

A Review of the Wild Animal Trade in Cambodia

by Esmond Bradley Martin and Marcus Phipps

Cambodia is a country with few developed natural resources and little industry. Following the deposition of the Khmer Rouge from effective power in 1979 and the withdrawal of Vietnamese troops (announced to have been effected by 1989), the country's economy increased generally and commerce in wildlife is reported to have escalated. This review is an attempt to understand the nature and scale of the consumption and trade of Cambodia's wildlife. It was found that a number of endangered animal species appear to be regularly traded, while other species are traded at levels which may not be sustainable. Severe structural and resource constraints at every level of Government and the ready availability of weapons and ammunition serve to compound the difficulties in controlling illegal hunting of and trade in Cambodia's wild animals.

INTRODUCTION

Literature on Cambodia's native fauna is scarce. During the period of French occupation (1863-1954), no wild animal surveys are known to have been made, while from the mid-1970s to the late 1980s, it was impossible to carry out research owing to political instability in the country. Less is known about the numbers and distribution of wild animals in Cambodia than for any other country of the region. TRAFFIC Southeast Asia conducted the first survey of wildlife trade in Cambodia in 1992. Research by the International Primate Protection League and IUCN, and further surveys by TRAFFIC, followed in 1993. The findings forming the basis of this report are drawn from original survey work in Cambodia during 1994, which included visits to the main trading centres across the country and interviews with traders and Government officials. As a result, it was possible to gain an understanding of the country's wildlife legislation and potential for its enforcement, the location and importance of several of Cambodia's wildlife trade centres, and an insight into trade levels and trade routes abroad.

BACKGROUND

Cambodia has a long history of wildlife utilization and trade dating back to the Funan period (1st-6th centuries AD) (Chandler, 1993). From that period, up to the early 20th century, Cambodia's main source of foreign exchange was the export of wildlife products. Records left by Chinese merchants and visitors such as Chou Ta-Kuan (1296-1297) during the Angkor period, list ivory, rhino horn, feathers, lacquer, pepper, cardamom, beeswax and honey as the principal forest products for export (Chandler, 1993). Until the nineteenth century with the beginning of the French colonial period, this list remained essentially unchanged.

The country gained independence from the French in 1954. In the late 1960s and early 1970s, the country was involved in the war between Vietnam and the USA, following which the *Khmer Rouge* held power from 1975 until overthrown by the invading Vietnamese four years later. The low human density of the country has enabled wildlife to survive relatively undisturbed in some areas compared with elsewhere in eastern Asia: the northeastern province of Ratanakiri, for example, has a small population and large areas of intact forest, reputed, at least in 1994, to have been a haven for wildlife. Cambodia is known to be home to 123 mammal species, 82 reptile species, 28 amphibian species, 429 bird species and at least 215 freshwater fish species (Anon., 1996a). Any consideration of wildlife resources in Cambodia should be made within the context of the country's several decades of war and resultant disrupted government. The effects of the prolonged warfare may have left some wildlife populations in a vulnerable condition, owing to increased reliance on them for subsistence and an increased availability of firearms (Nash, *in litt.*, February 1996). During the *Khmer Rouge* regime, virtually the whole population was deployed to clear jungle, forest and scrub (Famighetti, 1996), thereby destroying wildlife habitat, and there was a total absence of wildlife legislation in force. In addition, one group in particular, the Poro (freedom fighters who fled Vietnam for Cambodia when South Vietnam fell to the communists in 1975) were known as active hunters in Ratanakiri and Mondolkiri Provinces, where most of Cambodia's large wild animals are found. In late 1993 to early 1994, over 300 Poros were relocated to the USA by the US Government, and this may have significantly reduced hunting pressure in Ratanakiri and Mondolkiri (Phipps, 1994b).

Internal struggles in Cambodia have continued since the deposition of the *Khmer Rouge* government, despite United Nations intervention in the establishment of a democratically elected Government in 1991. Large parts of the country are infested with land-mines and the *Khmer Rouge* are still fighting a guerilla war, especially in the western part of Cambodia. This group and other armed brigands sometimes act as guardians of illegal shipments across provincial and international borders. They also supplement their meagre pay and poor diet by hunting wildlife themselves. The United Nations and foreign aid agencies have helped to restore the country's infrastructure by repairing roads and bridges and defusing many land-mines. Although the years of fighting in Cambodia devastated the economy, business is increasing now, especially in the capital, Phnom Penh. By early 1994, the economic situation in Phnom Penh and in some other towns had greatly improved and foreign business had been attracted; the national currency, the riel, was easily exchanged for the US dollar at a rate which had been stable for many months. However, any possible gains for wildlife conservation as a result of the cessation of full-scale warfare are now expected to be more than offset by increased levels of trade in wildlife. Demand from wealthier middle-class Cambodians includes that for game

