

# 14 The trade in African and Asian ivory in South and South East Asia

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## Abstract

*Elephant poaching continues in Africa and Asia, largely as a result of the ivory markets. If the ivory markets were reduced through law enforcement and education, the price of raw ivory would fall and the incentive to poach elephants would also drop. The authors completed a study of the ivory markets in Africa in 1999, but baseline data to pinpoint the problem areas in Asia were urgently required because the two regions are linked. The authors therefore undertook a study in South and South East Asia in late 2000 and early 2001. It is more cost efficient to investigate, understand and thus be able to control the ivory markets than to stop elephant poaching by conventional means. The eight key countries visited and covered in this article were Cambodia, Laos, Myanmar, Nepal, Singapore, Sri Lanka, Thailand, and Vietnam. Data were collected on the numbers of craftsmen, workshops, retail outlets, ivory items, and prices for raw and worked ivory. Thailand, by far the largest market, is fuelled mainly by illegal imports of African raw ivory plus some tusks from Myanmar. The ivory trade has declined since 1990 in all the countries surveyed because the demand for ivory has been reduced, except for Thailand, where trade has probably remained the same, and Myanmar, where it has increased. Although all the countries studied except Laos are members of CITES and also have domestic laws on ivory, law enforcement is weak. It is important to stop illegal ivory sales to tourists and businessmen in the two regions reported in order to reduce elephant poaching in Africa and Asia, especially in Cambodia, Laos and Vietnam where wild elephant numbers have declined by over 75% since 1988.*

## Introduction

In 1999 we investigated the ivory markets of Africa, finding out that raw African ivory was still being smuggled from certain countries into Asia in significant quantities (Martin and Stiles 2000; Stiles and Martin 2001). The subsequent work in South and South East Asia was partly to find out where African ivory was going in the two regions and who was buying it (Martin and Stiles 2002). There are fewer than 50,000 wild Asian





Still using hand tools in the 1980s, Patan craftsmen produced uniquely designed ivory items.

elephants remaining, about 10% of the African elephant population (WWF 2002; Kemf and Santiapillai 2000). The Asian elephant population cannot supply the ivory demand in some parts of South and South East Asia, a situation that has encouraged smuggling ivory from Africa.

This recent study focused on internal trade in raw and worked ivory in the key towns and cities with ivory markets in two regions of Asia. We also gathered information related to cross-border trade. We visited eight countries in the region - Cambodia, Laos, Myanmar, Nepal, Singapore, Sri Lanka, Thailand, and Vietnam. Even though all except Laos have ratified CITES, international trade in ivory still occurs, particularly with Thailand.

A main question to answer is whether the ivory trade is increasing or decreasing or is stable. The level of poaching should be correlated with the magnitude of retail ivory being sold, both of which are in most cases illegal and thus hidden. We believe that monitoring and evaluating ivory markets can be a cost effective method of assessing threats to elephant populations. Here we provide baseline data to help understand the scale of the ivory trade, and in some instances where past data are available, trends.



## **Methods**

Fieldwork was carried out from early November 2000 to late March 2001 by two investigators working in close coordination to keep data-collecting techniques as similar as possible for consistency and comparisons. Martin worked in Cambodia, Nepal and Thailand, while Stiles worked in Laos, Myanmar, Singapore, Sri Lanka, and Vietnam. Ivory traders, craftsmen, vendors, customers, government officers and conservationists were interviewed. Almost every retail ivory item on display was counted individually. Indicators used were the prices of raw and worked ivory, the number of outlets selling ivory items, the number of ivory workshops and craftsmen, and the number of ivory items seen for sale. Prices for raw tusks were confirmed by using several informants.

## **Results**

### **Legal position of the ivory trade**

#### **Cambodia**

Cambodia joined CITES in 1997. All hunting of wildlife and the internal trade in new ivory were banned in 1994. The domestic trade in pre-1994 elephant products is not prohibited. In 1996 the sale, trade, harvest and transport of live wildlife was prohibited, but not the sale of dead animal products. Thus trade in elephant products in Cambodia was legal for 'old' items, but not for new ones at the time of this survey.

#### **Laos**

Although Laos has not joined CITES, ample national legislation since 1986 prohibits elephant killing and trade in products of elephants and other protected wildlife species. Ivory and other wildlife products can be imported and exported, but since 1989 government authorization plus a certificate of origin are needed.

#### **Myanmar (Burma)**

Myanmar joined CITES in 1997. Wild elephants have been protected since 1935. In 1994 a new law was enacted protecting wild animals and plants outside forest and wildlife protected areas, and later that year a list was published of species that cannot be hunted or their products exploited, which includes the Asian elephant. It is legal to buy whole tusks and ivory tusk ends from privately owned domesticated elephants and to transport these with the proper permit. It is also legal to sell carved ivory.

#### **Nepal**

Nepal joined CITES in 1975; thus imports and exports of elephant ivory are illegal. Domestic trade without a permit has been illegal since 1973, and no permit has ever been given.



## **Singapore**

Singapore joined CITES in 1987. Internal sales of raw and carved ivory were banned in 1989, except for ivory stocks that had been registered before November 1986. A permit is needed to import, export, re-export, transport by sea, possess, sell or display CITES-scheduled species; otherwise the offender may be fined up to 5000 Singapore dollars (USD 2900 in 2001) and spend up to a year in jail. When asked, vendors say they are selling old stocks of worked ivory.

## **Sri Lanka**

Sri Lanka joined CITES in 1979. In 1981, all elephant tusks and carvings had to be registered with the Wildlife Department. Only registered ivory can be sold domestically. Since 1993, anyone caught with unregistered ivory is subject to two years in prison and a fine of 30,000 Sri Lankan rupees (USD 400 in 2000). Individuals can still own elephants and ivory deriving from these elephants and have it carved and willed to descendants, but no ivory can be legally exported or sold. All elephant hunting was banned in 1937.

## **Thailand**

Thailand joined CITES in 1983. The internal trade in all wild elephant products has been illegal since 1960, but the internal sale of raw and worked ivory from domesticated Thai elephants is legal. If an official tries to arrest a trader or shopkeeper, the latter will state that his ivory came from domesticated Thai elephants. This is a major loophole in the law.

## **Vietnam**

Vietnam joined CITES in 1994. A series of government laws and decrees prohibit the hunting of elephants and other listed wild species and the use, trade and transport of products derived from them. In 1993 the exploitation and trade of species on the government's list of threatened species was prohibited.

## **Sources and raw ivory prices**

### **Cambodia**

The most important source of raw ivory within Cambodia is from illegally killed Cambodian elephants. Cambodians and also Vietnamese, often in organized gangs, are poaching the remaining elephants, whose numbers have fallen sharply to a few hundred (Heffernan et al. 2001). The second source for carvers is from the 144 domesticated elephants that still remained by 2000, mostly their tusk tips (Weiler and Chheang Dany 2001).



After the fall of the Khmer Rouge government the price of wildlife products, including ivory, rose through the 1980s and early 1990s as the economy grew. Tusks over 10 kg were USD 227/kg, average sized ones USD 182/kg and those less than 3 kg 114/kg in 2001.

## Laos

Virtually all raw ivory carved in the country comes from the southern provinces of Laos from poached elephants. Elephant numbers have fallen significantly, from about 2500 in 1989 to an estimated 1000 in 2000 (Santiapillai and Jackson 1990; WWF 2002), while domesticated elephants are thought to be over 1000. Larger pieces and tusks were sold for USD 250-300/kg in 2001. Several raw tusks less than 10 cm in length were seen for sale. Prices have risen over the decade, probably more because ivory is scarce than from an increase in demand (table 1).

Table 1: Past and present ivory trade indicators for South and South East Asia

Country	Year	Price of raw ivory, 1-5 kg (USD)	Retail outlets (no.)	Workshops (no.)	Craftsmen (no.)	Minimum no. items
Cambodia	1991	150	-	-	-	-
	1992	340	-	-	-	-
	1994	400	-	-	-	-
	2001	338	59	-	c.30	1,773
Laos	1998	100	59	-	-	-
	1990	200	-	-	10+	-
	2001	250-300	63	4	5	1424
Myanmar	1981	26	-	-	-	-
	1995	239	-	-	>60	-
	2001	142	53	c.11	c.40	5801
Nepal	1979	140	-	-	30-50	-
	1982	92-115	-	-	8+	-
	1991	187	-	-	-	-
	1998	242	71	-	-	1454
	2001	166-207	57	2	4	1546
Singapore	1979	140	-	-	30-50	-
	2001	-	23	0	0	2700
Vietnam	1989	150	-	-	-	-
	1990/1	100-200	>80	-	63-83+	-
	2001	350-500	50	>7	>22	3039

- no data



## Myanmar

Most ivory comes from the forested areas of Kachin and Shan States in the north and north-east of the country, with a little from the central Pegu Yoma Mountains. Myanmar still has the largest population of both wild and domesticated elephants in South East Asia. Most elephant poaching is by soldiers in the Myanmar army and in the ethnic minority armies. Chin tribes on the border with India sell Indian tusks to middlemen who resell them in Mandalay. Tusk tips and tusks from dead domesticated elephants are sold to carving workshops and shop owners. Buyers said they could get permits from the Forestry Department to transport legal raw ivory and also that officials at the military check points could be bribed if undocumented ivory were found. In Yangon a tusk tip weighing between 1.5 and 5 kg cost USD 142/kg. It would cost the same or slightly less in Mandalay. A tusk weighing more than 15 kg was USD 355-497/kg. Small pieces ranged from USD 42.50-85/kg.

## Nepal

Tusks can be obtained when wild elephants in Nepal die. The population, however, is very small, found mostly in and around Bardia National Park in the west of the country. More frequently, ivory comes from cutting off tusk tips from domesticated elephants; females do not have tusks but only very small tushes, which cannot be pruned. Nepal's domesticated elephant population is also small, and as in all these countries, most are females, so the supply of ivory is limited. Rich Nepalis sell some tusks to traders from old private stocks. Nepal also receives a few tusks smuggled in from north and north-east India. The price of good-quality raw tusks as offered by a trader to a shop owner or carver in the Kathmandu area was USD 187/kg in early 2001, a decline from 1998 when it reached an all-time high of USD 242/kg, implying a decrease in demand.

## Singapore

All ivory entering Singapore for the domestic market is worked. Most of it comes from China with origins in Africa. In 1979 Martin found that most of the raw ivory carved then was from Africa and sold wholesale in Singapore for USD 140/kg.

## Sri Lanka

Those dealing in ivory would not say where tusks came from nor their price, except to say they were priced not by weight but individually by quality. Most come from dead or poached elephants around the town of Polonnaruwa, from Wilpattu National Park or occasionally from those killed by land mines in the north. It is unlikely that raw ivory is smuggled into Sri Lanka as the risk is too great compared with the pay-off. In 1999, however, the Fauna and Flora Protection Task Force of the Customs Department seized several carved ivory pieces in Colombo port from a ship coming from Ghana (Kambe



2000). A little worked ivory still comes in from India. One pair of 25-cm tusks was seen for retail sale priced at USD 556/kg, but it could have been bought for up to 50% less after bargaining.

## **Thailand**

Most ivory sold in the country is not from Thai elephants. Strong evidence based on data from carvers and shop owners and on shipments of raw ivory that were intercepted by the Thai authorities from 1995 to 2000 (Associated Press 2000; Srikrachang and Jaisomkom 2001) suggests that most ivory is smuggled in from Africa. Ivory is also smuggled in from Myanmar's border town of Tachilek across to Mae Sai in Thailand, a major route for ivory smuggling for at least a decade. Poaching of Thai elephants has not been common in the 1990s. Numbers of domesticated elephants at around 2500 with an estimated 600 being adult males with tusks (R. Lair, pers. comm. 2000) are probably greater than those in the wild, so tusk tips are frequently used by the carvers. The wholesale price for an average African or Asian tusk of 5 kg was USD 159/kg; small tusks were USD 68/kg and tiny pieces cost USD 23/kg in 2000.

## **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. Even more than in Cambodia, the once-large elephant population has been virtually wiped out in recent years, falling from 1750 in 1989 to an estimated 135 in 2000 (Kemf and Santiapillai 2000). Raw ivory is thus smuggled in from Cambodia and Laos. Perhaps 200 or so domesticated elephants in Vietnam in 1996 (Lair 1997) supplied a little ivory. Tusk tips were USD 350-500/kg while poor-quality tusks sold for USD 171-233/kg in 2001. A major workshop owner was buying African ivory smuggled in from Angola by a Vietnamese for USD 300/kg in 2001. He said he would telephone a contact in Angola when he needed ivory. Prices rose from earlier years because of economic liberalization and the increase in tourism.

## **Ivory workshops**

### **Cambodia**

Most ivory craftsmen live in and around Phnom Penh. In 1994 there were about 30 (Martin and Phipps 1996), and in 2001 the figure was about the same. Older carvers are still teaching young men to carve. A little carving is still sometimes done in Pursat, Battambang and Siem Reap if ivory is available. Local ivory is enough to satisfy demand as Cambodians, who are the main buyers, cannot afford large pieces. Very small (2-3 cm) Buddha amulets are the main items produced.



## Laos

Three woodcarving teachers at the National School of Fine Arts in Vientiane carve ivory Buddha amulets and other small items when commissioned. An antique shop in the Morning Market employs two carvers. These are the only five carvers now working on ivory in Laos because demand is low. In 1990 there were 10 carvers in Vientiane and a few in Luang Prabang (Martin 1992a).



In 1982, the ivory items highest in demand were prayer wheels and religious sculptures.

## Myanmar

In Yangon, some workshops are in people's homes in the suburbs, where carvers still work with hand tools and vices. One ivory workshop is near Shwedagon Pagoda along with wood carving workshops. Five workshops with about 10 craftsmen were found. They are provided with ivory (usually less than 1-kg pieces) and work on commission for dealers, who sell ivory items to shops and embassies. Some carvers are moving to Mandalay where there is more raw ivory. In Mandalay, about 32 ivory carvers work in three main workshops, fewer than in 1989 (Luxmoore 1989) and 1995 (Martin 1997), some working part-time for more than one workshop.

## Nepal

In 1982 there were eight ivory craftsmen, all using hand tools, but by 1991 only three were left because of difficulties in obtaining tusks. By 1998 only one carver was still active, and he was earning less in 2000 than he had two years earlier, now earning on a par with a skilled worker such as a carpenter rather than as an artisan. An artistic tradition practised for hundreds of years in Nepal had virtually stopped.

## Singapore

In 1979 Martin counted 30 to 50 ivory carvers in Singapore, but ivory carving had stopped by 1990 because of government bans.

## Sri Lanka

Although in 1979 about 100 ivory carvers were working (Martin and Martin 1990), now there are only about 10 in Polonnaruwa and perhaps 4 in Kandy, working from



their homes. Most of the workshops, especially the larger ones in Galle and Kandy, have stopped ivory carving because of government crackdowns.

## Thailand

The main ivory-carving centre is Phayuha Kiri, a traditional small town with 12 shops selling mainly wholesale ivory items. At least 50 ivory craftsmen work freelance, mostly from their homes, and some are attached to the shops. The carvers obtain tusks from dealers and sell worked items to shop owners. Over 85% is jewellery that can be made quickly with electric-powered drills. About 20 ivory carvers work in the second main ivory carving centre, in and around Bangkok. Most Bangkok shopkeepers obtain their ivory items from Phayuha Kiri. Chiang Mai is no longer an important ivory carving centre, and dealers usually obtain ivory items from Phayuha Kiri to sell to the two main ivory shops in the town.

## Vietnam

Traditionally, the skill of ivory carving was passed down from father to son, but the practice is dying out, as educated boys do not want to do what they now perceive as manual labour. There are about four carvers in Hanoi and three or four families are involved in carving in small villages around Th'u'ong Tin, just south of Hanoi, but most of these are carving in wood and bone as there is little market for ivory. Ho Chi Minh City shopkeepers said their ivory was carved in Ban Ma Thuot, Hue and a village 70 km from the capital. The number of carvers is dropping as ivory prices rise and demand falls.

## Retail outlets and prices for worked ivory

### Cambodia

Some 54 souvenir and jewellery shops plus one antique shop offered 1683 ivory items for sale in Phnom Penh with 78 more items on display in a souvenir shop in Siem Reap next to the Angkor Wat ruins. Most of the items were Buddha amulets (82%) locally carved in Phnom Penh and flower buds worn as jewellery (9%) costing around USD 5 each. Most were bought by Cambodians, although some Thais and French also buy the Buddhas.

