seblat and Bukit Barisan national parks and the proposed Bukit Tigapuluh National Park in Indonesia; Cat Tien National Park in Vietnam; and the trinational protected area complex on the borders of Cambodia, Laos, and Vietnam.



Researchers in Vietnam's Central Highlands in 1988.

ELIZABETH KEMF



WWF-trained elephant in Way Kambas National Park, Indonesia.

WWF/MAURI RAUTKARI

# What needs to be done



Revenue from tourism could be shared with villagers living in or near protected areas. Here in India's Corbett National Park a lucky group observes a tiger.

## 1. Reducing Human-Elephant Conflicts

Elephants frequently move outside the borders of even the largest conservation areas: almost 70 per cent of the Asian elephant's range is now outside national parks and reserves. Meanwhile, human populations in Asia are increasing at a mean rate of 2.5 per cent a year and the sheer size and gargantuan appetite of elephants mean that it is practically impossible for humans and elephants to live together where agriculture is the dominant form of land use. Year by year, wilderness areas become smaller as forests are opened up, ultimately forcing many elephants to feed on people's crops. Human–elephant conflicts have become widespread, and unless innovative measures are adopted to address the concerns of the rural poor, Asian elephants will disappear in the wild throughout most of their range.

Competition between Asia's growing human population and elephants – who are battling for the same living space – will inevitably increase unless the problem is dealt with systematically. Conserving the Asian elephant's tropical forest habitat is critical, not only for the elephant (and its very important role in maintaining biological diversity), but also for people. Communities depend on forests as a source of wood, fuel, food, and other products, and forests growing on hillsides have important watershed and soil-stabilizing functions. In many cases, forests have been cleared for grazing and crops, and elephants often find themselves migrating through areas occupied by people, farms, or asphalt. Confrontation often results in deaths on both sides, and fatalities are increasing.

Thus, throughout Asia, management of elephants in the wild has become very complex. Many protected areas are surrounded by a landscape dominated by people, and wildlife authorities must pay attention to the concerns of the human populations, who often bear the brunt of elephant depredations. Conservationists in Asia must adapt their strategies so as to improve people's livelihoods, because programmes designed for elephants will only succeed if they recognize the concerns and needs of people who compete with the elephants for resources. The emphasis, therefore, must be on accommodating both elephants and human beings. In order to safeguard the future of elephants in Asia and to promote harmony between humans and elephants, the following steps are needed:

### 1.1. Adopt sound land-use planning strategies

The key to reducing human–elephant conflict in Asia is, first and foremost, to encourage the adoption of sound land-use strategies that would make it more difficult for elephants to stray into human settlements. It will be important to develop mechanisms to predict where human–elephant conflicts are likely to occur, and to enlist the support of governments and



This family in India is assessing crop damage to their farm. In India some 200 to 300 people are killed every year by marauding elephants.

PETER JACKSON

local communities to undertake land-use planning in order to minimize the likelihood of such conflicts occurring. In areas where people and elephants do overlap, people must derive tangible benefits from the presence of the elephants. Master plans which detail elephant reserves in overall country-wide planning are needed, so that future development projects don't fragment elephant habitat. Similarly, the environmental impact of development projects in elephant range should be evaluated well in advance so that the interests of elephants and people are provided for.

### 1.2 Assess the ranging pattern of elephants

In order to manage elephants successfully, we need to know just how large a protected area should be in order to support viable populations. Some excellent studies have been carried out on home ranges of elephants in south India. This is also extremely important in countries such as Myanmar and Laos, where large forests still exist and human populations are relatively small. In such areas, it is not too late to design appropriate elephant reserves whose boundaries harmonize with the movement patterns of at least the core elephant populations. Studies of elephant movements in well-established national parks that are already hemmed in by human settlements and where realignment of park boundaries is no longer possible would only be of academic interest.

### 1.3 Establish elephant corridors

As traditional seasonal migratory routes are blocked, elephant populations will become genetically isolated from other populations and may become vulnerable to genetic degradation. This problem could be resolved by establishing forest corridors linking two or more elephant habitats. Land-use planners and managers must ensure that elephants would use such corridors without spilling into adjoining human settlements. In Sri Lanka and India, some of the traditional migratory elephant paths pass through non-forest land, in which case establishing corridors will not be easy. Most of the existing corridors have already been lost by default or inaction

(Johnsingh and Williams 1999). However, all potential elephant corridor areas need to be identified, surveyed, and set aside (in some instances, even purchased outright) to ensure the free movement of elephants.

### 1.4 Create managed elephant ranges

The concept of "managed elephant ranges" offers a compromise whereby both elephants and people could share land resources. Land-use practices beneficial to elephants, such as slow rotation timber harvesting, extraction of forest produce, or a low level of shifting cultivation, could be practised in these multi-use landscapes. Opportunities for such a system to be adopted still exist in several key Asian elephant range States.

### 1.5 Compensate farmers fairly

For the rural poor, whose life is a daily battle for economic survival, elephants can be a dangerous nuisance. Given this situation, it is quite obvious that elephants and other wildlife will decline and eventually disappear from agricultural areas in Asia, unless the damage they cause is adequately and promptly compensated for. Such compensation schemes are sometimes abused: in northeastern India, for example, 30 per cent of claims were found to be false (Williams and Johnsingh 1996). However, amounts paid to families to compensate for losses are at present woefully inadequate. For example, between 1992 and 1994, about 400 cases were investigated by the Department of Wildlife Conservation in Sri Lanka, and a sum equivalent to about US\$6,000 was paid out in compensation.