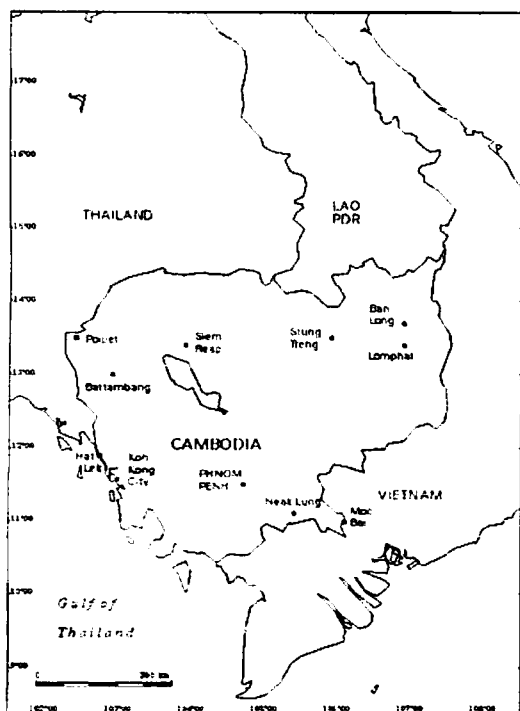


Figure 1. Map of Cambodia featuring survey sites.

meat, medicinal products from native fauna and flora, and a liking for wildlife trophies, while poorer Cambodians depend on wildlife for food, medicine and income. Vietnamese, Singaporeans and Thais are coming to Cambodia to buy such products also, while large wholesale consignments go to China, Singapore, Taiwan and Thailand (Stiles and Martin, 1994).

While current legislation includes a ban on the hunting of wild animals in Cambodia, there is at best haphazard enforcement of the law. The availability of weapons and involvement of influential interests in wildlife trade, coupled with only nominal control over exports across Cambodia's national borders, are two of the salient aspects of the complex problem of regulating the commerce.

Cambodia's largely rural human population of around ten million has an annual growth rate of 2.5%, a literacy rate of about 50%, and had an annual per capita GDP in 1995 of US\$215 (Anon., 1996b).

METHODS

Material for this article is based primarily on surveys carried out by the authors in 1994:

- The main retail areas of Phnom Penh, Neak Lung, Battambang, Poipet and Siem Reap were surveyed by Martin in February. He examined all 22 wildlife product shops at the O Russei market of Phnom Penh; 75 souvenir shops and stalls in the main retail parts of Phnom Penh (including at the city's other markets, Tuol Tom Pong market and the Central market); four wildlife restaurants in Phnom Penh; the stalls at Neak Lung; the market and one souvenir shop elsewhere in Battambang; the Poipet market; and the eleven souvenir shops at Siem Reap's

airport and town. Meetings with wholesale dealers and Government officials were held as part of Martin's research. The surveys were carried out over a period of 16 days.

- Several visits to the same markets of Phnom Penh as those surveyed by Martin were made by Phipps between 23 April and 3 June. He also visited two wildlife restaurants in the capital; Koh Kong City market (28 May) and the nearby Thai border (29 May); Ban Long and Lomphat in Ratanakiri Province, near the Vietnamese border (single visits between 25-28 May); and Neak Lung and Moc Bai at the border with Vietnam, over two days in May.

Supplementary information from TRAFFIC Southeast Asia's investigations has been included in this report. Specifically, trips included visits to Central market (Phnom Penh), on two separate days in May 1992; a single visit to Tuol Tom Pong market (Phnom Penh), in May 1992; meetings with Government officials in May 1992; a visit to Poipet market on 20 October 1992; a single visit to Central market in April 1994; a single visit to O Russei market in April 1994; visits to Government ministries and non-governmental conservation organizations in April 1994. Information provided by a reliable source who wishes to remain anonymous is cited in the text as Anon., *in litt.*, February 1996.

While it is recognized that trade in some of Cambodia's native flora is of concern in conservation terms, the scope of the findings in this report is confined to those relating to fauna.

The exchange rates used to convert the local currencies are R2500 (Cambodian riel), Bt25 (Thai bhat) and K700 (Lao kip) to the US dollar.

LEGISLATION

During the French colonial period, various ordinances were passed to control hunting in Cambodia, culminating in *Royal Ordinance No. 24*, issued on 12 February 1940. Among other provisions, this established a closed hunting season (from 1 June until the last Sunday in November) and prohibited hunting without a licence (Anon., 1940). *Decree (Prakas) No. 191* of 20 January 1960 listed animals exempt from hunting, including the Asian Elephant *Elephas maximus*, Wild Asiatic Buffalo *Bubalus arnee*, Banteng *Bos javanicus*, Kouprey *Bos sauveli*, and six deer species. Both the 1940 and 1960 laws were presumably functioning at least up to 1975, but during the *Khmer Rouge* regime many decrees were either declared null and void or were not enforced (P. Le Billon, pers. comm., 1994), or documented regulations were literally destroyed (Nash, 1992a).