### Laos

Out of 182 shops, 63 were selling small amounts of ivory items, totalling 1424 pieces. Most were 3-4-cm Buddha amulets and pendants. These items were also carved from bone and deer antler, which were hard to distinguish from ivory. The bigger items were antiques, as there was little demand for new large pieces. Mounted and carved tusks



could be as small as 6 cm because of the shortage of ivory. Vendors said that the sale of ivory items had remained stable and slow over the past five years. Mostly Laotians bought the amulets, but Chinese from China, Hong Kong and Thailand and some Japanese bought other items in Vientiane. Europeans bought antiques in Luang Prabang.

### **Myanmar**

A total of 53 shops carried 5801 ivory items in Mandalay and Yangon. None was seen in Bago. Shops must be registered with the government to sell worked ivory, gems, gold and antiques. The increased price of raw ivory was forcing up prices of worked ivory a little, but vendors said that the retail ivory trade was good and had been growing over the past three years. Some Burmese-worked ivory goes to China and Thailand. In Yangon the main buyers in order of importance were ethnic Chinese from Thailand, Hong Kong, Singapore, Malaysia and China; Japanese and Indians; and occasionally wealthy local officials. In Mandalay, some vendors said that Germans, Italians and Spanish also bought worked ivory. Because of the CITES export ban a vendor will, if asked, write on the receipt that the item is bone, or the customs officer is simply bribed.

### **Nepal**

Ivory items were found in 57 of the 200 curio and jewellery shops in Kathmandu. In 1998, 71 out of 184 shops were selling ivory (Martin 1998). In 1998, 1454 ivory items were counted, and in 2001, 1546. Only 38 % of the items were made in Nepal compared with 53% in 1998. China followed with 33%, India with 22%, Tibet with 6%, and Japan, Hong Kong and Europe 1%. Indians and Tibetans smuggle worked ivory into Nepal by road while some shop owners order items from China, Hong Kong and Japan or go there to purchase them. Retail prices in US dollars have remained about the same from 1998 to 2001; shop owners are starting to phase out ivory as it is not profitable enough. The main retail buyers were French, Germans, Italians and Japanese. Despite an increase in tourism from 1990 to 1997 (Shrestha 2000) ivory sales have fallen by 90% since 1990.

### **Singapore**

Some 23 shops out of 158 were selling 2700 ivory items, mostly smuggled in from Beijing and Guangzhou in China and from Hong Kong. Retail prices were higher in 2001 than before 1990, as Chinese source prices had increased. The lowest prices were in Chinatown, as perhaps they were actually pre-1986 stocks. Other vendors said they had stopped selling ivory after it was made illegal. Overall, Singapore prices were the highest seen in the study. The most common item was the name seal, bought by East Asians, as were Chinese figurines. Singaporean Chinese preferred larger items.



## Sri Lanka

Out of 113 antique and craft outlets, 22 were selling 620 ivory items in the towns surveyed. Kandy, Polonnaruwa and Colombo sold the most, followed by Negombo, Beruwala and then Hikkaduwa. Darnbulla, Galle, Ratnapura and Sigiriya had no ivory. In Colombo, unlike elsewhere, nearly all the items were kept in cupboards or closed safes as the vendors feared government inspectors. Nearly all items were carved in Sri Lanka, with a few from India and China. One bust was carved on a tusk from central Africa. Prices were highest in Colombo, then in Kandy, then in the coast towns, and finally in Polonnaruwa, near where elephants are currently poached. Shopkeepers are willing to issue false receipts for the ivory items stating they are cow or water buffalo bone to enable export and destination import. Sales were quite slow, the vendors said, with prices lower than five years ago. Many vendors said they had stopped buying ivory, but this was not so in the tourist centres, mainly Kandy. Mainly Portuguese and Dutch collectors buy the ivory antiques while British, Dutch, French and Portuguese tourists buy newer, cheaper items. The Japanese were the main buyers until the mid-1990s, when the civil war with the Tamil Tigers discouraged their visits.

## Thailand

In Thailand, 88,179 ivory items, the great majority trinkets, were counted in about 194 shops in the three main centres. Bangkok sold 38,510 items in 164 antique and curio shops, with the main buyers being Americans, Europeans and Japanese; next were Taiwanese. In Chiang Mai, 9 shops offered 80% of the 10,020 ivory items for sale with the main clients being Hong Kong Chinese, Malaysian Chinese, Singaporeans and Taiwanese. In Phayuha Kiri, 12 shops offered 39,649 items, most offered wholesale but some sold retail to Chinese, Japanese and Taiwanese.

## Vietnam

In all, 3039 ivory items were found in 50 outlets out of the 276 visited, mostly in Ho Chi Minh City but also in Hanoi. All tusks seen for retail sale were at least 30 cm in length, unlike in Laos. There were 10 African items in three shops in Ho Chi Minh City, including three busts for USD 700-1000 that had been there for five years. Vendors reported that retail sales of ivory had dropped since 1995 after Vietnam joined CITES. Prices of larger items had stayed the same over the past five years because demand for them had declined despite their scarcity, but smaller pieces had increased considerably in price since 1990/1 (Martin 1992b) as they are more popular, being easier to smuggle. In Ho Chi Minh City the main buyers were ethnic Chinese from East Asia, with Taiwanese preferring the larger items. In Hanoi, Chinese, Japanese and Vietnamese buy ivory, as well as Americans and French.



## Discussion

The number of ivory items in Thailand greatly exceeds that in any country in Africa (Martin and Stiles 2000). The Ivory Coast and Egypt, the African countries with the most ivory for sale, together only had a little over 40,000 items compared with over double that amount for Thailand. The weight of ivory items displayed for sale in Thailand also exceeded that in any African nation. The rankings of countries in South and South East Asia based on estimated weight of worked ivory for sale were, in descending order, Thailand, Myanmar, Singapore, Vietnam, Nepal, Sri Lanka, Cambodia and Laos. The total number of ivory items seen in these 8 countries was about 105,000 (table 2) compared with 110,000 counted in the 15 countries surveyed in Africa in 1999, but in terms of weight, African countries had more ivory for retail sale than South and South East Asia.

Retail prices for ivory items were highest in Singapore; next were those in Vietnam, where raw ivory was the most expensive because it was scarce; items were cheapest in Myanmar, where raw ivory was the least expensive. Thailand's raw ivory and worked ivory prices were also fairly low, as Asian ivory has to compete with the lower price of imported African ivory, with comparable tusks costing the same within Thailand.

Some data are available from past studies to compare the ivory trade today with that of previous years (table 1). The data show that raw ivory prices in dollars were higher in 2000-2001 than for any of the years before 1990. But mid-1990s prices in Cambodia, Myanmar and Nepal were higher than those in 2001. The number of ivory carvers has decreased notably in Laos, Nepal, Singapore, Sri Lanka and Vietnam, and the number of ivory retail outlets has decreased in Nepal, Singapore and Vietnam. The minimum number of ivory items seen in Nepal in 1998 and 2001 was about the same.

Table 2: Ivory trade indicators for South and South East Asia in 2000-2001

Country	Retail outlets	Workshops	Craftsmen	Price/ kg < 2 kg	Raw ivory 2-5 kg	(USD) > 10 kg	Minimum no. items
<b>Cambodia</b>							
Phnom Penh	55	-	c.30	150	350	450	1,683
Siem Reap	4	-	-	-	-	-	90
<b>Laos</b>							
Luang Prabang	10	0	0	-	-	-	78



Vientiane	53	4	5	-	250-300	-	1,346
<b>Myanmar</b>							
Mandalay	19	c. 6	c. 30	-	142	> 350	2,363
Yangon	34	5	10	43-85	142	-	3,438
<b>Nepal</b>							
Kathmandu	57	2	4	-	166-207	-	1,546
<b>Sri Lanka</b>							
Colombo	6	0	0	-	-	-	102
Kandy	7	c. 3	c.4	-	-	-	355
Negombo	3	0	0	-	-	19	
Polonnaruwa	3	3	c.10	-	-	-	116
SW coast	3	0	0	-	c. 300	-	27
<b>Singapore</b>							
Singapore	23	0	0	-	-	-	2,700
<b>Thailand</b>							
Bangkok	164	-	c.20	23-68	91-182	-	38,510
Chiang Mai	18	-	6?	-	-	-	10,020
Phayuha Kiri	12	-	> 50	23-68	91-182	-	39,649
<b>Vietnam</b>							
Hanoi	13	5*	c. 20*	-	350-500	-	777
HCMC	37	> 1	> 2	-	350-500	-	2,262
<b>Total</b>	<b>521</b>	<b>c.30</b>	<b>c.200</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>105,081</b>

- no data

\*including Th'u'ong Tin village 20 km south of Hanoi

Why were pre-1990 South East Asian prices for tusks lower than in 2001 while those in Africa were higher before 1990 than in 1999 (Martin and Stiles 2000)? Immediately after the 1990 CITES ban, raw ivory prices rose in Asia and fell in Africa as exports from Africa dropped, increasing the supply in Africa and reducing it in Asia. Illegal trade routes have since been developed to send ivory from Africa to Asia, so the price rises in raw ivory seen since 1990 in a few African countries may be related to this. But demand



for raw ivory is greater in nearly all of Asia than in Africa today, with local supplies of Asian ivory dwindling, with constricted imports of African ivory in the 1990s, and with a booming tourist economy in the Asian region, resulting in higher prices there. The Asian ivory market has suffered since the 1997 economic crisis. Recent reductions in raw ivory prices reflect this and perhaps also come about as a result of increased imports of illegal African ivory to Thailand.

Ivory demand has probably declined in Cambodia, Laos, Singapore and Vietnam since the mid-1990s. The number of shops selling ivory items has declined in Singapore because of the decrease in customers. 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. Informants said that business was slower in Vietnam than in the past, in spite of price rises for both raw and worked ivory, which are due to ivory scarcity and not to increased demand.

In the mid-1980s, Thailand exported 200,000 (plus or minus 50,000) pieces of worked ivory a year and many Bangkok shops displayed large quantities of ivory (Luxmoore 1989). Although the number of tourists has increased significantly in Thailand from 1990, the CITES ivory ban has probably kept the Thai ivory market at roughly the same level as it was in the 1980s, although almost all sales are now internal rather than wholesale exports. Work carried out by TRAFFIC in Thailand in 1997 supports this view for the 1990s (Nash 1997).

Myanmar's raw ivory prices have been rising steadily since 1981 as measured in local currency, but because of the depreciation of the kyat, the USD price has fluctuated. In 1981 the price was USD 26/kg. By 1995 prices had skyrocketed to USD 239/kg but in early 2001 had fallen to USD 142/kg for medium-sized tusks. The kyat price was 45,000/kg in 1995 and 100,000/kg in 2001, an increase of more than 100% in Burmese terms. Vendors said that business had been increasing since the early 1990s, explaining the kyat price increase. Although the number of craftsmen has decreased since 1995 as old carvers retire, the remaining craftsmen may have increased their productivity to keep up with the demand.

Ivory demand in South Asia has declined over the years in response to rising prices and increased risk related to selling ivory, as evidenced by the decline in the number of ivory retail outlets and craftsmen in Nepal and Sri Lanka. Virtually no worked ivory has been displayed in India since the CITES ban, and the number of ivory craftsmen has declined significantly since 1989 (Vigne 1991).

Unlike in Africa, no shop owner or vendor in South or South East Asia mentioned the 1999 approved auctions of government ivory stocks in southern Africa to Japan. This



was either because they did not find them significant or more likely had never heard of them. Some ivory craftsmen had heard of the auctions but did not think them relevant to their business. The auctions thus did not cause the ivory trade to increase in these two regions as had been feared and as had occurred in a few African markets.

Views in general of the future of the ivory trade were pessimistic. Craftsmen are not encouraging younger members of their families to learn the art. In Nepal, they doubt that any market will remain for their carvings in another 10 years. In Vietnam, many have given up ivory carving, and in Sri Lanka, where the government has cracked down on the ivory trade, it is a dying profession. Even in Thailand the craftsmen in Phayuha Kiri fear dwindling supplies of tusks in the future. Only in Myanmar, where there is currently a healthy ivory market, is there any optimism.

## Conclusions

Although the ivory trade has declined from 1990 in Cambodia, Laos, Nepal, Sri Lanka and Vietnam, the trade seriously threatens their small and dwindling wild and domesticated elephant populations. Although Singapore's ivory trade has also declined significantly since 1990, the country puts pressure on both Asian and African elephants as newly carved ivory from China is still imported. In Myanmar, the ivory trade increased from 1990 to 1995, when it peaked, but since then it has remained stable or has slightly declined. The number of wild and domesticated elephants in Myanmar can sustainably support the current level of trade within the country. Myanmar's exports of tusks and worked pieces to Thailand and China, however, may exceed sustainability. Thailand's ivory trade has remained stable and large since the late 1980s. The country's elephant population is thought to have remained stable since then as it illegally imports large amounts of raw ivory from Africa, and secondarily from Myanmar.

The wholesale price of raw ivory was higher in 2001 than in the late 1980s in the countries surveyed. In 2001 the average tusk price was over five times higher than in Africa (USD 250 versus USD 45). This high price has put severe pressure on Asian elephants, and if this demand continues, the poverty-stricken rural people will risk poaching even more, as the economic returns are high.

None of the governments for the countries surveyed has control over the ivory trade. Although the number of craftsmen has decreased in the 1990s in general, Chinese businessmen continued to smuggle ivory items to many Asian countries, and even some Western tourists, despite the negative publicity in their countries, have continued buying ivory trinkets. The number of foreign tourists and businessmen visiting South and South East Asia, more than 20 million a year, has been increasing at a rate of over a million a year, ensuring that the demand for ivory will continue.



The governments of these countries need to improve their domestic legislation and increase enforcement, as India has done. Laos must join CITES, and all countries in the region need to enforce CITES regulations to stop the import and export of raw and worked ivory.

It is far more economical to control the marketing side of the ivory business than to prevent elephant poaching. If there is a significant decline in the ivory market, ivory prices should fall and elephant poaching decrease dramatically. A high demand for ivory in only a few countries can affect elephant populations in many others. If CITES and the national governments of the countries involved do not improve and enforce their laws and decrees, the ivory markets and buyers will continue to claim the lives of many African and Asian elephants.

### **Acknowledgements**

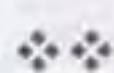
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# 15 Rhino poaching in Nepal during an insurgency

(*Pachyderm*, January-June 2004)

EBM

## Abstract

*Nepal's rhino conservation has been one of the most successful in the world. Rhino numbers increased from about 95 in the late 1960s to 612 in 2000, almost all in and around Royal Chitwan and Bardia National Parks. From mid-2000 to mid-2003, however, at least 91 rhinos were poached for their horns and nails, the largest number anywhere during this time. The main reason was Maoist insurgents, who are breaking down law and order in most of Nepal. The part of the Royal Nepalese Army based inside the two parks, fearing attacks from the Maoists, withdrew from 30 guard posts to reinforce their remaining 14. Adding to this problem, Chitwan's communication repeater station broke, intelligence funding for the Chitwan area was cut, and patrolling needed updating with the extra pressure on the parks. Thus, poachers could more easily enter the parks and kill rhinos. In 2003 the Parks Department started to implement new anti-poaching strategies that were more effective. Strategies included more funds for intelligence; improved cooperation regarding rhino protection among the parks, Army and NGO staff; a new patrol system for Chitwan; improved telecommunications; more help from neighbouring communities to identify potential poachers; and of greatest importance, better leadership. Rhino poaching was nearly stopped with only one rhino known to be killed between July and December 2003.*

## Introduction

Insurgencies in Africa and to a lesser extent in Asia cause rising levels of rhino poaching. Occasionally, such rebel activities have enabled poachers to move into wildlife protected areas and eliminate rhinos due to breakdown in law and order. Recent examples in Africa have been in Chad, Democratic Republic of Congo (DRC), Mozambique, Rwanda, Sudan, Uganda and Zimbabwe. Burma, India, Indonesia and Nepal have also witnessed insurgency groups, including Marxists, Maoists and other rebels, fighting against their central governments, to the demise of the rhino. Internal conflicts occurring today that are causing rhinos to be poached in Africa are in DRC's Garamba National Park, southern Sudan and Zimbabwe's wildlife conservancies. In Asia, the target areas are in Assam in north-east India, Aceh Province in Indonesia and around Royal Chitwan and Bardia





Because rhino horn is extremely expensive, fakes made of wood are not uncommon. The District Forest Office in Kathmandu had these examples in 2003.

National Parks in southern Nepal. In some countries, the insurgents themselves are poaching rhinos such as the Sudanese rebels in Garamba and the so-called war veterans in Zimbabwe. Elsewhere, such as in Nepal, neighbouring villagers rather than rebels are taking advantage of the weakened control and are poaching rhinos.