### 1.6. Benefit local communities

Communities living in proximity to elephants should benefit from their presence. Long-term residents around protected areas can be hired as trackers, rangers, elephant drivers, and trainers, at fair wage scales comparable to employees hired from outside the region. Furthermore, long-term residents could also be trained and employed in protected area management, thus seizing the opportunity for combining traditional knowledge with sound modern conservation approaches. Revenues from tourism could be shared with communities through a direct percentage of return, or through employment in the tourist industry. Ecotourism or other small-scale businesses could provide some revenues, but realistically speaking, probably not enough to meet all the communities' needs.

## 2. Taking Action At The National Level

### 2.1 Prepare or revise national action plans for elephant conservation

In 1990, the IUCN/SSC Asian Elephant Specialist Group prepared a Global Action Plan for the Conservation of the Asian Elephant. Although this document identified key

conservation priorities, much has changed since it was drafted. The Global Action Plan needs to be revised, and it is also imperative that each range State prepares its own National Action Plan, to identify its priorities for elephant conservation.

### **2.2 Strengthen protection of existing reserves**

Existing protected areas that harbour elephants often lack the resources to function properly: we need to ensure that forest guards and national parks personnel have adequate salaries and the equipment and infrastructure to provide effective protection for wildlife.

### **2.3 Enforce national legislation on poaching and trade in wildlife products**

Existing laws on the illegal killing of elephants and other wildlife, and on trade in wildlife products such as ivory, need to be strengthened. Punitive measures should be set at realistic levels – often already enshrined in the law – to deter would-be poachers and traders.

### **2.4 Hold national and transnational corporations accountable**

Governments should take steps to ensure that national and transnational companies exploiting natural resources in elephant range comply with national legislation regarding biodiversity protection, and are accountable for implementing sound forest-use practices.

### **2.5 Promote conservation education and public awareness**

Increased awareness of the seriously endangered status of the Asian elephant is urgently needed at all levels of society. Education can also help persuade people to change their attitudes and behaviour towards wildlife, and it is important that local communities are made aware of the tangible benefits of elephant conservation. For example, conserving elephants would provide employment in anti-poaching activities, fire control measures, and census operations, and would help develop more cordial relations between the public and wildlife officials.

## **3. Taking Action At The International Level**

### **3.1 Demonstrate political will and commitment**

The socio-economic and political pressures that confront areas set aside for elephants have become critical issues in Asia. A meeting, at senior (e.g. ministerial) level, of the governments of the 13 countries where Asian elephants occur would help obtain a firm commitment to conserve and manage the species across its range. Moreover, national and subregional conservation strategies should address issues such as unsustainable logging, the expansion of teak and oil palm plantations, and other development schemes.



Elephant patrolling in one of Bhutan's protected areas.

### **3.2 Educate consumers and producers about eco-labelled forest products**

As long as uncritical demand for timber and for non-timber forest products remains high, there will be little incentive for corporations to modify their practices. Consumers need to be encouraged to buy products from forests that are managed sustainably. For example, buyers should purchase goods made from timber that is certified in accordance with the rules of the Forest Stewardship Council (FSC). Timber and products should carry the eco-label of the FSC. Companies, producers, and countries should be encouraged to participate in the FSC. Almost 20 million hectares of forest in some 33 countries are certified under the FSC (WWF News-UK 2000). Demand for certified timber products is well established in North America and Europe, but the outreach needs to be much wider, particularly in Asia.

### **3.3 Monitor and stop the ivory trade in Asia**

Populations of wild elephants in Asia are suffering declines due to the illegal trade in ivory: wild elephants in southern India, for example, are under enormous poaching pressure (see page 20). There is an urgent need to step up monitoring and investigation of the illegal ivory trade. All countries with elephants should enforce the CITES regulations. The Asian elephant has been on Appendix I, which bans international commerce, ever since the Convention's inception in 1975. Existing national legislation should be reviewed, and strengthened where necessary.



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## 4. Improving Elephant Management

### 4.1. Undertake more research

Scientific research is needed on: census techniques; monitoring of sex and age ratios in the wild; effectiveness of protected areas and the corridors linking them; habitat evaluation; the effects of translocation; and improving ways of distinguishing Asian from African ivory. Standard census methods should be refined and used to enable repeatability and comparability.

### 4.2. Coordinate expertise to manage elephants

Elephant management teams or "elephant conservation units" could be established in priority elephant areas. These units could include: rangers or wildlife officers; veterinarians experienced in capture, tranquillization and translocation techniques; trainers experienced in elephant drives or warding-off techniques; communication and education officers; wildlife biologists or scientific officers; and administrative staff. In some countries, there is a need to train more people in elephant management.

### 4.3. Discourage capture of wild elephants for domestication

Domesticated elephant populations should be maintained, as far as possible, by captive breeding rather than by taking elephants from the wild. Where capture of wild elephants is necessary, methods which minimize the risks to the elephants should be used. In addition, data on the biology of captive elephants should be maintained and analysed in order to support conservation of wild elephants.



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A trainer bathes his charge at the Thai Elephant Conservation Centre in Chiang Mai in northern Thailand. Domesticated elephant populations should be maintained, wherever possible, by captive breeding.

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