After the end of the *Khmer Rouge* regime, the *Fiat-Law on Fishery Management and Administration (Kret No. 33)* was issued by the Council of State, on 9 March 1987, supplemented by *Forest Practice Rules (Kret No. 35)*, issued by the Council of Ministers, on 25 June 1988

(Anon., 1988). The former forbids the capture, sale and transport of "fingerling, fish egg, crocodile, Giant Catfish *Pangasianodon gigas*, Jullien's Golden Carp *Probarbus jullieni* and *Grossochilus latius*". The Department of Fisheries is permitted to impose fines for certain fisheries violations, but confiscation for serious offences can be implemented only by a court of law. The latter decree includes regulations relating to hunting as well as to timber extraction: article 22 of the *kret* states that "hunting of wild game and birds shall be absolutely prohibited until a new law is issued". Thus, at least until the end of 1994, the hunting of all wildlife was prohibited and the trade in "new" wildlife products was also forbidden, but sales of old wildlife items such as antique elephant ivory were technically legal (Chhim Somean, pers. comm., 1994).

The Government does not allow the export of wildlife. With the exception of crocodile exports which were banned with effect from December 1993, the Ministry of Agriculture has not issued permits for the export of any wildlife or wildlife products in the last 14 years (excluding timber and fish products).

Cambodia expressed strong interest in joining CITES during recent discussions with TRAFFIC Southeast Asia.

RESULTS

DESCRIPTION OF MARKETS VISITED

Phnom Penh: Street 166, part of the O Russei market, is the wholesale and retail centre for wild animal and plant products in Phnom Penh. The shopkeepers in the O Russei market are Chinese and Cambodians who have re-established business at the market since the end of the *Khmer Rouge* regime (Phnom Penh was taken by the Vietnamese in January 1979). More than two-thirds of the sales value of wildlife products is from plants used mostly by Cambodians for medicinal purposes, but since 1989, following the relative recovery of the economy, there has been a strong demand, especially from the Vietnamese, for animal products.

Details of animal products found for retail sale at O Russei in 1994 are recorded in Table 1.

Other markets in Phnom Penh: The other city markets generally do not sell many wildlife products. Tuol Tom Pong market, the "Russian" market, is generally known for its antiques, but a few stalls had wild animal parts, including from Malayan Pangolins *Manis javanica*, pythons *Python* spp. and Slow Lorises *Nycticebus* spp., but no trophies or skins. The Central market did not appear to have much wildlife for sale, although one stall was selling several animals, perhaps as pets or food, including freshwater turtles, a Clouded Leopard *Neofelis nebulosa*, and Fishing Cats *Prionailurus viverrinus*.

Phnom Penh has scores of souvenir shops in its main retail areas, where the most common wildlife item on sale was elephant ivory (Table 2).



A medicine shop at O Russei market, Phnom Penh.

Ban Long: Ban Long, with a population estimated at 60 000, is the capital and main market town of Ratanakiri Province. There is evidence of well-organized wildlife trade in the province and, although secondary to slash-and-burn style farming in economic importance, hunting in Ratanakiri has escalated in scale in step with the greater availability of firearms and improved transportation and distribution systems to meet demand in neighbouring countries (Phipps, 1994b).

Ban Long is known to many as a centre of wildlife trade but while several shops at the Central market contained one or two wildlife trophies in 1994, two stood out as being well-stocked, although one of these was less overt in its display of items. There was no fresh meat for sale at the market during the survey period, which was conducted at the end of the dry season when hunters would have been occupied with preparing to plant crops.

Battambang: Battambang is the second-largest city in Cambodia, with a population of over 200 000. Its economy is still depressed relative to that of Phnom Penh, and both foreign and local traders, as well as tourists, avoid the area owing to the presence of *Khmer Rouge* rebels (Brown, 1994). At the main market, Psar Phom, some trade in ivory was discovered.

Koh Kong City and Hat Lek: Although investigators expected to find a well organized trade in wildlife based in Koh Kong City, owing to Koh Kong Province's strategic importance in Cambodia's illegal timber trade (Davies, 1993; Kanter, 1994), no trade in game meat or any other wildlife was evident at the time Koh Kong City market was visited. Hat Lek market in Thailand, on the border with Cambodia, consists of around 20 small shops. Locals said that many residents of Bangkok visited the market at the weekends. A limited amount of wildlife products was on sale.