This paper examines the difficulties that Nepal has faced since 2000 due to rebel activities and how the Nepalese authorities have fought back to protect their rhinos. From mid-2000 to mid-2003, Nepal's rhino poaching had been the worst since the national parks were founded and the worst in the world during that time. However, from July 2003, the Parks Department has made a remarkable recovery despite having to continue to battle with insurgency problems. Perhaps other wildlife departments in Africa and Asia should learn from Nepal on how to reduce rhino poaching during a major insurgency.

## Methods

I carried out fieldwork in Nepal for three weeks in December 2003 with visits to Kathmandu, Royal Chitwan National Park and Royal Bardia National Park (fig 1). These national parks and their surrounding areas are home to all Nepal's greater one-



horned rhinos except for six in the Royal Suklaphanta Wildlife Reserve. I interviewed personnel from conservation organizations, the Department of National Parks and Wildlife Conservation (DNPWC), the Royal Forest Department, the Royal Nepalese Army, academics, and other knowledgeable individuals. I read reports, both published and unpublished, on rhino conservation, especially those dealing with anti-poaching strategies.

## **Results and discussion**

### **Political developments in Nepal**

With the overthrow of the panchayat regime, parliamentary elections were held in 1991, and Maoists were able to win some seats. In 1995 the Police launched a broad sweep against these left-wing activists in the western part of the country. Following this, the leaders of the Maoists publicly announced a doctrine of violence. In 1996 the Maoists launched their first incursions. Since then they have attacked the Army, Police, Forest Department buildings, bridges, clinics, dams and electricity generating stations. The Maoists have also tortured and executed government teachers and local political leaders. On 26 November 2001 a state of emergency was declared in Nepal. From 1996 to December 2003 at least 8,500 people have been killed in the conflict on both sides (International Crisis Group 2003; Sahni 2003).

The Maoists have been demanding an interim government in which they would have major influence. They wish - at the least - to reduce the power of the royal family, eliminate rich landlords, redistribute land to the poor, lower interest rates of moneylenders, reduce government corruption and remove the caste name 'untouchable'. Maoists are not against the tourists who come to Nepal; they support a clean environment but have not been specific about wildlife.

The effect of the Maoist uprising on the economy and society of Nepal has been devastating. During the 1980s Nepal's average gross domestic product increased by 4 to 5% a year (Rana 1999). However, from 1999/2000 to 2002/03 the per capita income actually fell to USD 249 a year, one of the lowest in Asia (His Majesty's Government 2003a). Fighting and bombings in Nepal have scared away new foreign investment and many townspeople and productive farmers are leaving for India, the Gulf States and Malaysia. In 1999 there were estimated to be 90,000 Nepalese in the Gulf and 34,000 in eastern Asia (Rana 1999). By 2002 numbers were up to 170,000 in the Gulf and at least 64,000 in Malaysia alone (Swiss Development Corporation 2003). In Nepal, farmland has become fallow, overall agricultural production has fallen, and working hours have declined due to curfews and fear of attacks (Chazee 2003). Imposed Maoist taxes in the



countryside have resulted in 120,000 to 200,000 internally displaced people who have found refuge mostly in towns since 2002 (Laurent Chazee, Asian Development Bank, pers. comm. 2004). The number of foreign tourists to Nepal fell from 491,504 in 1999 to 361,237 in 2001 (His Majesty's Government 2003a), which has diminished the revenue of the national parks and buffer zones. One night in November 2003, bandits, probably Maoists, attacked a tourist lodge in Royal Chitwan National Park, the Gaida Wildlife Camp, burned down part of it and stole money from the manager, which alarmed the tourists. There have also been numerous incidents of extortion from hotels, lodges and tourism businesses since 1996.

### **Recent rhino poaching in the Chitwan Valley**

Royal Chitwan National Park was gazetted a park in 1973 and from then until 1998, about 66 rhinos were known to have been poached in the Chitwan Valley, which covers the park and surrounding areas. Thus an average of 2.6 a year were poached (Martin and Vigne 1995; Martin 1998). In 1998 and 1999, 20 rhinos were illegally killed, on average 10 a year, and in 2000, 15 were poached (Martin 2001). Rhino poaching continued to surge up to mid-2003. Several sets of figures are given for those three years for Chitwan Valley. The Nepalese calendar-year figures given for April 2001/02 were 34 and 30 for the following year (Letter from K.J. Kunwar, Assistant Warden, Chitwan Park, to the Manager, Tiger Tops Lodge, 17 September 2003).

For the western calendar, the Nepal 'Annual Report of CITES Unit' gives 13 poached rhinos for 2000, 18 for 2001 and 37 for 2002 (Dhakal 2003). Tika Ram Adhikari, the former team leader of the anti-poaching units in the Chitwan Valley, also gives the calendar-year figures of 18 for 2001 and 37 for 2002 (Adhikari 2002). However, Chapagain and Dhakal (2003) state that rhinos poached numbered 12 in 2000, 17 in 2001 and 35 in 2002. I have chosen for this article the figures published in the DNPWC annual reports, which are for the Nepalese financial year. This is because they give the most details on where the rhinos were poached, by what method, and what body parts were removed. These figures show that 12 rhinos were poached during the financial year July 2000/01, 38 rhinos during July 2001/02, and 28 during July 2002/03 (see table 1). All sets of figures show that 2002 was the worst year for rhino poaching in Nepal. This spate of poaching would have considerably reduced the growth potential of 544 rhinos, as counted in the 2000 census for Chitwan Valley, which was the latest.



Table 1: Minimum number of rhinos poached in Nepal, July 2000 to December 2003

Year	Chitwan Valley	In and around Bardia Park	Total
2000/01	12	2	14
2001/02	38	3	41
2002/03	28	8	36
2003 (Jul-Dec)	1	0	1
<b>Total</b>	<b>79</b>	<b>13</b>	<b>92</b>

Sources: Subba 2001-2003; Kunwar, pers. comm. 2003

DNPWC's poaching figures show that 65% of the poaching of rhinos in Chitwan Valley occurred in the park: 5 were taken in 2000/01, 24 in 2001/02, and 22 in 2002/03. All except for one were killed using modern .303 rifles or home-made guns; that one was found dead from poison just inside the park in 2001/02. In the rest of the valley, most



Only because there was an opening in the high grass could this rhino be seen, which helps to explain why it is so difficult to obtain an accurate census of rhinos.

were shot, but 6 were electrocuted, either from electric fences or from electric wires hanging down from power cables. The data are precise from July 2001 to July 2003 for the 66 rhinos killed in the Chitwan Valley. There were 46 poached in the park, 16 outside and 4 from unknown areas. Horns were removed from 48 of the animals, 36 inside the park, 9 from outside and 3 from unknown areas. Data are available about the nails on 53 of the rhinos; 9 had had their nails removed, at least 6 inside the park (Subba 2002, 2003).

The poachers are mostly local people who know the valley well, especially from the Brahman, Chepang, Chhetri, Magar, Tamang and Tharu ethnic groups. Outsiders would be spotted by the villagers surrounding the park and thus usually do not come. The Maoists do not poach as they have neither the experience nor the interest. A poaching gang consists of two to five men with one or several guns. Those entering the park cross the northern boundary where



many rhinos live. They swim across the Rapti River or use a tyre tube. Sometimes to be less conspicuous a gang member will go ahead with the guns to hide them in the park, before returning for the others. They bring dry foods (biscuits, rice and tea) as they often need to spend several days in the park, sleeping in trees or in caves, before finding their rhino.

For a gang of five, the shooter receives Nepalese rupees (NPR) 50,000 to 100,000 or USD 676 to 1,351 while the others may each receive NPR 25,000 to 40,000 or USD 338 to 513 for one horn averaging 722 gms (Kunwar, pers. comm. 1993). Thus the gang can earn from USD 2,027 to 3,514 for one horn, or USD 2,807 to 4,867 per kilogram. In 2000, according to arrested poachers, the maximum payment for a gang was then the equivalent of USD 5,894 per kilogram (Adhikari, pers. comm. 2001). This slight fall is partly due to the devaluation of the Nepalese rupee. Often a poaching gang will obtain assistance, financial or otherwise, from a middleman who lives in a nearby village or town such as Narayanghat. He pays the gang for the whole horn, not per kg. He then takes the horn to Kathmandu or sells it to another middleman who takes it to Kathmandu. The trader who buys it there for export pays the equivalent of USD 9,460 to 10,135 a kg (Kunwar, pers. comm. 2003). Very occasionally fake rhino horns, most often made of wood, are brought to Kathmandu for sale (see table 2).

**Table 2: Seizures of wildlife products by the Nepalese government in Kathmandu, 2000/01 to 2002/03**

Year and item	Pieces or weight
2000/01	
Elephant ivory	1.3 kg
Leopard skin	1
Musk deer pod	1
Otter skin	36
Python skin	1
Rhino horn, fake	1
2001/02	
Bear gall	1
Bear gall, fake	6
Beetle	271
Leopard bone	2 kg
Leopard nail	342
Musk deer pod	1



Year and item	Pieces or weight
2002/03	
Beetle	240
Leopard skin	109
Otter skin	14
Rhino horn, fake	3

Source: Krishna Raj Basukala, district forest officer, Kathmandu, pers. comm. 2003

### Reasons for increased rhino poaching in the Chitwan Valley

- The main reason for the upsurge of rhino poaching, from 2001/02 to 2002/03 was due to the Royal Nepalese Army changing the positions of its soldiers within Chitwan Park to prevent Maoist attacks on them. Until December 2001, one battalion of about 800 men was widely dispersed in the park at 32 guard posts. Then following the declared state of emergency and with increasing threats of Maoist attack, the Army decided to withdraw from 24 of the posts to concentrate their soldiers at the remaining 8 guard posts. The Army believed that the Maoists could too easily overrun a remote guard post occupied by only a handful of soldiers. From a military point of view this was a rational decision, but for rhino conservation it was a disaster. Although some media claimed incorrectly that the number of soldiers in the park was reduced, soldiers did abandon large areas of it, a fact quickly noticed by the poachers (Major Gunga Khadka, Deputy Battalion Commander, Royal Nepalese Army, Chitwan Park, pers. comm. 2003). In October 2003 the Maoists burned down one guard post in the east where some park staff were temporarily based, and they stole walkie talkies and a motorbike (Kamal Gairhe, veterinary officer, Chitwan Park, pers. comm. 2003).
- The Army stopped patrolling adequately as they feared they would be attacked by Maoists if they moved too far from their posts.
- The breakdown in law and order made it easier for the poachers and traders to operate in and around Chitwan Park.
- There was a reduction in payments for the park's former anti-poaching unit (APU) staff; for example, some incentive allowances stopped. Staff morale thus fell and motivation declined for the eight APUs stationed in the park, consisting of a ranger, senior game scout, about two game scouts and a local informer (Kunwar, pers. comm. 2003).
- Some of the more experienced anti-poaching staff were transferred, and APU activities slackened with limited patrolling (His Majesty's Government 2003b).



- Coordination among those involved in anti-poaching declined (His Majesty's Government 2003b (Narayan Poudel, deputy director, DNPWC, pers. comm. 2003; Gairhe, pers. comm. 2003; Kunwar, pers. comm. 2003).
- Those involved are the parks department, the Army, local informers, buffer zone committees the Forest Department, the Police, donor agencies and NGOs. The main reason for weakened coordination was that park wardens were frequently transferred, making continuity difficult.
- The informant network became poorly managed and coordinated. Therefore, the chief park warden was catching poachers only after a rhino had been killed, unlike before; poachers' confidence grew (Poudel, pers. comm. 2003).
- For many years the International Trust for Nature Conservation (ITNC), a British NGO, provided park staff with more money for them to give to their informants as wages and as reward money than any other organization in the Chitwan Valley. From April 2001 to April 2002, ITNC paid NPR 24,000 a month for informers (about USD 3,600 for that year). The ITNC staff based in Nepal, however, became disillusioned with the anti-poaching efforts in the park and wanted a new plan. They therefore cut off all funding of monthly payments for informers (but continued paying reward money) from July 2002 to April 2003 (Dinesh Thapa, manager, ITNC funds, Nepal, also manager, Tiger Tops Lodge, Chitwan Park, pers. comm. 2003).
- In mid-2002 heavy monsoon rains broke the communication repeater station and the solar power station in the park (WWF Nepal Program 2003). Park staff had very few mobiles and walkie talkies so communication among staff almost collapsed making, coordination with anti-poaching patrollers difficult.

### **Policy changes implemented in 2003 to stop poaching in the Chitwan Valley**

Senior staff of the DNPWC realized by late 2002 that their anti-poaching strategy was not working well. The national press published stories on all the rhino problems. The parks department therefore wrote background papers and held workshops to produce a new plan to protect the rhinos in Chitwan (WWF Nepal Program 2003). This new strategy started in early 2003. By mid-2003, with the arrival of a new chief park warden with excellent leadership ability, the anti-poaching plan started to work. He motivated his men and improved cooperation among groups involved in anti-poaching. From July onward, all strategies were implemented together and only one rhino was known to have been poached in the valley in the following six months (although carcasses may be found later). The factors involved were as follows.



- The main policy change that also brought most improvement concerned a change in the anti-poaching patrol strategy. Before, the APUs were based in specific parts of the park and just outside, and they patrolled within their limited area. The new strategy for Chitwan Park, adopted from Bardia Park, is called a 'sweeping operation'. It puts together a large group of men from the park and Army to patrol intensively when a problem is perceived. The patrollers use some of the park's domesticated elephants (which total 55), motor vehicles, motor boats and bicycles. The men may stay out for a week, camping in 'hot spots' where rhino poaching is common (Kunwar, pers. comm. 2003).
- Incentives for patrollers such as better food were improved, greatly boosting morale.
- Coordination between the Army and park staff was improved, with more meetings between senior personnel and better communication. Meetings were started among senior park staff in Kathmandu to assess and update the effectiveness of this new anti-poaching strategy.
- A flying squad of 9 park staff and 12 Army personnel was established to be able to reach the scene of an incident quickly.
- Army and park staff were increasingly allowed to go outside the park boundary to arrest poachers and traders, no longer having to rely solely on the Forest Department and Police for this, as was the case before 2002.
- Park staff took over and reinforced some of the abandoned Army guard posts and patrolled with domesticated elephants.
- ITNC recommenced its funding in early April 2003; thus informers were paid for their March work and this has continued. The funds were increased from NPR 20,000 to 25,000 (about USD 255 to 338) per month and are now given to the chief park warden to distribute. Of the NPR 25,000, most of it (NPR 20,000) goes to 10 regular informers while NPR 2000 is available as reward money and NPR 2500 goes towards the sweeping operations (Thapa, pers. comm. 2003). These funds, combined since July 2003 with monthly sums of NPR 16,000 from the WWF Nepal Program and NPR 20,000 from the King Mahendra Trust for Nature Conservation (KMTNC), total NPR 61,000 (USD 824) a month. This intelligence money is vital for the success of anti-poaching operations (Kunwar, pers. comm. 2003).
- The Parks Department received from the WWF Nepal Program a motor boat and a new communications network to replace the faulty one.



- A new, more skilled and motivated Army commander took control of the battalion in May 2003. The Army then became more active and effective in patrolling.
- The Parks Department further educated the people surrounding the park on the importance of rhino conservation and its benefit to them. Buffer zone inhabitants receive half the park revenue annually. This is a huge incentive for these 300,000 or so people living in the buffer zone to conserve the rhinos and other animals. At the end of 2003, the buffer zone council had NPR 76 million (USD 1 million) in the bank accumulated from around three years of revenue from the park (Meghanath Kafle, assistant warden, Chitwan Park, pers. comm. 2003).
- Around mid-2003, park staff helped officers in the buffer zone (who are elected from the villages to manage the zone) to initiate a volunteer campaign for the youth of Nawalparasi District to reduce rhino poaching. There are eight buffer zone user committees in this district and they all helped set up the youth groups and gave them financial assistance. Young people started to seek out potential poachers in the district, particularly among those working on the Narayani River such as transport boatmen and fishermen. This valuable information was given to park staff, which helped to eliminate rhino poaching in the district (Tirtha Maskey, director general, DNPWC; Shyam Bajimaya, ecologist, DNPWC; Poudel; Ram Prit Yadav, community development consultant, KMTNC; Kafle, pers. comm. 2003).

### Recent anti-poaching operations in the Chitwan Valley

Table 3: Number of rhino poachers and traders arrested in and around Chitwan and Bardia Parks, July 2000 to November 2003

Year	In and around Chitwan Park	In and around Bardia Park
2000/01	39	5
2001/02	28	9
2002/03	26	9
2003 (Jul-Nov)	17	?
<b>Total</b>	<b>120</b>	<b>23+</b>

Sources: Subba 2001-2003; Poudel, pers. comm. 2003

From early July to late November 2003, 52 poachers were arrested in the Chitwan Valley: 17 for rhinos, 2 for tigers, 5 for 'less important' animals, 19 for timber and 9 for other small offences (Poudel, pers. comm. 2003. See table 3). In August, following a tip-off from an informer, a poacher was arrested who claimed, probably correctly, to have killed 17 rhinos over the past seven years and earned NPR 875,000 for the horns. He came from Chitwan District and claimed to have killed all the rhinos with his home-



made muzzle loader (DNPWC 2003). He had been a poor man looking after domestic animals for another person. He was then attracted into poaching rhinos by a middleman who offered to buy any horns he could get. He shot 15 of the rhinos on the western bank of the Narayani River around Dibyapuri just to the north-west of the park. The poacher's main source of information on where the rhinos were in the area came from a community guard of the Forest Department. On one occasion he wounded a rhino with a bullet and then went up to it with an axe and cut off a leg to immobilize it!

From 2000/01 to 2001/02 the Army killed one rhino poacher, but in 2002/03 they killed six as anti-poaching was stepped up (Subba 2001, 2002, 2003). Thereafter, potential poachers feared to enter the park (Poudel, pers. comm. 2003).

### Recent rhino poaching in and around Bardia National Park

To establish a second rhino population in the country, in 1986 the parks department translocated their first group of 13 rhinos from Chitwan Park to Bardia Park in western Nepal. Since then there have been eight more translocations from Chitwan to Bardia with a total of 87 rhinos brought to the park by 2003. The most recent census in April 2000 showed 67 rhinos in the park; from then until November 2003 Bardia received 35 more rhinos (Subba 2003).



Placing a horn on top of a rhino skull indicates the prominence of the protuberance.

From 1986 to 1999 at least 10 rhinos were poached in and around Bardia Park, averaging less than one a year. More rhinos, 13, were poached from mid-2000 to mid-2003 in and around Bardia than in the previous 13 years combined; 12 were poached inside the park and each had its horn removed (but 2 were unrecorded). Records were kept on the nails of 9 animals; 4 had them taken, 5 did not. One more rhino was poached outside, but its horn and nails remained intact. Most poaching occurred in the Babai Valley in the south-east portion of the park where, along with the Karnali River floodplain, many rhinos are concentrated. It is a remote area with no proper roads and difficult terrain for the anti-poaching staff to patrol. Poaching gangs killed most of the rhinos with guns, usually home-made rifles.



Bardia has far fewer rhinos than Chitwan and they have only recently been translocated to the region, so contacts between poachers and middlemen are weaker. Almost all the horns are transported from Bardia to Kathmandu for export.

### **Reasons for increased rhino poaching in Bardia**

Rhino poaching escalated in Bardia from 2000 up to mid-2003.

- Two Army companies were stationed in the park (with 250 men each), but due to the threat of Maoist attacks, they halved their 12 guard posts to double up the remaining 6, leaving large areas with no protection.
- In early 2002 Maoists put a bomb on a road 15 km from the park near the Indian border to ambush the Army; seven soldiers were killed including a major who was commanding one of the companies in Bardia (Major Sudeep K.C., company commander, Thakurdwara, Bardia Park, pers. comm. 2003). They also harassed nearby villagers in 2002. With insecurities in the countryside, it was easier for poachers to enter the park.
- Maoists extorted money from managers of tourist camps and lodges and scared away the tourists from Bardia. From a peak of 12,388 in 2001, numbers fell to 2,895 in 2002/03 (Subba 2002 and 2003). Of the 19 tourist lodges and camps around Bardia, 4 were closed in December 2003, and compared with 300 staff in 2000, only 97 remained for the 290 beds available. The main road from Kathmandu to Bardia is now closed every night and there are about 12 Police and Army checkpoints, each one of which takes a bus about half an hour to get through. From late 2002 to late 2003 the government cut off all phones in the area to hinder the Maoists, but tourist facilities suffered too. Employees of these tourist facilities (12 of which are owned by local people) are in fear of losing their jobs. Bardia's buffer zone of 328 km<sup>2</sup> is no longer receiving the large tourist economic benefits as in the past (half the park revenue), due to Maoist activities, so the 100,000 local villagers are also now struggling. Thus, they have less desire to help protect rhinos, especially considering that they damage crops and livestock - and injure people. Between 1998/99 and mid-2003, 21 people have been killed by rhinos in Nepal, including 2 by Bardia rhinos (Subba 1999-2003).

### **Policy improvements in and around Bardia in 2003**

Nevertheless, from July to December 2003 no rhinos are known to have been poached. There are several reasons for this huge improvement, as compared with eight rhino deaths in the previous 12 months.





Photographed from the back of an elephant, a mahout (below) collects fresh urine, which he has spotted from the rhino (above), to alleviate his asthma.



Parks Department, Army, and buffer zone villagers improved with better cooperation, leading to the villagers providing more information on poacher suspects (Shant Raj Jnawali, project director, KMTNC, Bardia Conservation Programme; Babur Ram Yadav, assistant warden, Bardia Park, pers.comm. 2003).

- Coordination between the Army and the Parks Department improved, resulting in better sweeping operations, faster mobile patrols and regular patrols from the Army guard posts.
- The park staff had taken over four of the six empty guard posts by late 2003 (Puran Shrestha, chief park warden, Bardia Park, pers. comm. 2003).
- More anti-poaching patrols took place in the Babai Valley, including sweeping operations that lasted for many days, using 10 elephants, 20 elephant men, 20 game scouts, 2 or 3 senior game scouts, 2 rangers and some Army personnel.
- Starting in 2002, but improving by 2003, the park and Army staff were legally allowed to arrest poachers and traders outside the park as well as in.
- Overall relations between the Parks Department, Army, and buffer zone villagers improved with better cooperation, leading to the villagers providing more information on poacher suspects (Shant Raj Jnawali, project director, KMTNC, Bardia Conservation Programme; Babur Ram Yadav, assistant warden, Bardia Park, pers.comm. 2003).
- NGOs improved their education programmes in the buffer zone to make the residents more sympathetic to helping rhinos.
- NGOs put more resources into the buffer zone, financing the local people to build watch towers, trenches and construct electric fences to prevent wildlife from destroying crops and injuring people.
- The chief park warden started to hold monthly meetings to keep Bardia's anti-poaching strategies up to date and effective (Shrestha, pers. comm. 2003).



## Conclusions

It is vital that the most competent personnel be posted to the national parks, from the chief park warden downwards, especially during political insurgencies when law and order in a region break down, be it in Nepal or elsewhere. To select the best team is a tough job as it involves lobbying and creating the political and administrative will to get the best people in the responsible positions for as long as they are effective. NGOs should help ensure that the right government people are in service in the protected areas (Thapar 2003). No amount of vehicles and community development projects can significantly help without good park leadership. Thus, the key to the success of rhino conservation is getting the most capable park staff, keeping them in position for as long as is feasible, and supporting an effective anti-poaching strategy. Such a strategy consists of an adequate budget, sufficient personnel for patrolling, an efficient intelligence-gathering network, and on-going appraisal and implementation of the strategy.

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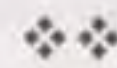
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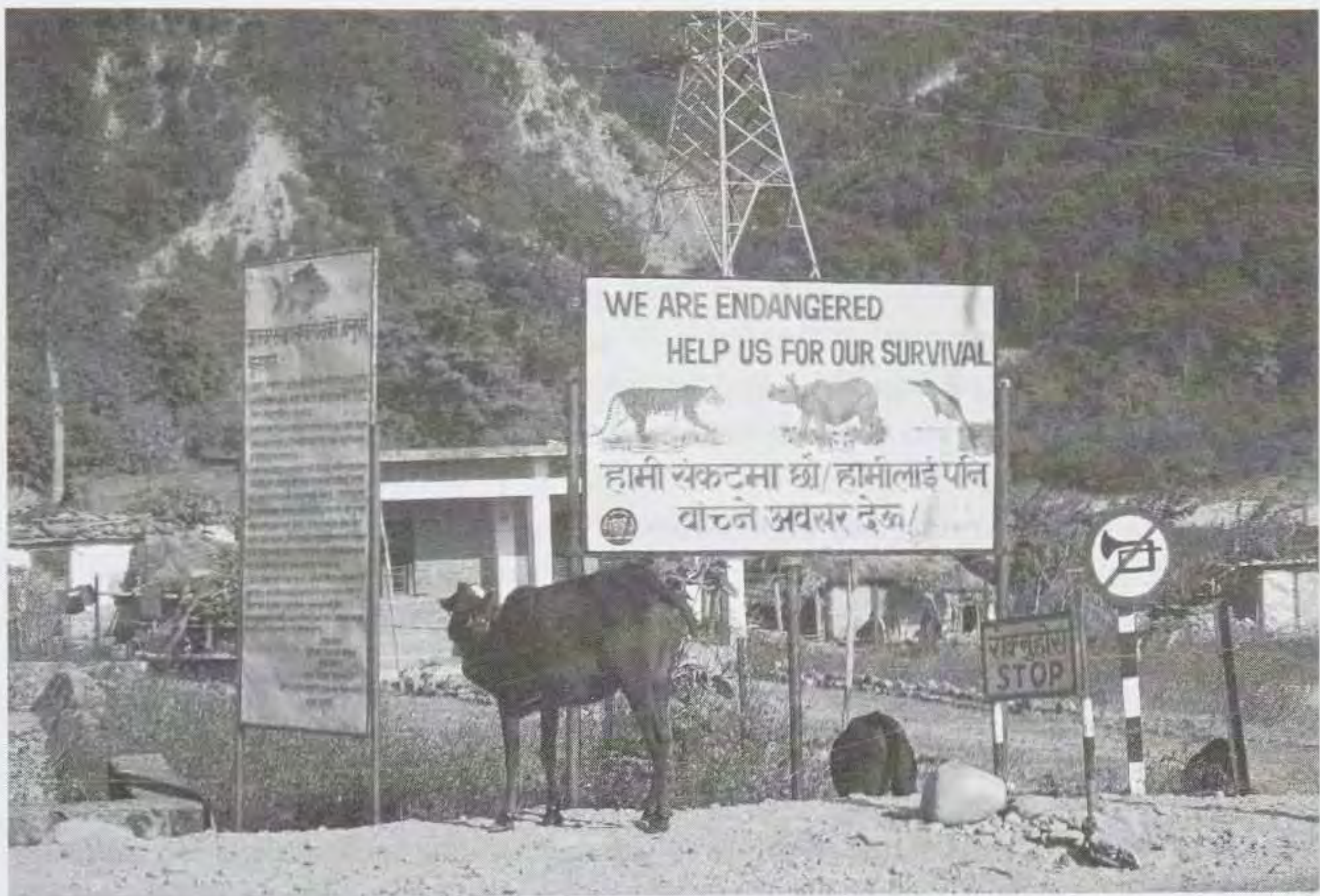




# 16 Nepal's new strategies to protect its rhinos

(Oryx, July 2004)

EBM and Lucy Vigne



Signboards like this are posted on roads leading to the national parks in an attempt to interest visitors and to encourage the Nepalese to protect wildlife.

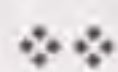
From mid-2000 to mid-2003 more rhinos were killed in Nepal than in the rest of Asia put together, at least 91 out of a population of c. 600. This alarming spate of rhino poaching has been due to a growing break down in law and order associated with the activities of Maoist rebels. One of the main problems was reduced vigilance in both the Royal Chitwan and Bardia National Parks, areas of nearly 1,000 km<sup>2</sup> each. With threats of Maoist attacks, many of the soldiers stationed in each Park moved out from the Park's guard posts to fortify other areas within the two Parks, leaving large areas unprotected. In response, staff of the Department of National Parks and Wildlife Conservation implemented a new and more effective anti-poaching policy in 2003. Part of this policy



involved game scouts taking over some of the original army posts in the two Parks. In Chitwan a so-called 'sweeping strategy' was adopted in 2003, as is used in Bardia, whereby a large group of soldiers and Park staff patrol intensively for 3-5 days through an area where poachers are suspected to be working. In Chitwan a flying squad was also set up to allow soldiers and Park staff to reach critical areas quickly. In Bardia the sweeping strategy in the remote Babai Valley, home to most of the Park's rhinos, was made more effective by using 10 elephants and about 45 Park staff and soldiers. WWF Nepal provided Chitwan Park with a motorboat and a new communications network, because during the monsoon in mid-2002 the Park's communication repeater station broke down and communication between Park staff and guards almost collapsed.

Another problem that was rectified in 2003 concerned Chitwan's intelligence network. The UK-based NGO, the International Trust for Nature Conservation, which funds monthly payments to informers (to provide information on potential traders and poachers), stopped its financial support from July 2002 to April 2003 as the Parks department was losing control of operations. With the new anti-poaching policy in place, funding resumed, a vital ingredient in keeping the poachers out of the Park. Another important development was that the Army and Park staff were permitted to go beyond the boundaries of the Parks to chase poachers, rather than having to rely on the police and Forest Department as formerly. Perhaps most importantly of all, coordination among all organizations involved in protecting rhinos improved with the arrival in Chitwan of a more effective Chief Park Warden and a new, more motivated Army commander in mid-2003.

The government has not cut its budgets for the two Parks, even though more money now has to be allocated to the military to fight the Maoist rebels. Since 2001 the government has allocated half of the Parks' revenue to villagers in the buffer zones. In addition, local villagers are also allowed, with permits, to cut reeds for thatch and fencing in Chitwan and Bardia; this is restricted to limited time periods, giving cutters sufficient time to collect reeds for their household needs but not for sale. In both buffer zones there are now more education programmes on rhinos, and NGOs have helped provide more resources for watchtowers and trenches (which help prevent rhinos from leaving the Park). In return, villagers are providing information on suspected poachers. Around Chitwan, one district has started a volunteer youth group to locate poachers along the Park's Narayani river boundary. By encouraging the 300,000 villagers in the 750 km<sup>2</sup> buffer zone of Chitwan and the 100,000 villagers in the 328 km<sup>2</sup> buffer zone of Bardia to become more sympathetic to rhinos, both poaching and human-rhino conflict should lessen. As a result of all these measures only one rhino was known to have been poached in Chitwan in the last 6 months of 2003, and there was no poaching at all in Bardia.





# 17 **Insurgency and poverty: Recipe for rhino poaching in Nepal**

(*Pachyderm*, July–December 2006)

EBM and Chryssee Martin

## **Abstract**

*With at least 108 rhinos known to have been poached from 2001 to 2005, Nepal probably had the worst rhino poaching of any country in the world. The Maoist rebel activity drew Army personnel away from the guard posts in Royal Chitwan and Royal Bardia National Parks, leaving the way open for poachers to enter more freely. Neither was their passage through the buffer zones much hindered by the people living there. Parks and non-government organizations have put large sums of money into the buffer zones to give financial support to local communities to improve their living conditions and to win their support for conservation. However, some local people who do not benefit enough from the buffer zone programme have even joined rhino-poaching gangs to act as guides. This report offers suggestions on how rhino poaching can be reduced in Nepal.*

## **Introduction**

In 2000 there were 612 rhinos in Nepal of which 544 were in and around Royal Chitwan National Park, 67 in and around Royal Bardia National Park and one in Royal Suklaphanta Wildlife Reserve. The population had increased at an annual rate of 3.88% per year from 1994 to 2000 (DNPWC 2000). From 2001 to 2005, however, more rhinos were illegally killed in Nepal than anywhere else in Asia and perhaps in the world. Numbers of rhinos poached peaked in 2002 to at least 38, declined in 2003 and 2004, then rose once again in 2005. This report considers the reasons for the trends in rhino poaching from 2003 to 2005 and explains why people living in buffer zones around the parks are allowing poachers to operate, especially in Chitwan Park. One of the main purposes for the Department of National Parks and Wildlife Conservation (DNPWC) and other organizations to invest relatively large sums of money into the buffer zones was to discourage support for rhino poachers. We suggest ways that could mitigate the poaching problem, though the worsening political instability and economic situation, due to the Maoist insurgency, are likely to hamper efforts.