Animal parts	Use/Cure in Cambodia	Average price (US\$)	% shops with item
Asian Elephant <i>Elephas maximus</i> bone	poison cure	?	5
skin	acne cure	6/kg	9
tail	decoration	0.80	5
teeth	?	?	5
tusk	decoration, carving	400/kg	9
Banteng <i>Bos javanicus</i> horns	decoration	?	5
Black-spined Toad <i>Bufo melanostictus</i>	sexual diseases	0.11	32
Burmese Hare <i>Lepus peguensis</i> skin	several diseases	2	5
Deer (various spp.) antlers	tonic	500/kg	5
foot	tonic after childbirth	5	5
penis	aphrodisiac	20	5
Fishing Cat <i>Prionailurus viverrinus</i> skin	decoration	16	9
Gaur <i>Bos gaurus</i> horns	decoration	45/pair	14
Hog Deer <i>Axis porcinus</i> antlers	decoration	30/pair	5
Indian Smooth-coated Otter <i>Lutra perspicillata</i> tail	labour pains	45	27
Leopard <i>Panthera pardus</i> skin	decoration	133	9
Lesser Mouse Deer <i>Tragulus javanicus</i> antlers	decoration	?	5
bone	bone tonic	4/kg	5
Malayan Pangolin <i>Manis javanica</i> claw dried	?	8/kg	5
	decoration	3	9
Monkey (various spp.) head	headache	4	5
skin	?	5	5
Oriental Small Clawed Otter <i>Amblonyx cinereus</i> tail	labour pains	45	27
Porcupine <i>Hystrix brachyura</i> stomach and Asiatic Brush-tailed Porcupine <i>Atherurus macrourus</i> stomach	tonic after childbirth	9	36
Reticulated Python <i>Python reticulatus</i> bone	fever cure, tonic	3.2/kg	36
skin	belts, bags, wallets, etc	4/metre	41
Sambar <i>Cervus unicolor</i> antlers	decoration	50/pair	18
Serow <i>Naemorhedus sumatraensis</i> horn	decoration	?	5
Slow Loris <i>Nycticebus coucang</i> dried	tonic	4.40	50
Snake (various spp.) dried	medicine	1.60	27
Sun Bear <i>Helarctos malayanus</i> bile	fever cure	1000/kg	5
head	decoration	20	5
skin	decoration	40	14
tooth	decoration	40	5
Thamin <i>Cervus eldii</i> antlers	decoration	50/pair	9
Tiger <i>Panthera tigris</i> bone	rheumatism	100/kg	5
nail	ornament	4	9
skin, no hair	fever	20/kg	5
tooth	ornament	5	5
Tokay <i>Gekko gekko</i>	aphrodisiac, coughing	0.30	14
Tortoise head (various spp.)	tonic after childbirth	2.90	27
shell	tonic after childbirth	6/kg	27
Water Monitor Lizard <i>Varanus salvator</i>	medicine	5	5
Wild Asiatic Buffalo <i>Bubalus arnee</i>	dropsy	?	5
Wild Pig <i>Sus scrofa</i>	decoration	?	9

Table 1. Wild animal products for retail sale in O Russei market, Street 166, Phnom Penh, February 1994.
Survey by Martin

Lomphat: The home of a couple in the town of Lomphat is a major collection point for an area covering most of southern Ratanakiri and northern Mondolkiri, for wild animals destined for trade: many of these animals come from areas surrounding the villages of Samut and Soda, which are important hunting grounds. Such trade was said to be conducted from Lomphat on a significant scale by traders visited.

Neak Lung: Sixty kilometres southeast of Phnom Penh, on the road to Ho Chi Minh City, the town of Neak Lung straddles the Mekong River and is a ferry crossing point for traffic going to Vietnam from Phnom Penh and western Cambodia. It is known to many locals as a centre for wildlife trade, principally in reptiles. These animals become harder to find in the dry season which, combined with the increased demand for freshwater turtles for food during Khmer and Chinese New Year, may explain why fewer specimens were on display in May 1994 than in February of that year (Table 3).

Poipet: Poipet, a village with only a few stone buildings about one kilometre from the Thai border in northwest Cambodia, is dominated by a large covered market with several hundred stalls, which was developed to cater for Thai demand: although Thais may move freely across the border into Cambodia, they may not go beyond the market at Poipet. Prices are lower in Poipet than in Thailand because few taxes are paid in Cambodia (Nash, 1992a). Most products in the market are priced in Thai baht rather than in Cambodian riels or US dollars. One of the largest assortments of wildlife products to be found in Southeast Asia was discovered at Poipet's covered market, including products from some of the most endangered animals in the region (Table 4). Almost all the wildlife products were from animals native to Cambodia.

Siem Reap: Siem Reap is the closest town to the Angkor Wat ruins which are an attraction to foreign visitors. Few of Siem Reap's shops and market stalls were found to be selling wildlife, but in 1993 several endangered wildlife species were on sale at the town's main market (Salter, 1993), a fact explained by the itinerant nature of the vendors (D. Ashwell, pers. comm., 1995).



A Gaur *Bos gaurus* grazing.