## Methods

We carried out fieldwork in Nepal for three weeks, starting in mid-December 2005, mainly in Chitwan and Bardia Parks. We interviewed staff of the Department of National Parks and Wildlife Conservation in Kathmandu, forest officers in Chitwan District and in Kathmandu, and many NGO staff of the King Mahendra Trust for Nature Conservation, Wildlife Conservation Nepal, Wildlife Watch and WWF-Nepal, based in and around the parks and in Kathmandu. We also interviewed senior officers of the Royal Nepali Army who are based inside the parks and discussed with lodge managers in and around the parks the repercussions of the decline in tourism. We examined reports, mostly unpublished, prepared by the Department of National Parks and Wildlife Conservation, and obtained the latest economic and political data from the Asian Development Bank. NGOs and government officers have accumulated many figures on what poachers are paid for killing rhinos. These figures vary widely. We were fortunate to ascertain more likely prices for rhino horn when we were able to interview recently arrested poachers while we were in Chitwan Park. Not only did they give us information on the amount of money they had received in the past for horn but also what had been promised to them had they not failed in this attempt to poach a rhino. We learned about their background and how they were enticed into this illegal activity.

## Recent political and economic events in Nepal that affect wildlife conservation

Maoists in Nepal have been agitating for a socialist government for many years. Serious hostilities began in 1996, and the conflict between the Maoists and government authorities had resulted in the deaths of 13,000 people by the end of 2005 (Haviland 2006). The Maoists have destroyed thousands of public buildings, including telecommunication towers, police posts, post offices, and even guard posts within the parks. These offensive actions made the Army increase its attention to the people's security and concentrate its forces in fewer park posts. About 500,000 people have left on a long-term basis to India (Friedman 2005), and another 2 to 2.5 million are working abroad on a seasonal basis (Asian Development Bank 2004). The human rights abuses the Maoists and government authorities are inflicting are appalling.

The conflict has had serious ramifications on the country's economy. It has slowed to an average of 1.9% annual growth (below the human population increase in the country of 2.3%) from 2002 to 2004, compared with 5% from 1993 to 2001 (Asian Development Bank 2005). Arrivals of foreign tourists declined from a peak of 491,504 in 1999 to 277,129 in 2005 (Nepal, Government 2003; Anon. 2006), which greatly reduced the revenue the parks earned and thereby payments to people in the buffer zones. The military and security costs from 1997 to 2004 almost doubled (Asian Development





Rhinos figure extensively in Nepalese art. This pair of sculptures on the steps of the Batsala Devi Temple in Bhaktapur reflects the respect the people hold for the animal.

Bank 2004). The violence, poor security and chaos in the country have also curtailed many foreign-funded projects.

According to the Asian Development Bank (2004), a lasting solution to Nepal's problems will take place only when the root causes are tackled. These are social exclusion of certain castes and ethnic groups, huge economic inequalities, lack of opportunity, poor governance and corruption.

## **Results**

### **Royal Chitwan National Park**

#### **Rhino poaching and trade in the horn from 2003 to 2005**

Park staff carry out a rhino census of Chitwan Valley about every five years. In the 2005 count there were 372, a decline of 32% from 2000, due mostly to poaching but also to natural deaths and because 31 were translocated to Bardia Park, 4 to Suklaphanta Reserve and 2 to Japan (DNPWC 2005). The Department of National Parks and Wildlife Conservation has several sets of official figures on poaching incidents in Chitwan Valley from 2001 to 2005. One set is from unpublished statistics on file in the park



headquarters in Kathmandu, which gives the rhino's sex, date and place of poaching, cause of death, and what products, if any, were removed illicitly from the carcass. The second set, also unpublished, lists numbers without details and is from the assistant warden of Chitwan Park in charge of anti-poaching, who is resident at Kasara, the Chitwan Park headquarters. Some of the department annual reports (Subba 2001, 2002, 2003) give a third set of figures and poaching details, but these are not up to date and are for the Nepali financial year, not for the Western calendar, so are not used here. (Financial year statistics, when used in this report, refer from mid-July to mid-July and are written, for example, 2002/03.)

The first set records 94 rhinos known to have been poached over this recent five-year period, while the second set records 101 (see table 1). Usually figures collated in the field are more accurate than those noted in the capital city. We use here the second set of numbers of rhinos poached with the details from the Kathmandu statistics.

**Table 1: Known rhino poaching and total mortality from all causes in and around Royal Chitwan National Park from January 2001 to December 2005**

Year	Known poached (no.) *	Known poached (no.) **	Total deaths from all causes *
2001	16	15	27
2002	35	38	53
2003	19	22	36
2004	9	11	26
2005	15	15	-
<b>Total</b>	<b>94</b>	<b>101</b>	<b>-</b>

Sources: \* Department of National Parks and Wildlife Conservation Headquarters, Kathmandu, unpublished;

\*\* K. Kunwar, Assistant Warden and Coordinator of Anti-poaching, Chitwan Park, unpublished

Both sets of figures show that 2002 was the worst year for rhino poaching in Chitwan Valley - at least 38 animals - since the park was established in 1973. Reasons for this have been published elsewhere (Martin 2004). But the most important cause was the transfer of Royal Nepali Army personnel from 32 guard posts to only 8. In 2003, with the introduction of a new strategy to combat poaching (Martin 2004), the number killed declined to 22. Records state that of these, 16 were shot and 1 was electrocuted. In 2004 11 rhinos were poached, of which 6 are known to have been shot. In 2005 when 15 were poached, 11 were shot and 1 was electrocuted. Most of the rhinos killed illegally during these five years were inside the park.



Maoists are rarely involved in rhino poaching or trade in horn. They claim they want to protect the natural environment and furthermore do not possess the expertise of the poachers and traders. Most of the poachers come from just outside the buffer zone in gangs of four to eight that sometimes include a person from the buffer zone who is familiar with the area.

In January 2006 we met five gang members in confinement in the park at Kasara and interviewed three of them. They had been arrested a few weeks earlier near Sauraha, a village on the northern park boundary, while attempting a poaching operation. All the gang members belonged to the Tamang and Kumal ethnic groups, who live north of the park and are extremely poor. Krishna, 43 years old, said he was a farmer with four children. He admitted killing three rhinos in 2002 and 2003 but said he had been inactive in 2004 because members of his gang had been arrested. Ram, aged 45, had been in a gang that shot a rhino in 2004 and seemed to be the worst off; 7 of the 15 children his wife had borne had died. Surya, aged 20, was the illiterate son of a woodcutter, and this had been his first poaching attempt.

Krishna had organized this gang and was the leader and shooter. Ram said he had been talked into joining in order to carry the rations. Surya, who said he had been forced to join by Ram, had sold some firewood to obtain the 200 rupees (USD 3) needed to buy rice and vegetables for the hunt. The gang had some cooking pots, homemade bullets and an axe. Their home-made gun was already hidden inside the park. They were arrested while attempting to enter the park in December 2005.

Poaching gangs usually have one or two guns, almost all home made, as they do not like modern weapons and are unfamiliar with them. They usually enter the park in the evening, intending to stay for several days looking for rhinos. They hunt mostly in the late afternoons then hide during the night to avoid capture by patrols.

When they kill a rhino, the poachers' primary objective is to take the horn, but sometimes they are disturbed or lose the animal. In 2003, of the 19 rhinos poached, 16 had their horns removed and 3 their hooves. In 2004 all 9 had their horns taken, and 2 had hooves missing. In 2005, 12 of the 15 rhinos poached had their horns taken and one had its tail cut off (DNPWC, unpublished statistics).

The shooter, who is usually the gang leader, obtains around 20,000 rupees (USD 277), and each of the other members 10,000 to 15,000 rupees for an average horn weighing around 700 g. When we interviewed Krishna, he said in 2002 he received 22,000 rupees (USD 287) while the others in the gang got 10,000 rupees (USD 130) each for a horn. In 2003, when Krishna was just a gang member, he was paid 10,000 rupees (USD 128)



for a horn. In mid-2004 Ram received the same. In 2005 Surya was promised 10,000-20,000 rupees (USD 138-277) if the gang succeeded.

The poachers sell their rhino horns to middlemen in towns such as Narayanghat (where Krishna sold his horns), Pokhara and Hetuada. The horns usually end up with wealthy traders in Kathmandu. One of these traders, Pemba Lama, was arrested in the Chitwan Valley in June 2005 and was in prison awaiting trial during our visit. He gave useful information to the authorities. He is a Nepalese citizen of Tibetan origin and had been buying rhino horns since about 1998. The Department of National Parks and Wildlife Conservation staff think he has sold about 50 horns, but he admitted to only 20. Most of these came from Chitwan Valley, but also some from Bardia Park, and one or two from India (Kamal Kunwar, Assistant Warden, Co-ordinator for Anti-Poaching, Chitwan Park, pers. comm. January 2006). Lama also traded in medicinal plants and had made a lot of money. By the time he was 40 in 2005 he had accumulated at least one large house in Kathmandu, other properties and several cars. In June 2005 he went to Nawalparasi District (as he had done before, along with visits to Narayanghat) to buy horn from one of his middlemen. Park officials arrested him carrying a horn. He was about to give a middleman 446,000 rupees (USD 6169) for another horn weighing 700 g. Lama told the officials he usually bought horns for the equivalent of USD 4250 to USD 5700. He sold them to Tibetans in Kathmandu, who sent them to Tibet (Anon. 2005; Thapaliya 2005; Yonzon 2005; Kunwar, pers. comm. December 2005; Shiva Raj Bhatta, Chief Warden, Chitwan Park, pers. comm. January 2006).

### **Why did poaching decline in 2003 and 2004?**

In early 2003, to combat the escalating rhino poaching the parks department introduced new anti-poaching measures. The main ones were: 1) so-called sweeping operations, with large groups of park and Army personnel intensively patrolling; 2) greater incentives for patrollers; 3) joint patrols of Army and park staff together; 4) Army and park staff being authorized to make arrests outside the park; and 5) more efficient use of informers and more reward money (Martin 2004). Rhino poaching declined as a result, but not enough; thus further measures had to be taken in 2004 and 2005.

Most significantly, the park increased the number of its informers from 7 in 2003 to 20 by 2005, and helped them improve their ways of collecting information on potential rhino poachers and traders. The performance of the informers steadily improved. In 2002 they were terrified of the Maoists, but with reassurance from the park staff they overcame their fear and have done a better job (Bhatta, pers. comm. December 2005). Three NGOs (International Trust for Nature Conservation, King Mahendra Trust for Nature Conservation and WWF-Nepal) provided 61,000 rupees (USD 783) each month in 2003 for the informers and raised this to 81,000 rupees (USD 1120) by 2005. The



Army also provided some money for its own informers. An intelligence-gathering system is recognized as the most effective anti-poaching measure, and its cost is extremely low, less than 1% of the total park and Army budgets for Chitwan Park.

As a result of the expanded and improved intelligence system, various government authorities caught more poachers in Chitwan Valley, which was the main reason why the number of rhinos illegally killed fell. From 2002 to 2003 authorities arrested 26 rhino poachers (Martin 2004). From July to December 2004 they caught 16 rhino poachers (Kunwar, pers. comm. December 2005). From January to November 2005 authorities arrested 46 rhino poachers, middlemen and traders. In addition, during 2005, 11 tiger and leopard poachers and skin traders, 16 timber smugglers, and 106 others dealing in illegal firewood and other products were arrested (Manandhar and Subba 2004; Thapaliya 2005). With the help of informers the Army arrested two traders and confiscated four rhino horns in Chitwan Valley, bringing the traders and the horns to the Kathmandu District Forest Office (Kamal Shrestha, District Forest Officer Kathmandu, pers. comm. December 2005).

The Army changed its strategy to allow the men stationed in the parks to go on patrol to more of the surrounding areas rather than keeping so many men on post. This made it more difficult for the poachers to evade the soldiers (Lt. Col. Ajit Thapa, Battalion Commander, Chitwan Park, pers. comm. January 2006).

### **Why was there a rise in poaching in 2005 compared with the year before?**

The new anti-poaching efforts worked especially well in late 2003 and 2004. However, according to Bhatta, there was a gradual breakdown in communications from mid-2004 onwards. There was a drop in the morale of park staff when five staff from the adjacent

Parsa Wildlife Reserve were killed in a mine blast laid by Maoists. One of only four vehicles used for patrolling Chitwan was destroyed in this attack, reducing staff mobility (Bhatta, pers. comm. January 2006). Another park vehicle in Royal Suklaphanta Wildlife Reserve (in western Nepal) with 3 park staff and 10 illegal timber traders was also blown up in a Maoist mine blast (Tirtha Maskey, director general until January 2006 of DNPWC, pers. comm. August 2006).



Park staff caught these poachers on their way to hunt rhino in Chitwan National Park in December, 2005.



Narayan Poudel, the deputy director general of DNPWC based in Kathmandu, further believed that the poachers found gaps in Chitwan Park's anti-poaching strategy and that the staff had become somewhat inactive and complacent (pers. comm. January 2006). Kunwar agreed with this remark, adding that park staff became overconfident in early 2005 because they had been so successful in reducing rhino poaching in 2004 (pers. comm. January 2006).

### **Chitwan's buffer zone and its role in rhino conservation - a double edged sword**

Many of the 250,000 people living in the 750 km<sup>2</sup> Chitwan Park's buffer zone are still extremely poor and have started to complain vociferously that rhinos cause destruction and that they are not receiving enough compensation or adequate benefits. Some are so disillusioned they are even assisting rhino poachers.

The buffer zone concept was promulgated for Nepal's protected areas in 1993 by an amendment to the National Parks and Wildlife Conservation Act of 1973 to help make the local community rely on buffer zone products rather than park resources and to win their support for conservation. The buffer zones were to be mostly funded by 30-50% of the revenue raised by each park. For Chitwan Park, the buffer zone was created in 1996, and following discussions with the Buffer Zone Management Committee, 50% of the park's revenue was to go to the local communities (Upadhyay c. 2002; Manandhar and Subba 2004). From 1999 to 2004 the park provided to the Buffer Zone Management Committee approximately USD 2,200,000, but it has spent only about half, holding on to the rest for projects not yet started (Adhikari et al. 2005). The buffer zone has also received relatively large sums of money from the United Nations (under the Participating Conservation Programme of the United Nations Development Programme), the King Mahendra Trust for Nature Conservation, WWF-Nepal and other NGOs.

The money is earmarked to help communities living in the buffer zone develop projects to improve their livelihoods, but unfortunately not enough is actually provided, leading to some disillusioned locals. Locals are also asked not to permit rhino poachers to pass through to the park nor assist them. It is in the local people's interest to keep poachers out of the park, especially rhino poachers: if the park's large animals are killed, fewer tourists will come - a disaster for local people, who get half the park's revenue, almost all based on tourism. Unfortunately, many local people do not understand this link, partly as they are not getting enough of the funds (Maskey, pers. comm. August 2006). Park staff and local leaders have all agreed that this is a problem. For example, Ganga Thapa, Executive Officer, King Mahendra Trust for Nature Conservation, said that not enough emphasis goes into educating local people about the benefits they can accrue



by protecting the park. Chandra Gurung, Country Representative of WWF Nepal Program, concurs, 'We have a good policy of buffer zones, but we have had difficulties in convincing the buffer zone communities how important conservation is to them' (pers. comm. January 2006). Kunwar laments that the buffer zone people are indifferent about helping him in his anti-poaching strategy and rarely give him information on potential poachers (pers. comm. January 2006). Ashok Bhandari, the ranger for the eastern part of Chitwan Park, admits that his staff have been unable to convince many local people that they benefit by protecting the biodiversity of the park.

There are several further explanations why people are not interested in conservation: 1) The Buffer Zone Management Committee receives half the annual park revenue whether or not the people protect the park from poachers, so local people have little incentive to stop poachers. 2) The amount of money given to the buffer zone has declined as Chitwan Park's revenue has fallen. Revenue decreased by 63% from 2000/01 to 2004/05 in US dollars equivalent excluding any inflation factor (see table 2). This was mostly due to the collapse in tourism from 117,512 visitors in 1999/2000 (the highest recorded) to only 42,654 in 2004/05, a 64% reduction (statistics from Royal Chitwan National Park, unpublished). The reason for this is the Maoist insurgency, not a lack of biodiversity nor because of rhino and tiger poaching. It is in the interest of the local people to protect the wildlife and to keep the habitat intact so that tourists will return when the country becomes stable. But waiting in anticipation of a future benefit is difficult for poor and hungry people. Researchers Mark Murphy, Krishna Oli and Steve Gorzula have written, 'The primary problem with the buffer zone system in Nepal is that it has not lived up to... expectations. The benefits have been limited, and therefore the expected behaviour change which would reduce pressure and enhance the conservation of biological diversity has not happened as envisioned (Murphy et al. 2005).

**Table 2: Revenue earned by Royal Chitwan National Park, 2000/01 to 2004/05**

Year	Nepalese rupees	US dollars
2000/01	74,302,801	1,041,385
2001/02	38,887,119	517,116
2002/03	30,831,199	398,885
2003/04	40,060,770	528,158
2004/05	28,137,909	385,187

*Sources: Manandhar and Subba 2004; Department of National Parks and Wildlife Conservation Headquarters, Kathmandu, unpublished*

There is also a problem as to how the Buffer Zone Management Committee and the user committees decide who receives the money from the park. Mainly two sorts of people



live in the buffer zone: so-called non-farmers who are mostly landless and marginalized peoples, and farmers who are not so poor and have some land. There are also some professional workers, such as teachers and nurses, but they are a small minority. The first group consists of Chepangs, Bote and Majhi peoples. According to 444 interviews carried out in late 2003 and early 2004 by Adhikari et al. (2005), these people belong to the lower castes of Hindu society, 86% to the Baisya caste. In Adhikari's survey, not one landless family belonged to the upper castes, the Brahmins and Chhetris. On average, the unemployed non-farmers had only 1.7 years of formal education compared with 4.4 years for the farmers. The marginalized people formerly lived along the rivers and in the forests, and were hunter-gatherers. When the park was created in 1973 they were only allowed to fish using traditional cast nets and to collect thatch grass only once a year in the park. Now they are very poor, and they have few alternative sources of income, so they are tempted to poach in the park's forests. As their resentment builds, these people are becoming more sympathetic to the goals of the Maoists (Adhikari et al. 2005; Chitwan Park staff, pers. comm. January 2006).

Several people said the Buffer Zone Management Committee and the many user committees are run by the higher castes. They ensure that they receive a higher proportion of the resources than the poorest of the poor, who do not receive a fair sum. Consequently, many of the very poor remain without jobs and education.

Poudel also believes that the poorest people in the buffer zone do not receive a fair share of the park's money, and more poverty alleviation projects are needed. The Adhikari report of 2005 concluded 'the community development programmes do not reach the poor and marginalized communities at individual household levels... Local people, particularly poor and indigenous communities, do not have access to decision-making for benefit sharing'.

Adhikari's survey showed that the farmers can be divided into three economic groups: poor, moderate, higher income. The poor farmers are mostly from the lower castes (53% from the Baisya group), while the higher income families are from the higher castes. His survey also showed that the damage to crops by rhinos amounted to 3320 rupees (USD 42) per family each year for both the moderate and the higher income families. 'They have to put up with the loss and spend money erecting barriers as a deterrent. The government does not have a formal scheme to pay compensation for damage to crops or buildings. The government pays automatically only for human deaths caused by wild animals, and that is just 25,000 rupees (USD 352) per fatality. From 2001 to 2005 rhinos killed 16 people in Chitwan Valley, 5 in 2005 alone. Damage to crops and houses and frequent casualties have antagonized the farmers, some of whom get annoyed and turn to assisting rhino poachers.





A tiger mauled this three-month-old rhino, and the Chitwan National Park staff rescued it and successfully treated its wounds.

All these issues need to be resolved to improve the attitudes of the people in the buffer zone. In addition, some of the money from park revenue that is allocated to the buffer zone should be spent on employing local people full-time to patrol it especially along the park boundary. This has been done successfully by communities living around West Bengal's Gorumara National Park where rhinos are flourishing (Martin 2006) and in some of the buffer zone areas in Nepal's Bardia National Park. The Buffer Zone Management Committee should set up in cooperation with park management an intelligence network of paid informers and should offer reward money.

## **Royal Bardia National Park**

### **Rhino poaching and trade in horn from 2003 to 2005**

Maoists living inside the park have prevented a rhino census since 2000. Between 1986 and 2003 park staff, with the assistance of WWF-Nepal and the King Mahendra Trust for Nature Conservation, translocated 83 rhinos from Chitwan to Bardia; but most people believe, despite breeding, that the number in the park is now much less than this.



The two main locations for rhinos in the park are the Karnali Flood Plain in the west and the Babai Valley in the south-east. The floodplain population estimate is 30 to 33 plus 7 that have moved outside the park. The number of rhinos in the Babai Valley is unknown as the Maoist presence deters the Army, park staff and tourists from going there. Puran Shrestha, the chief park warden, hopes there may be as many as 37 to 47 (pers. comm. January 2006). Others, including Poudel, believe the number is much lower. WWF-Nepal staff counted 15 rhinos in 2004 but they could not finish their survey because Maoists stopped them and took their equipment (Anil Manandhar, WWF Nepal Program, pers. comm. January 2006).

The year 2003 was the worst for rhino poaching in Bardia Park. Poachers killed at least nine rhinos, all in the Babai Valley. Six of these are known to have been shot. The poachers took all the horns and removed hooves from four of them. One carcass had some of the skin missing and from another the head had been taken.

In 2004 poachers are known to have killed two rhinos by poisoning in the Babai Valley. One had its horn and hooves removed but the other did not. Information from the Babai Valley is sparse, but so far as is known, no rhinos were poached in 2005 (see table 3) (DNPWC unpublished).

**Table 3 : Known rhino poaching and total mortality from all causes in and around Royal Bardia National Park, 2001-2005**

Year	Number known poached	Total deaths from all causes
2001	0	0
2002	3	5
2003	9	10
2004	2	3
2005 (to mid-Dec)	0	--

*Source: Department of National Parks and Wildlife Conservation Headquarters, Kathmandu, unpublished*

The poachers come from beyond the park buffer zone. Most are from the Taratal area near the Indian border or from the Surkhet area north of the park. Taratel poachers are familiar with the Babai Valley as their families lived there before the government moved them out in the early 1980s (DNPWC 2001). They use mostly home-made rifles and bullets to kill the rhinos. A gang of three or four rhino poachers in 2003 received between 40,000 and 50,000 rupees (USD 513-642) for a rhino horn from traders who live just outside the buffer zone, according to Ramesh Thapa (pers. comm. December 2005), a ranger who has worked in Bardia Park since 1990 and who has interrogated



many poachers. The traders sell it for 100,000 to 200,000 rupees (USD 1284-2567) to other traders in Nepalgunj and Pokhara who come from the hilly areas of the country, especially from the Humla District near Tibet. They also buy other wildlife products, such as tiger bones and skins, and arrange for the wildlife products to get to Kathmandu for export to Tibet.

### **Reasons for the presumed decline in rhino poaching in Bardia Park 2004 and 2005**

The main reason for the improved protection of Bardia's rhinos was that the Army reoccupied a seventh post in 2004, providing more security in the park (Lt. Col. Ashok Sigdel, Battalion Commander, Bardia Park, pers. comm. December 2005). Patrolling also expanded in the buffer zone, an area of 328 km<sup>2</sup> where about 130,000 people live. In 2004 the Buffer Zone User Groups set up some anti-poaching teams organized by the Terai Arc Landscape Program of WWF-Nepal. Each consists of three or four people from the buffer zone and concentrates on patrolling the park and buffer zone boundaries, often with District Forest Office staff (Bidya Shrestha, Business Development Officer, Terai Arc Landscape Program of WWF-Nepal, Thakurdwara, Bardia Park; Sigdel and P. Shrestha, pers. comm. December 2005). In addition, about 30 members of the Nature Guide Association of Nepal patrol the park boundaries, especially along the rivers (Thapa and Naresh Subedi, the King Mahendra Trust for Nature Conservation Bardia Conservation Programme, pers. comm. December 2005).

In 2004 the Buffer Zone User Groups set up committees to gather information on poaching and trading wildlife products, and by the end of 2005 there were 15 such committees consisting of students, teachers, social workers and others. They collect important information to give to the park staff and Army. This has helped scare away potential rhino poachers (Thapa and P. Shrestha, pers. comm. December 2005).

Bardia Park has its own information system for which three informers receive a monthly stipend of 2000 rupees (USD 28) from the Terai Arc Landscape Program of WWF-Nepal. The park also has reward money supplied by the government; in 2004, 50,000 rupees (USD 678) were paid to 15 people who supplied information on rhino poachers. Information gathering in Bardia became more efficient in 2004 and 2005. As a result, in 2004/05 park staff were involved in the arrest of, among others, 38 animal poachers, 61 illegal grass cutters, 104 firewood collectors, 78 woodcutters, and 46 people illegally collecting plants (Bardia Park, unpublished statistics).

In October 2005, rhino poachers were discouraged even further from entering Bardia when the Army increased its strength from around 500 to 870 men, from 4 to 6 companies. By December 2005 they had reoccupied 2 more of the original 14 posts,



Bhurigaun and Ramuwapur, both on the edge of the Babai Valley, making a total of 9 Army posts scattered through the park (Sigdel, pers. comm. December 2005).

### Drop in Bardia Park revenue

In 2000/01, revenue earned by Bardia Park declined with the fall in tourism. As in Chitwan, the buffer zone receives half this revenue so the fall in tourism has had an adverse effect on communities living around the park. From 2000/01 to 2003/04 park revenue declined by 64.5% in US dollars (see table 4). From 2000/01 to 2004/05 the number of tourists dropped from 9940 (6715 foreigners, who pay the highest fees) to 1173 (661 foreigners), over a 90% decline in foreigners (Bardia Park, unpublished statistics). In December 2005 we surveyed 20 tourist lodges and tented camps around Bardia, of which 8 were closed due to the shortage of tourists. For the 210 beds available on one day there were only 18 guests. In 2000 these camps and lodges employed 300 staff, but had only 75 at the end of 2005. The Maoist rebellion is responsible for the decline in tourism. Most people drive to Bardia, but there are so many roadblocks that it takes at least 2 days to get from Kathmandu to the park, a distance of 600 km. This journey takes even longer when the Maoists declare a strike, preventing the movement of cars, buses and trucks on the highway. Negative reports in the media and travel agents (who advise the few tourists who are planning visits to Nepal to go to Chitwan instead of Bardia) have practically ruined tourism in this park.

Because rhinos do not cause much damage outside the park there is very little animosity towards them. In 2004/05, for example, only one house was reported damaged by a rhino, and park staff paid 1000 rupees (USD 14) for this damage. Only three people were reported injured by rhinos and they received in total 13,500 rupees (USD 185); there were no deaths (unpublished statistics, Bardia Park). As such incidents have been few and people are compensated, they are less likely to collude with rhino poachers. This has allowed the rhinos we know of, especially in the Karnali Flood Plain near the park boundary, to remain relatively safe.

Table 4: Revenue earned by Royal Bardia National Park, 2000/01 to 2003/04

Year	Nepalese rupees	US dollars
2000/01	9,821,784	137,656
2001/02	4,376,583	58,199
2002/03	2,777,655	35,933
2003/04	3,710,146	48,914

Source: Manandhar and Subba 2004



## Chitwan and Bardia Park budgets and workforce

All parks in Nepal get a regular subvention for their development and management. The parks also earn revenue, nearly all from tourism, half going to the government and half to the buffer zone committees. The total budget allocations and Army funds given to Chitwan and Bardia Parks are high compared with most other protected areas with rhinos in Asia. It is not possible to obtain a precise figure for each park because the Army budgets are classified. We can, however, estimate them. We can calculate an average cost of each park employee by dividing the budget of the park (including the main NGO contributions to the buffer zone and intelligence fund) by the number of park employees. We multiply this figure by the number of park employees and Army personnel stationed in the park to estimate the complete budget for the park.

In 2004/05 the complete budget for Chitwan Park (park plus Army), including some money for the buffer zone, was approximately 120,000,000 rupees (USD 1,650,000). If this amount is divided by the 932-km<sup>2</sup> size of the park, the result is USD 1760/km<sup>2</sup>. If we consider only the government money and exclude the NGO contribution, the figure is not much less - USD 160/km<sup>2</sup>. The 2004/05 complete budget (park plus Army) for the 968-km<sup>2</sup> Bardia Park, including funds from Care International (SAGUN money)



This "rhino horn" next to the mounted tiger skin in the District Forest Office in Kathmandu was obviously a fake; the staff had cut into it to confirm that it was made entirely of wood and painted black.



and intelligence money, was 117,000,000 rupees (USD 1,600,000). As before, this is USD 1660/km<sup>2</sup>, reduced by USD 120/km<sup>2</sup> if NGO funds are ignored.

Besides the high budgets for these two parks, there are many employees: over one man per km<sup>2</sup>. Chitwan Park has about 1105 full-time staff, including Army personnel, and there are 997 people in Bardia, also including the Army. Almost all are involved in patrolling at some time. This is one of the highest ratios in the world of people per square kilometre for government-managed large wildlife areas.

## Recommendations

The budgets and the number of people working in Chitwan and Bardia Parks are sufficient to reduce rhino poaching if certain changes are made.

- \* The Army must spread out and reoccupy more of their old posts.
- \* The Army and the parks must improve all aspects of their anti-poaching patrols. Recent studies in Chitwan Park have concluded that anti-poaching strategies are crucial for the protection of the rhino (Poudyal et al. 2005; Poudyal and Knowler 2005; Knowler and Poudyal 2005). Simulation models by Knowler and Poudyal (2005) "indicate that... a conventional conservation strategy, emphasizing the role of anti-poaching units (APUs), is likely to increase the rhino population to a greater extent than the other strategies . . .".
- \* NGOs, the parks and Army must provide more money and workforce for the intelligence-gathering networks.
- \* Strategies against poachers must be continually updated so that the poachers do not get familiar with the tactics employed. Army officers in the parks said that being one step ahead of the poachers and being able to surprise them, and intelligence networks, are the main aids to defeating poachers.
- \* The Buffer Zone Management Committees need to spend more money on conservation issues.
- \* The Buffer Zone Management Committees need to spend more money on teaching local people the advantages to them of conserving rhinos because they receive half the parks' revenues.
- \* The Buffer Zone Management Committees must allocate more of their funds to the poorest people.
- \* Since crop damage causes the most antagonism, the Buffer Zone Management Committees should consider paying compensation for crop loss around Chitwan.



Strong anti-poaching strategies within Chitwan and Bardia Parks, based on patrolling and intelligence networks, combined with support from the communities living around the parks, will ensure successful rhino conservation in Nepal.

## Acknowledgements

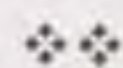
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# 18 Recent political disturbances in Nepal threaten rhinos: lessons to be learned

(*Pachyderm*, June 2008–July 2009)

EBM, Chryssee Martin and Lucy Vigne

## Abstract

*This article describes rhino poaching in Nepal during the Maoist insurgency and the social unrest that took place from 2000 to late 2007, with special emphasis on the latter two years. There are three areas in Nepal with rhinos: Chitwan and Bardia National Parks and Suklaphanta Wildlife Reserve. In 2006 there were at least 21 rhinos poached in Nepal, a continuing trend of serious poaching since 2001. In 2007, poaching fell; officials recorded only five rhinos known to have been poached, although in reality the figure was higher. That year the country returned to relative peace and many of the guard posts were re-instated. New approaches to rhino conservation in Nepal are needed now, including those that have proved to be successful elsewhere in Asia and Africa, in order to better safeguard Nepal's rhinos once more. The rhinos are particularly vulnerable when they wander outside the protected areas. Recommendations are given, such as consideration for some rhinos to be managed in temporary sanctuaries, both governmental and private. The recent political unrest has been a warning that in such conditions a country can be de-stabilized very quickly with government and Army attention shifted away from wildlife conservation. Rhinos in these circumstances are easy targets to poachers. Thus, more involvement of the private sector in rhino protection is vital.*

## Introduction

Since 2000 Nepal's rhino population has declined more severely due to poaching than that of any other Asian country. In the previous decade, the rhinos were relatively secure (Martin 2001; Adhikari 2002; Martin 2004; Shakya and Chitrakar 2006; Martin 2006). From 2000 to the end of 2007 (when field research for this paper was concluded), the rhino population in Nepal fell from 612 to an estimated 444, a reduction of almost 30%. Most were poached for their horns. Bardia National Park (NP) suffered the most, losing



more than half its rhino population to poachers. In 2006 there was also significant rhino poaching in and around Chitwan NP. The main reason for this catastrophe, after years of successful rhino conservation, was the serious political disturbance in the country, mostly as a result of the Maoist rebellion. The political instability greatly affected the country with perhaps 1,500 people killed in 2005 (Parwez 2006). The economy was severely damaged with gross domestic product growth at constant prices declining from 4.7% in 2004 to 2.8% in 2006 (Asian Development Bank 2007). After the Maoist peace accord in November 2006, poaching fell in 2007 (see Table 1). Lessons must be learned from these disturbances over the last few years in order to avoid future flare-ups in rhino poaching when law and order breaks down.