Animal part	Use	Average price (US\$)
Asian Elephant <i>Elephas maximus</i> bone		
Buddha carving 2.5 cm high	ornament	2
elephant carving 9 cm high	ornament	?
Asian Elephant ivory		
Buddha carving 2.5 cm high	ornament	19
on <i>tror ou</i> (instrument)	music	?
cigarette holder	cigarettes	10
earring	jewellery	28
finger ring	jewellery	25
flower bud 5 cm	ornament	16
necklace (beaded)	jewellery	35
Tiger carving 15 cm long	ornament	?
tusk, poor condition	decoration/carving 100/kg	
Banteng <i>Bos javanicus</i> horns	decoration	100/pair
Common Palm Civet		
<i>Paradoxurus hermaphroditus</i> (stuffed)	decoration	16
Gaur <i>Bos gaurus</i> horns	decoration	70/pair
Green Peafowl <i>Pavo muticus</i> feathers	decoration	?
Hog Deer <i>Axis porcinus</i> antlers	decoration	50/pair
antler-handled knives	knives	10
Python <i>Python</i> spp. skin		
drum 30 cm diameter	music	8
on <i>tror ou</i> (instrument)	music	11
Schomburgk's Deer <i>Cervus schomburgki</i> antlers	decoration	10/pair
Sun Bear <i>Helarctos malayanus</i> nail	ornament	3
Thamin <i>Cervus eldii</i> antlers	decoration	100/pair
Tiger <i>Panthera tigris</i> nail	ornament	5
skull	decoration	70
tooth	ornament	67
Tortoise (various spp.) (stuffed)	decoration	25
Wild Asiatic Buffalo <i>Bubalus arnee</i> horn (faked as rhino horn)	decoration	60
Wild Pig <i>Sus scrofa</i> tusk	decoration	25
tusk Buddha carving 2.5 cm	ornament	16

Table 2. Wildlife products for retail sale in souvenir shops in Phnom Penh, February 1994. Survey by Martin

Animal	Average price (US\$)	End market
Cobras Lapidae	8/kg	Phnom Penh
Fishing Cat <i>Prionailurus viverrinus</i>	10 each	Phnom Penh, Thailand
Monkeys, small. (various spp.)	2 each	Phnom Penh, Thailand
Pigeons (various spp.)	0.80 each	Phnom Penh
Pythons <i>Python</i> spp.	3/kg	Phnom Penh, Thailand, Vietnam
Tortoises (various spp.)	2.2/kg	Phnom Penh, Thailand, Vietnam

Table 3. Live animals for retail sale at West Neak Lung, February 1994. Survey by Martin

SPECIES FOUND IN TRADE

Bears

Bear parts, including gall bladders from Sun Bear *Helarctos malayanus* and *Ursus* spp., were seen for sale (Tables 1, 2 and 4) and three bear skulls were on sale at O Russei; in Lomphat, a soldier was observed offering a bear gall bladder to one author's driver; it was said to be worth US\$100 in Phnom Penh. Six or more bear skulls were displayed for sale at O Russei in May and December 1995 (Anon., *in litt.*, February 1996). Broad and Phipps (1994) recorded parts of Asiatic Black Bear *Ursus thibetanus* and Sun Bear in trade in Cambodia (Table 6).

Birds

The trade in live birds appears to be quite limited, with birds such as parakeets and mynas being sold locally or for export to Thailand by individuals, rather than in large commercial shipments (Phipps, 1994a). Pigeons and 25 doves were seen on sale at Neak Lung and pheasants and parakeets at Poipet markets in 1994 (Tables 3 and 5). The doves were on sale for R1000 per bird (US\$0.40) and the stallholder reported selling an average of 10-15 doves a day. A wholesale trade from Neak Lung in pigeons, herons, ducks and watercocks goes mostly to Phnom Penh for food and is managed by Vietnamese. Mundkur *et al.* (1995) also mention a trade in water birds for restaurants and in Siem Reap rails, egrets, tree ducks and doves were available for local consumption (Salter, 1993).

Sixty Baya Weavers *Ploceus philippinus*, 150 Scaly-breasted Munias *Lonchura punctulata*, 20 Black-headed Munias *L. malacca* and 60 Barn Swallows *Hirundo rustica* were being hawked outside a temple opposite the Royal Palace gates in Phnom Penh in April 1994, apparently for release by Buddhists (Broad, 1994). Large numbers of swallows, weavers and Yellow-breasted Buntings *Emberiza aureola*, and a smaller quantity of Oriental Reed Warblers *Acrocephalus orientalis* were seen in the capital in December 1995, on sale for release by Buddhists. Many of these birds were in poor condition (Anon., *in litt.*, February 1996). Brahminy Kites *Haliastur indus* are often trapped, possibly to be kept as pets (Anon., *in litt.*, February 1996).

Green Peafowl *Pavo muticus* feathers were seen on sale in Phnom Penh (Table 2), at Ban Long Central market six complete peacock tails were on sale at one shop, and dead peacocks were reported as being regularly exported to Vietnam by one shopkeeper at the market, who had a stuffed specimen on sale for US\$100. The only use of peacocks is decorative. Dried coucals *Centropus* spp. were noted as being very common (in quantities of over 100) at O Russei market during a visit there in December 1995 (Anon., *in litt.*, February 1996); they are used for medicinal purposes (S. Broad, pers. comm., 1996).