This article will look at poaching problems in Chitwan NP in 2006 and in 2007, Chitwan's budget in the fiscal year from mid-2006 to mid-2007, its most recent anti-poaching strategies, rhino horn stockpiles as well as the recent poaching problems facing Bardia NP and Suklaphanta Wildlife Reserve (WR), where four rhinos were re-introduced in 2000. It will then consider which policies for rhino conservation would be the most effective in Nepal.

## Methods

The Martins carried out fieldwork in Nepal in December 2007 visiting the three protected areas with rhinos and meeting officials in Kathmandu. Specifically, they interviewed staff of the Department of National Parks and Wildlife Conservation (DNPWC), officers of the Nepali Army based in the Parks, Forest Department staff and NGO personnel. The NGOs included: International Union for the Conservation of Nature (IUCN), International Trust for Nature Conservation (ITNC), National Trust for Nature Conservation (NTNC), World Wide Fund for Nature (WWF), Wildlife Watch Group (WWG), and, later in UK, the Zoological Society of London (ZSL). They also met an officer of the Buffer Management Committee in Bardia NP, spoke to staff at some of the park tourist outlets, met Nepali journalists and talked to independent conservationists. Esmond Martin studied unpublished reports produced by the DNPWC. He obtained details about the Army budget for Chitwan NP (the first published since 1995). He also collated DNPWC rhino horn stockpile figures. He collected papers on the ethnicity and castes of the Nepalese from the Asian Development Bank in Kathmandu to better understand the hierarchies amongst these groups in the buffer zones. All interviewees were helpful and willing to share information in order to reduce threats to Nepal's rhino conservation.



## Results

Table 1: Official numbers of rhinos known to be poached in and around Chitwan and Bardia National Parks, 2001–2007

Year	Chitwan NP	Bardia NP
2001	15	0
2002	38	3
2003	22	9
2004	11	2
2005	15	0
2006	19	2
2007	1	3
Totals	121	19*

*\*This figure is an underestimate as in reality well over 60 rhinos were poached (but not found due to lack of patrols in the key area) in this period. NB: Official numbers of poached rhinos are generally underestimates.*

*Sources: Martin 2006; DNPWC Headquarters; Chitwan and Bardia NPs unpublished.*

### Chitwan National Park, 2006

According to a census in 2000, there were an estimated 544 rhinos in and around Chitwan NP. The Park, an area of 932 km<sup>2</sup>, consists of floodplain grassland, riverine forest and sal forest in the Terai (a belt below the Himalayan foothills). From 2001 to 2005 at least 101 rhinos were poached in and around Chitwan NP (Martin 2006). Poaching continued at a high level in 2006 with a minimum of 19 rhinos killed out of a population of around 400. Of these, nine were poached within the Park, mostly near the northern boundary. The remaining 10 were poached north of the Park in the community forests, especially in Panchakanya, Chaturmukhi, Chitrasen and Bhimbali. This shows that the likelihood of rhinos being poached outside the Park is much greater than inside. There are at least 40 rhinos that graze outside and these have a high chance of being poached. Anti-poaching efforts are simply not adequate to protect the rhinos outside the Park.

Poachers shot dead 16 of the 19 rhinos in 2006 and three were electrocuted. Horns were taken from 14; officials found three carcasses intact and two were unrecognizable. Poaching methods and money paid to the poaching gangs in 2006 were similar to those of 2004 and 2005 (Martin 2006). Traders transported the 14 horns (and no doubt a few more from carcasses that were not found by officials) to the larger towns in the area, such as Bharatpur and Narayanghat. From there middlemen brought them to Kathmandu for export.





Rhinos in Nepal prefer the wet areas with long grass compared to the forests.

An Army battalion has been based inside the Park for some years, mainly to protect rhinos and other endangered species. There were 32 manned Army posts in 2001 but by 2006 the battalion occupied only seven of these, one fewer than the previous year. This was because the Army did not have sufficient manpower to protect itself in case of a Maoist attack (Anil Manandhar, WWF Nepal, and Prabhu Budhathoki, IUCN, pers. comm. December 2007). The soldiers in the Park patrolled less, largely because they were in fewer posts (Budhathoki, pers. comm. December 2007). The Park's department staff also consolidated into fewer posts; they do not carry firearms, relying on the Army for these. Thus the effect was devastating for the rhinos; poachers found it easy to cross the northern boundary into the Park unspotted by the Army and Park staff to shoot rhinos. They also killed rhinos outside the Park in the community forests—where the rhinos commonly wander.

The government and NGOs reduced funding for 'special patrolling' and 'sweeping operations' (this is when the Park staff and Army carry out an anti-poaching sweep through areas of the Park). Less than a million rupees (USD 13,644) were spent for this and for NGO-funded intelligence for 2006. This was inadequate (Ana Nath Baral, Assistant Warden, Chitwan NP, pers. comm. 2007).

Another reason for the high poaching in 2006 was that the morale of the Park staff had ebbed to a new low (Mishra 2008) due to an incident affecting three senior and



experienced staff members. In May 2006 a poacher in the Park's custody had to be taken to hospital where he soon died. Local people went to the authorities saying he had been severely tortured. Consequently, the Police arrested the Chief Park Warden (Tika Ram Adhikari), the Assistant Warden (Kamal Kunwar) and a ranger (Ritesh Basnet). Mr. Adhikari was released on bail but the others were jailed for 266 days each (Kamal Kunwar, pers. comm. 2007). Not only were the Park staff demoralized by this, but also some NGOs stopped providing support for intelligence. Furthermore, the communities felt unable to trust the officials. Poachers and traders naturally took advantage of this episode of mistrust.

The central government aggravated the situation when the Cabinet released 13 poachers in August 2006 and two more the following month (Anon.2007a). Chief park wardens had also been handing out lenient sentences to rhino horn poachers and traders. For example, the new Chief Park Warden for Chitwan issued a light sentence to one of the biggest rhino horn traders ever caught; he pronounced a five-year prison sentence—instead of the maximum 15 years—and a fine of 100,000 Nepali rupees (USD 1400) to the notorious Pemba Lama who admitted to selling 20 rhino horns (Martin 2006). This again sent an encouraging message to other poachers and traders.

There were, however, two helpful incidents that year. The first concerned Kathmandu's District Forest Officer who made two arrests of three men with three horns, probably from Chitwan NP; this was in contrast to 2004 and 2005 when his office had confiscated no horns (Braj K. Yadav, DFO, Kathmandu, pers. comm. December 2007). The second incident regarded assistance offered from India to Nepal to stop an important poacher. An employee of Chitwan NP had become a rhino poacher several years earlier, chasing and spearing several rhinos using Park elephants. He was finally arrested in 2002 for killing rhinos and sentenced to 15 years in prison. Unfortunately, he escaped and fled to India where authorities believe he collaborated with the infamous Indian trader, Samsar Chand. In 2006 the Indian police arrested the Nepali poacher in India and seized a gun from him. A senior DNPWC officer went to India to bring him back to serve out his sentence (K. Kunwar, pers. comm. December 2007 and DNPWC December 2006).

### **Chitwan National Park, 2007**

The incidence of rhino poaching dropped in 2007. Officials know of only one rhino, a female, which was poached in that year. It was shot in June 2007 by a gang of five Nepalese, some of who escaped to India while one was caught. The poachers took the horn, but not the nails (K. Kunwar, pers. comm. December 2007). The poachers may have killed a few more; for example, Park authorities found a carcass during their rhino census in March 2008.



The most important reasons for the reduction in rhino poaching in 2007 was that law and order started to improve after 24 April 2006 when the King relinquished his power and Parliament was re-instated. On 27 April 2006 the Maoists announced a unilateral three-month truce, and in November 2006 the Prime Minister signed a peace agreement with the Maoists that essentially ended the war.

With improved security in Nepal, the Army was able to re-establish 15 more posts in Chitwan NP making a total of 22 posts by mid-2007. The Army, feeling less threatened by the Maoists, started to patrol in larger areas of the Park and conduct more surveillance at night. The Park staff felt more confident with the expanded presence of the Army so they too patrolled more, no longer fearing ambushes, as did the district forest officers surrounding the Park. Thus, although patrol work was still not enough, the situation improved in 2007. Some volunteer youth groups became more involved in anti-poaching activities outside the Park (Purna Bahadur Kunwar, Terai Arc Landscape Programme, WWF, pers. comm. December 2007). Villagers became less fearful regarding Maoist and government violence and felt confident to offer more information to the Parks Department about potential poachers and traders. The informant network thus became active once again and NGOs provided more funds (K. Kunwar, pers. comm. December 2007). The Forest and Parks departments also mended some of their fixed-line and mobile telephone infrastructure. Thanks to better patrolling, intelligence and communications, arrests went up. In 2005/06 there had been 48 arrests of wildlife poachers with 36 jailed whereas in 2006/7 there were 66 arrests and 36 jailed. More were arrested and jailed later in 2007 (unpublished statistics, Chitwan NP).

As a result of the heavy poaching that had occurred in 2006, civil society became more vocal, especially in 2007, in support of Nepal's parks. First, in December 2006 students of Eco-Clubs handed a petition to the Minister of Forests and Soil Conservation (in charge of DNPWC); it was signed by more than 100,000 people and requested that the government be more active in wildlife conservation (Manandhar, pers. comm. December 2007). Second, in early 2007, other civil society groups such as political parties, the local Chitwan Hotel Association and people from the buffer zone councils applied pressure on the government to eliminate the charges brought against Tika Ram Adhikari, Kamal Kunwar and Ritesh Basnet, as they had a proven track record for wildlife conservation (Anon.2007b) and were desperately needed back in the Parks Department. Third, the local media and NGOs, such as IUCN, NTNC and ZSL, complained about the lenient sentences that some chief park wardens had been handing out; for example, they heavily criticized the Chief Park Warden's action of giving the infamous trader, Mr Lama, such a light sentence (Anon.2007c). They also publicized in the press and in newsletters the urgency to stop rhino poaching in Nepal.





The base of this rhino horn looks authentic, but the horn is made of wood and painted black to deceive potential customers.

The government finally responded by recommending that the sentences for rhino poachers and middlemen dealing illegally in horns should, in most cases, be increased and that higher priority should be put on rhino conservation. The government allocated a special budget of USD 57,423 for the Army and Parks Department posts within the Park (unpublished statistic from Chitwan NP). The government withdrew the case against Mr. Adhikari and his two colleagues in March 2007, which improved the morale of the Chitwan NP staff and increased their confidence to pursue poachers. The government put greater effort into catching and prosecuting smugglers and traders in Kathmandu, the main entrepôt for rhino horn in Nepal. Government officials arrested a former well-known Nepalese pilot and his four accomplices in Kathmandu in March 2007. He had illegally been buying bullets from a Nepali soldier and was caught with a rhino horn in his house. The pilot reputedly had been negotiating to sell horns from Chitwan to an ethnic Tibetan (the main rhino horn exporters) living in Kathmandu.

In 2007 relative stability brought an increase in the number of tourists and revenue into Chitwan NP. Tourist numbers rose from 54,395 in 2005/6 to 79,086 the following year, more specifically, from 35,838 foreigners, 14,977 Nepalese and 3,580 from South Asian countries (SAARC) up to 48,921 foreigners, 24,690 Nepalese and 5,475 from SAARC. Revenue rose from 38,025,696 Nepali rupees (USD 521,000) to 40,952,072 Nepali rupees (USD 573,500). Park entry fees in the fiscal year 2006-7 comprised 72%



of the total Park revenue, followed by hotel royalties (15%), boat tenders (2%), sand and gravel charges (2%) and miscellaneous (9%) (unpublished statistics, Chitwan NP). According to government regulations, the buffer zone receives half the Park's revenue. Thus, in 2007, the local communities in the buffer zone received more funds, adding to their willingness to help in protecting rhinos, mainly by patrolling their forests (P. Kunwar and K. Kunwar, pers. comm. December 2007).

### **Chitwan National Park's budget for 2006/7**

Chitwan NP receives government funding from two sources: the DNPWC and the Army. The Park budget comes from the headquarters in Kathmandu. This does not include Park revenue (of which 50% goes to the central treasury and 50% is channelled back to buffer zone management). For 2006-7 the DNPWC allocated 36,129,872 Nepali rupees (USD 506,021) to Chitwan NP. Of this, USD 253,332 was for the 'official budget', which mostly went to salaries for the 273 employees (144 Park staff and 129 elephant staff who look after the 53 domesticated elephants). Another USD 178,459 went to the 'Elephant Breeding Centre'. A further USD 16,807 was for the 'programme budget', i.e. fire management, waterholes, bridges and house maintenance. The final allocation, USD 57,423, went to 'new post construction' (unpublished statistics, Chitwan NP). The Army budget covers the cost of running one battalion of about 800 men within Chitwan NP. It remained stable from 2006/7 to 2007/08. The annual budget was approximately 72,113,000 Nepali rupees (USD 1,009,986). The largest sum by far (76%) went to salaries (USD 770,308), followed by food (USD 175,070), allowances (USD 49,020) and miscellaneous (USD 15,588). From this budget only USD 2801 was allocated to fuel and USD 700 for all maintenance, but this is insufficient for adequate anti-poaching activities in the Park.

The Park also received funds from non-government sources. It received USD 49,650 from the Terai Arc Landscape Programme (part of a WWF fund to manage the Terai area), and USD 5,182 from ITNC for payments for the intelligence-gathering network and informers. The funding from NGOs in this period totalled at least USD 54,832.

If we collate the funds from the DNPWC, the Army and the main NGOs going into Chitwan, the total was USD 1,570,839 for 2006/7. This works out at USD 1685 being spent per km<sup>2</sup> and over one man per km<sup>2</sup> working in the Park. These figures per km<sup>2</sup> are high for such a big area but this expenditure is necessary because of the large numbers of local people living around the Park's boundary.

### **Rhino horn stockpile figures for DNPWC**

The DNPWC also looks after a stockpile of rhino horn that originates from rhinos in Chitwan and Bardia, which are stored in a strong room in Chitwan NP (there is no



equivalent facility in Bardia NP). Before 1990 all rhino parts, such as the horns, skin and nails, were sent to the King's palace in Kathmandu for storage. In 1990, when the King lost most of his power, the DNPWC started to keep the rhino products collected in the field. In December 2007 there were 159 horns in the storeroom in Chitwan NP, but no total weight had yet been recorded. Careful accountability is needed to keep the DNPWC's new collection safe, especially in times of political unrest. In late 2007 it was not yet known how many additional horns were in the King's palace in Kathmandu.

### **Bardia National Park**

About a 10-hour drive west of Chitwan is Bardia NP, 968 km<sup>2</sup> of habitat similar to that of Chitwan. Until 1986 there had been no rhinos in Bardia for about a century. Then 83 rhinos were translocated from Chitwan into Bardia NP between 1986 and 2003 (13 in 1986, 25 in 1991, 4 in 1999, 6 plus 10 in 2000, 5 in 2002, and 10 in 2002 and 2003 respectively). The Parks Department carried out its first rhino census in 2000 and counted 67 rhinos in and around Bardia NP (DNPWC 2007a) with 35 in the Babai Valley (DNPWC 2001). This was a healthy increasing population. There were only 10 known rhino poachings between 1986 and 2000 in and around the Park (Martin and Vigne 1995; Martin 2001). The next census was carried out in 2007 and only 30 rhinos were counted, all of them in the Karnali floodplain in the west of the Park. None at all were left in the Babai Valley.

This remote region in the southeast of the Park had been the best location for rhinos, being isolated from people and possessing good grasslands on alluvial soil. Seventy rhinos had been released in this area. It is thus particularly dismaying that virtually all those that stayed in the valley were poached.

From 2001 to 2007 the DNPWC could only confirm 19 poached rhinos (see Table 1) when, in fact, well over 60 must have been poached, bearing in mind that during the last census in 2000, 67 were counted and 35 more were re-introduced soon after that census. What was the reason for this heavy poaching? The main problem was that in 2002 the Royal Nepali Army (as it was still then called) withdrew all of its five posts from the Babai Valley, joining the six or seven Army posts positioned elsewhere in the Park. In 2002 Park staff abandoned their posts in the Babai Valley and, with no protection, the Maoists then moved in; they did not allow officials to re-enter the valley. It was thus a free-for-all for poachers for several years. The Babai Valley was the easiest target for poachers during this period of unrest. Park staff later learned that the rhino poachers had come from outside the buffer zone, but in December 2007 it was not yet clear who the poachers were (Ramesh Thapa, Ranger, Bardia NP, pers. comm. December 2007; Martin 2006).



When did the heaviest poaching occur? During the 2007 census, which involved 85 people with 13 domesticated elephants over 14 days, no rhino carcasses were found in the Babai Valley, and only five poaching incidents were known in 2006 and 2007. The reason for so few carcasses despite so many poached rhinos in the valley was that most of them must have been killed between 2002 and 2004. After such a long time, the remains of the carcasses (once the poachers had taken the valuable products away and predators had consumed the rest) would have deteriorated in the heavy monsoons and been hidden by thick vegetation by the time of the 2007 census.