Cats

Reliable estimates of the number of Tigers living in Cambodia are unavailable and there has been no formal survey of the country's Tiger population. Tigers no longer raid villages, according to inhabitants of Lomphat, interviewed in 1994, but in another part of Ratanakiri Province, local people still kill Tigers with traps when they raid villages, keeping the animals' skins and bones until a businessman visits the village: in April 1994, villagers in Ratanakiri had killed two or three Tigers.



© E.B. Martin

People from Thailand make special trips to the border village of Poipet in northwest Cambodia to buy Tiger and Leopard skins.

Tiger products are found openly on sale in Cambodia. Two of the most important Tiger traders in O Russei market said that they had sold an estimated 33-43 dead Tigers. Traders at O Russei market and at Siem Reap and Poipet were seen selling Tiger parts, such as skins, bottled fat, bones, teeth and nails, observations similar to those made by Nash (1992c) and Salter (1993). One to two Tiger skins were seen on two separate visits to O Russei market during May and December, 1995 (Anon., *in litt.*, February 1996).

Prices for Tiger bone have risen markedly from the early 1980s, when Thais were said to have bought bones for US\$40 per kg from O Russei. By 1991, market traders were selling bones for US\$55 per kg, while average 1993 prices in the O Russei market were US\$80-US\$100 per kg, depending on bone size. The skeleton of the largest male Tigers in Cambodia weighs up to 20 kg, while that of an average adult Tiger weighs 12 kg-15 kg. In December 1993, a Cambodian soldier sold a whole carcass to a trader in Phnom Penh for US\$1500 who in turn sold the nails and skin (after tanning) for US\$900 to a Cambodian who shipped them to Thailand and Singapore. In 1992, a trader from Singapore bought Tiger bones for US\$250 per kg in Koh Kong Province, the highest price known to have been paid.

Other reports indicate that hunters sell live Tigers for US\$200-US\$250 each to traders in Phnom Penh. The animals are sent to Vietnam, especially to Ho Chi Minh City, where they can be sold retail for as much as US\$5000

Animal part	Use/cure in Cambodia	Average price (US\$)
Asian Elephant <i>Elephas maximus</i> bone	carving	10/kg
bone ring	jewellery	1
ivory bangle	jewellery	40
ivory dice	game	6
penis piece	aphrodisiac	200/35 cm
tail	decoration	40
trunk	?	40/25 cm
tusk, small	decoration/carving	240/kg
Banteng <i>Bos javanicus</i> horns	decoration	?
horns with skull	decoration	120
Bear <i>Ursus</i> spp. gall bladder	fever	80
gall bladder (fake)	fever	20
Deer antler, deformed	decoration	500/5 cm
Deer penis (various spp.)	aphrodisiac	8
Gaur <i>Bos gaurus</i> horns with skull	decoration	40
Hare <i>Lepus penguensis</i> skin	diseases	4
Indian Muntjac <i>Muntiacus muntjak</i> antlers	decoration	30/pair
antler (fake, deformed)	decoration	?
Kouprey <i>Bos sauveli</i> horns with skull (female)	decoration	400
Leopard <i>Panthera pardus</i> skin	decoration	140
Lesser Mouse Deer <i>Tragulus javanus</i> antlers	decoration	5/pair
skull	decoration	5
Malayan Pangolin <i>Manis javanica</i> scales	medicine	12/kg
stuffed	decoration	60
Porcupine <i>Hystrix brachyura</i> and Asiatic Brush-tailed Porcupine <i>Atherurus macrourus</i> quills	decoration	?
skull	colds	2
stomach	tonic after childbirth	3.20
Reticulated Python <i>Python reticulatus</i> fat	skin disease	2/200 ml
gall bladder	fever (child)/dysentery	1.20
skin drum	music	10
skin on <i>tror ou</i> (instrument)	music	4.80
Saiga Antelope <i>Saiga tatarica</i> antlers	fever	36/pair
Sambar <i>Cervus unicolor</i> horns	decoration	40/pair
Serow <i>Naemorhedus sumatraensis</i> horns	decoration	52/pair
Siamese Crocodile <i>Crocodylus siamensis</i> skull	decoration	20
Snake skin (various spp.)	decoration	2
Sun Bear <i>Helarctus malayanus</i> bone	?	3.20/kg
nail	ornament	3
paw	decoration	50
skin	decoration/medicinal	4/45 cm
skull	decoration	44
Thamin <i>Cervus eldi</i> antlers	decoration	55/pair
Tiger <i>Panthera tigris</i> bone	rheumatism	80/kg
head	decoration	120
nail	ornament	10
skin (badly tanned)	decoration	400
skin pieces	?	various
skull	decoration	20
tooth	ornament	80
Tortoise shell (various spp.)	postpartum tonic	2
Wild Asiatic Buffalo <i>Bubalus arnee</i> horn (faked as rhino horn)	decoration	2-50
Wild Asiatic Buffalo <i>Bubalus arnee</i> horn	decoration	?
Wild Pig <i>Sus scrofa</i> tooth	decoration	2
tusk	decoration	6

Table 4. Wildlife products for retail sale in the Poipet market, February 1994. Survey by Martin

Animal	Use	Origin (province)	Average price (US\$)
Crab-eating Mongoose <i>Herpestes urva</i>	pet	many	12
Fishing Cat <i>Prionailurus viverrinus</i>	pet	Siem Reap-Oddar-Meanchey	8
Monkey (various spp.)	pet	Pursat	40
Parakeet <i>Psittacula</i> spp.	pet	all	4
Pheasant <i>Lophura</i> spp.	pet	Pursat	80
Reticulated Python <i>Python reticulatus</i>	pet/skin	all	20

Table 5. Live animals for retail sale in Poipet, February 1994. Survey by Martin

each (Galster, 1994). In 1993, the two main Tiger traders in O Russei market sold two to five live young Tigers to Vietnamese traders for US\$400-US\$500 each.

Leopards *Panthera pardus* were also noted in trade (Tables 1 and 4). In 1994, a small Leopard was for sale at US\$30 at Ban Long Central market and two skins at O Russei market, while one or two Leopard skins were seen for sale at the market on two visits, several months apart, in 1995 (Anon., *in litt.*, February 1996). One live, year-old Clouded Leopard *Neofelis nebulosa* was on sale at the Central market of Phnom Penh and two skins from the species were on sale at the Central market of Ban Long for US\$50 each, in 1994.

Crocodiles

Siamese Crocodile *Crocodylus siamensis* skin products on sale in Siem Reap come from crocodile farms in the town, but also from crocodiles in Tonle Sap Lake. Traders at Poipet market reported that live young Siamese Crocodiles were being smuggled to Thailand to supply crocodile farms (Nash, 1992c), but according to one trader this was no longer such a profitable activity as it had been prior to 1993. Before 1993, when the price of crocodiles was US\$200-US\$300 per animal, one trader claimed to have imported crocodiles from Vietnam and sent them to Thailand, via Phnom Penh. Nonetheless, Siamese Crocodile products were observed for sale on the outskirts of Poipet in 1994 (Table 4), and a trader in Ban Long claimed to ship crocodiles to Vietnam regularly.

A crocodile farm has existed in Phnom Penh since 1979, when the price of a three-metre adult was said to be the same as in 1994, namely US\$5000. The farm reports selling about 300 live crocodiles a year, mainly to Thai and Malaysian customers, for whom it claims export permits can be arranged. Although Cambodia is not a Party to CITES, importation of this Appendix I-listed species to Thailand or Malaysia would likely be illegal. At the time the farm was visited, it held about 40 adult animals, believed to be *C. siamensis*, all taken from the wild around Battambang and Siem Reap.

Deer

Like cattle horns, deer antlers are prized in Cambodia as decorative objects and trophies, but also used in medicines. There were many deer parts for sale at O Russei, usually from animals killed in the mountainous northeast provinces of Ratanakiri, Mondolkiri and Stung Treng. The owners of a shop in Lomphat reported receiving 100-300 whole Sambar *Cervus unicolor* and other deer per month. At US\$200-US\$300 per set, naturally-shed Sambar antlers were the most expensive horns or antlers found on sale in Cambodia, apart from Kouprey horns. Five to ten sets of Sambar antlers, otherwise priced at US\$100-US\$200 per set, were seen for sale at the Central market of Ban Long, as were 14 sets of Thamin *Cervus eldii* antlers, at US\$150-US\$200 per set, and one set of Indian Muntjac *Muntiacus muntjak* antlers. As mentioned above, one stall was selling Sambar meat, together with Banteng meat, in quantities of about 20 kg each week. Four sets of Sambar antlers were selling at Hat Lek market for between Bt1000-Bt1800 (US\$40-US\$72) per set.

Officials in Cambodia reported that Thamins and Sambars were usually hunted with dogs in the wake of forest fires, which are sometimes started deliberately. Some hunters apparently use torches to hunt at night and can catch more deer on moonless nights.

Elephants

About 2000 wild Asian Elephants remain in Cambodia (Kemf and Jackson, 1995): only the males bear tusks. Elephant hunting takes place, apparently not generally for meat, but for ivory: at least in Ratanakiri Province, minority peoples have an ancestral taboo against eating elephant meat. Moreover, it would seem that live elephants are valued in Cambodia for work in the forests, including for transportation of wildlife: one farmer, who had bought a young elephant for a sum equivalent to US\$250, had been offered 18 times that amount for the seven-year-old animal in 1994, but refused to sell it. Several individuals in Ratanakiri, however, mentioned the practice of killing elephants to draw Tigers to the carcass.