In the Karnali Floodplain inside the Park, the other main location for rhinos, the Army and Park staff never abandoned their posts; officials say no rhinos were known to have been poached there between 2003 and 2005. In 2006, however, one male was poisoned and one female was shot dead in the floodplain region. In 2007 Park staff found one sub-adult rhino carcass, presumably poached, with the horn and hooves missing, outside the Park in the wildlife corridor between the Park and Katarniaghat Wildlife Sanctuary across the border in India. In December 2007 a 15-day old rhino was found shot dead in the Janaknagar Buffer Zone west of the Geruwa River, the eastern branch of the Karnali River. The legs, tail, nose and ears were removed (Thapa, pers. comm. December 2007; Anon. 2008). Army patrols were thus not adequate.

After the truce agreement with the Maoists in April 2006, the Army in Bardia NP began to reestablish its posts. There had been only five Army posts remaining, but by December 2007 the Army had 13 with plans to build four more. It is most important for the Army to step up its patrols. One of the returned posts is in the Babai Valley (Lt Col. Sameer Singh, Head of Ransher Battalion, Bardia NP, pers. comm. December 2007). Although no rhinos remained in the Babai Valley, patrollers caught eight wildlife poachers, each with a home-made gun, who were hunting deer and wild boar. For the Park as a whole, officials reduced the number of fish poachers (who commonly had been poisoning and electrocuting fish to catch them easily) and illegal tree cutters. The various authorities arrested 483 people in 2006/7 for illegal entry, tree felling, grass cutting, and illegal fishing inside Bardia NP. They also caught 22 animal poachers (Bardia NP, unpublished statistics). In order to stop the poaching of rhinos and tigers, intelligence funds (that have been available in recent years) were allocated totalling USD 2300 in 2006/7, but this is still too little. Some say it is only 10% of what is needed (Thapa, pers. comm. December 2007).

With the improvement in law and order, the main problem facing Park management by late 2007 was human-wildlife conflict that was increasing, especially regarding the growing elephant population (Fanindra Kharel, Bardia's Chief Park Warden, pers. comm. December 2007). In the early 1990s only about two wild elephants resided





The Army inside Bardia National Park had raised this orphaned rhino in their camp, and also had a leopard cub in December 2007.

in the Park, but by 2006 there were at least 80, most having wandered in from India. From 2000 to 2006 there were 1272 recorded cases of elephant damage in the buffer zone around Bardia NP (Anon.2007d). Elephants killed 12 people and damaged 500 houses in the year 2006/7 (Thapa, pers. comm. December 2007). There is also evidence of livestock depredation from the few remaining tigers. Compensation is paid for human death, but this was only USD 346 in 2005, and no funds are available for house or crop damage. The elephants are now doing a huge amount of damage (DNPWC 2007b). Park staff is trying to reduce human-wildlife conflict, which sometimes includes damage from rhinos. A rhino killed a person in the buffer zone in January 2006. In 2007 Park staff, with NGO assistance, constructed an electric fence and watch towers on the western side of the Park. Although the situation has improved, the fence should be better maintained and the watch towers more utilized. The people are still suffering in the buffer zone and beyond which has made them less tolerant of wild animals and perhaps more sympathetic to the activities of rhino poachers, although up to December 2007 no elephant had been killed. Most of the human-wildlife conflict is in the Karnali Floodplain area, which has the highest concentration of villages.



Again, due to the growing political stability in Nepal, Bardia NP received more tourist revenue in 2006/7 than in recent years. In the fiscal year 2005/06 there were 1384 tourists and by 2006/7 there were 3637. The number of beds in the 15 tented camps and lodges that were open around the Park was 210 in December 2005 reaching 279 in December 2007. Of these beds, the occupancy rate was 8.5% in December 2005 rising to 13% in December 2007 for a single day. As with Chitwan, Bardia's buffer zone is supposed to receive 50% of the tourist revenue earned by the Park. In 2006/7 the Park received much more revenue than in recent years, but due to bureaucracy, as of December 2007, the Ministry of Forests and Soil Conservation had still not released these funds to the buffer zone communities for 2005/06 or 2006/7. The Buffer Zone Management Committee was extremely concerned about the delay of funds which are used for conservation projects to benefit rhinos and educational projects to improve local people's awareness of the importance of protecting Bardia's wildlife, especially rhinos and tigers that are important to them for tourism (Nilkantha Kandel, Programme Officer, Buffer Zone Management Committee, Bardia NP, pers. comm. December 2007). There has been, however, a growth in rhino conservation activities through the UK-funded Darwin Initiative of ZSL (Richard Kock, Zoological Society of London, pers. comm. 2008).

### **Suklaphanta Wildlife Reserve**

This Reserve, an area of 305 km<sup>2</sup>, is reached by road on a journey northwest of Bardia that now takes only about five hours because the India and Nepal governments have recently built bridges over the many rivers. As well as savannah and forests it consists of huge open grasslands that are famous for their 2,500 swamp deer. There were perhaps a handful of rhinos in the 20th century but by 2000 only one remained. The DNPWC translocated one male and three females in 2000 from Chitwan NP to Suklaphanta WR and by 2005 they numbered seven.

In 2000, however, Maoist activities worsened in the area, forcing the Army to consolidate from nine posts into three. The Reserve staff also had to merge some of their 14 posts. From 2001 to 2004 Maoists destroyed most of the vacant posts. Poaching gangs became a severe problem. Most poachers were (and still are) from the buffer zone around the Reserve or from India, which is on the Reserve's southwestern border (Nilambar Mishra, Assistant Warden, Suklaphanta WR, pers. comm. December 2007; Shakya and Chitrakar 2006). In 2005 authorities killed three Indian poachers in the Reserve. Indian and Nepalese poachers are still a problem, coming mainly for spotted deer, wild boar, swamp deer, fish, wood and to graze cattle illegally. While the Nepalese use poisons, guns, dogs, snares and traps to kill wildlife, the Indians hunt usually with guns only. The frequent poachers entering the Park, especially during the Maoist disturbances, were a





Suklaphanta Wildlife Reserve had five rhinos in December 2007 and is rarely visited by tourists as it is in the remote part of western Nepal.

great threat to the newly re-introduced rhinos. However, no rhinos were recorded as poached between 2000 and 2006. One died of natural causes in 2006, however, and Park staff recovered the horn.

With the country in relative peace by 2007, Army and Reserve staff were able to increase their patrol work. In December 2007 Reserve staff found a rhino carcass that had been killed by poachers who had removed its horn, some skin, hooves, bones and meat. When officials found the remains of the carcass, it was probably three weeks old. Reserve staff soon arrested four men in the buffer zone who admitted they had sold the horn, but said they had not killed the rhino.

The Reserve earns little money, as the number of tourists has always been small. This is due to its isolated location in the extreme west of the country, poor access roads in the past, inferior hotels and lack of advertising. Tourist numbers fell even lower during the Maoist insurgency to 39 in 2005/06. By 2006/7, the numbers rose to 308 due to the peace accord. Other revenue comes from timber sales, the buffer zone community forests and fines collected as penalties for illegal activities in the Reserve.





During the collapse of Nepal's tourism due to the Maoist insurgency, domesticated elephants that are used for wildlife viewing had little work and some had to be sold.

Reserve staff does not have an adequate budget to manage the Reserve as well as they would wish. Although the number of Army posts occupied had increased to five by the end of 2007, the Army was not patrolling as well as it should have been. The posts manned by Reserve staff had increased to eight, but they need to reach their previous number of 14. The number of Reserve staff (72) is too low because the Reserve personnel must also patrol in parts of the buffer zone. They do not have enough vehicles or domesticated elephants (six only) and their communications equipment is inadequate. The buffer zone communities complain that they do not receive enough compensation for human-wildlife conflict deaths and injuries. As there is also a reasonable amount of crop damage caused by elephants, spotted deer and wild boar, some people are uncooperative with the Reserve staff or tolerant of the poachers, even colluding with them (Mishra and Chiranjibi Pokhera, Suklaphanta Conservation Programme, NTNC, pers.

comm. December 2007). In December 2007, with improving law and order, staff were ready to upgrade the Reserve's management. It was especially necessary for them to be more aware of the rhinos' location and movements in order to watch over their security. They unfortunately still feel that they have poor communications with the central government, being so far away.

## Recommendations

- One short-term measure needed to reduce rhino poaching is to re-establish more and well-managed Army and DNPWC posts in Nepal's three rhino areas. Until Maoist attacks became a serious problem, the number of posts was adequate, and this number, therefore, should be established once more. Patrol work needs to be intensified at all posts. All patrols need to be intensified, especially for the Army who carry firearms.



- Later, perhaps, a professional Army anti-poaching unit could be established with highly trained and well-equipped sections and new identifiable uniforms. Such personnel would be more trusted by the community and able to work in all areas in and around the parks (Richard Kock, ZSL, pers. comm. 2008).
- As there is a continuous movement of rhinos wandering out of the parks to graze on crops causing upset to the villagers and exposing the rhinos a far greater risk of being poached, techniques that are known to work elsewhere in Asia must be established to keep rhinos, whenever possible, in the parks. Examples are growing non-palatable crops near park boundaries rather than rice, while at the same time improving the vegetation in the parks by clearing toxic invasive species, and securing the boundaries by increasing and maintaining electric fences and watch towers where possible.
- The Army and Park staff need to adapt their anti-poaching strategies every two years as otherwise poachers grow accustomed to them.
- Long-term vacancies among senior Army positions must be avoided, such as one that occurred recently inside Bardia NP.
- The Army needs to keep its vehicles well maintained and operational.
- More patrol work is needed in the buffer zones where rhinos have a much greater chance of being poached. Only the Forest Department has the jurisdiction for this, but the Parks Department and Army should be much more involved. The Army is especially important in combating poachers and traders as only they carry firearms. This presently happens only on rare occasions with special permission. Their entry into the buffer zones happens only rarely.
- In the short term, small targeted sums of money under strict control and largely restricted to equipment, staff housing and vehicle support are needed. In the long term, perhaps the DNPWC could set up a strictly controlled international trust fund to raise money for refurbishing Chitwan NP, Bardia NP and Suklaphanta WR. This fund could also be used for future emergencies.
- The key to stopping rhino poaching in Nepal is a good intelligence gathering system, but this requires sufficient and constant funding to pay salaried and ad hoc informers in order to combat both poachers and traders. Funds were reduced during the political unrest, but by December 2007 the Parks Department staff had still not received enough funds.
- More of the grievances of the local people in the buffer zones need to be attended to by the government, particularly regarding adequate compensation for human



deaths and injuries. This would also make it easier for the buffer zone management committees to allow Army personnel easier access to the buffer zones.

- An NGO could set up a second international trust fund to pay for wildlife damage caused by rhinos, tigers and elephants to property and crops near protected areas while making sure that the claims are legitimate.
- It is important that finances from the government, NGOs and private sources meant for user groups in buffer zones reach the poorer people rather than unfairly going to the higher caste Hindu groups (Martin 2006).
- The buffer zone management committees need to implement better policies to reduce the growing destruction of their environment, mainly excess tree cutting and cattle grazing, by providing more money to develop other livelihoods.
- Tracker dogs should be introduced to catch poachers in the protected areas and buffer zones. The training and management of dogs can be learned from Kenya where they are used successfully to catch rhino poachers (Richard Kock, pers. comm. 2008).
- In Kathmandu, where the main traders of rhino horn and other endangered wildlife products are based, more effort is needed to catch these individuals. A special intelligence unit concentrating specifically on wildlife crimes is needed either in the Forest Department or Police Force. It is not clear at the moment who should take the initiative in stopping the illegal trade in Kathmandu, and jurisdiction thus needs to be clarified.
- It may be important to consider building a fenced rhino sanctuary within Bardia NP and Suklaphanta WR run by DNPWC and some NGOs until rhino numbers are re-established. In this way, officials could merge the unsafe or dwindling rhino populations into a small area where manpower can be concentrated to look after the rhinos more efficiently like the population in the Dudhwa Rhino Sanctuary in India.
- It may also be appropriate to look into the possibility of encouraging wealthy people committed to saving rhinos to obtain land in the buffer zones in the Terai on long lease to help manage rhinos that frequently wander out of the protected areas and would otherwise be killed as long as insecurity in these zones continues. This would be in the interest of both rhino conservation and local communities who would benefit from employment. If tourist lodges were set up, revenue from the sanctuary entrance fees and lodges could be made available for the buffer zone communities. These privately operated sanctuaries could provide additional support to rhino conservation, especially needed in case of future political unrest during which the government parks and reserves would struggle to protect rhinos, especially those outside the parks. The private sector can emulate other well-run privately managed rhino sanctuaries. This



would bring Nepal favourable publicity, as it would be the first example of such an initiative in Asia and it would attract international conservation support.

## Conclusion

The above strategies should be implemented in Nepal soon. The rhinos that wander out of the protected areas are particularly vulnerable and frequently poached so they require special attention. Extra protection for these endangered rhinos is needed if we are to counteract any future threats from political disturbances in the country.

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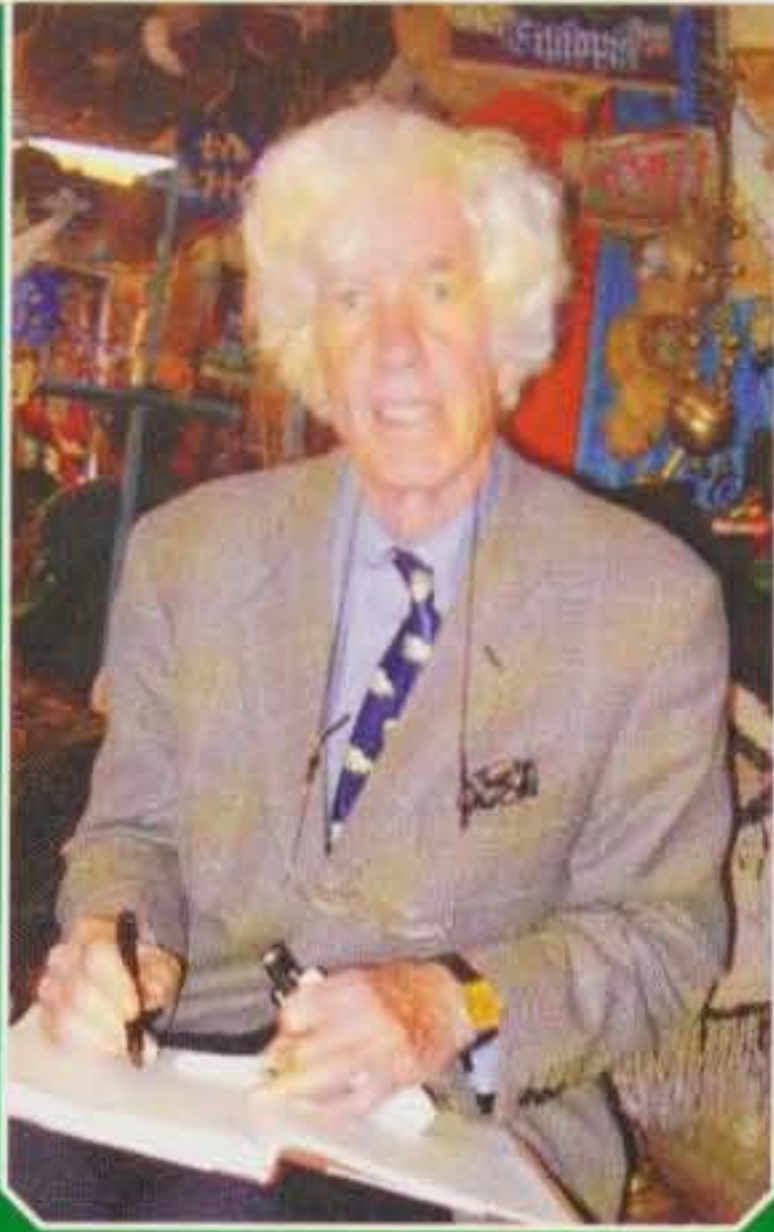
### Postscript

In a census carried out in March 2008 there were 408 rhinos counted in and around Chitwan National Park. An estimate was made of Bardia National Park's rhinos in mid-2008 of 21. The number for Suklaphanta Wildlife Reserve remained six for mid-2008.



In 1979 Esmond Bradley Martin started collecting information on the use of dried rhino nails and hide, in addition to the horn used for medicines (Photo: Chryssee Martin).





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