Elephant ivory has been carved in Cambodia for at least several hundred years, although only a few study the art of carving now. Over recent years, very little raw ivory has been available for this purpose at the Beaux Arts University, according to Por Tieng Doy (pers. comm., 1994). At the *Centre de la Production d'Objet d'Arts Cultures*, where the art of ivory carving may also be learned, students used only two kilogrammes of ivory in 1993, and in Battambang, two ivory craftsmen, who claimed to be the only ones in the town, reported using four to five kilogrammes of ivory each year.

The 30 or so craftsmen carving elephant ivory in and around Phnom Penh, work part-time owing to the scarcity and high cost of the tusks, most of which are reported to come from wild elephants in northeastern Cambodia.

Carvers in one of the larger ivory workshops spend approximately 16% of their working time carving ivory, according to the manager. Most ivory carvings are ornamental and small (Table 2), which allows them to be easily concealed in luggage belonging to foreign buyers, who are said to be mainly Thai, Japanese and French.

Good quality ivory was purchased by carvers for the equivalent of US\$340 per kg in 1992 and US\$400 per kg in late 1993. Small, cracked pieces were only US\$100 per kg. In 1994, good quality ivory could fetch over US\$400 per kg. Carvers in Battambang reported buying raw ivory from Phnom Penh and Lao PDR for US\$150 per kg in 1991, a price which rose to US\$350 per kg by 1993, and has since remained stable. Once carved, the ivory may sell to a retailer for US\$5 for a flower bud ornament, for example, and in turn to the next buyer for US\$15-US\$25 retail. The large mark-up in Battambang may be owing to a small turnover in the shops, as Thai and American tourists are reported to buy directly from the carvers.

Among the retail shops visited in Phnom Penh in 1994, the most common wildlife product for sale was elephant ivory. Ivory was also for sale at Battambang, and at Poipet market and Siem Reap main market where it was also observed by Salter (1993). However, only two of the 77 jewellery shops in Siem Reap, and six of the many jewellery shops in Battambang were selling ivory (in the form of trinkets, such as flower buds and Buddhas). Not all the "ivory" encountered during research visits was genuine: in 1992, Nash observed fake "ivory" made from animal bone, for sale at Poipet market (Nash, 1992c).

Some ivory is said to be smuggled into Lao PDR by Cambodian traders, and then transported to Thailand. In 1992, Lao PDR officials confiscated a young elephant from Cambodian traders who were planning to sell it in Thailand (Baird, 1993b).

Fishes

Fish is the single most important source of protein in the Cambodian diet (40-60%) with average yearly consumption ranging from 13 kg-16 kg per person, an amount significantly lower than the 1960s average of 20 kg-25 kg (Phipps, 1994a). There is little information available on the scale of fishing, the species caught, or the trade, but it is known that large shipments of freshwater fish are reported by Cambodian fisheries officials to be delivered for sale in Thailand (Phipps, 1994a). High-value species are known to be exported to Thailand via Lao PDR (possibly 750 t-1500 t of fish to the latter in 1992) and, conversely, Cambodians import small quantities of fish from Lao PDR (Phipps, 1994a; Nash, 1992b; Baird, 1993b). Baird (1994) noted that the CITES Appendix I-listed Giant Catfish and Jullien's Golden Carp are traded to Lao PDR and Thailand, for food (Table 6).

Latterly, fishing methods likely to be more damaging than traditional methods have been introduced in Cambodia. Fishers have developed traps to catch fish in streams feeding the Mekong River. This is an apparently



Despite the presence of land mines and the threat of ambush by the Khmer Rouge, people from all over Cambodia bring shot, snared or poisoned wildlife, by road to Poipet on the Thai border to sell for ready cash.

lucrative practice, judging from the R1 500 000 (US\$600) paid for the seasonal fishery to provincial Stung Treng officials by three Cambodians owning the concession at the mouth of Hooai Talat stream. Similarly, one Lao trader reportedly paid the concession-owners an advance of Bt100 000 (US\$4000) for exclusive buying rights for fish caught. The seasonal catch from this stream is 20 t-30 t, much of which may be sold to Lao traders. This type of fishery is said to have been in existence for the past three to four years (Baird, 1993b).

Cambodians are known to use explosives to catch fish along part of the border between Lao PDR and Cambodia, between November and June each year, when river levels are low. Many fish killed or injured by explosives either sink to the bottom or cannot be retrieved. Most of the fish caught by this method are exported to Lao PDR as dried or fresh fish (Baird, 1993b). King Norodom Sihanouk, Head of State in Cambodia, has announced his opposition to fishing with explosives in Cambodia and stated he would work to bring an end to this destructive practice (Casey, 1993).

Frogs

Frogs form a significant part of the diet in many of the poorer rural areas of Cambodia. However, heavy exploitation, combined with increased use of pesticides could quickly reduce populations of frogs (Phipps, 1994a). A remarkable seasonal trade of as many as 25 000



© E. B. Martin

bullfrogs, daily, across the border from Cambodia to Thailand was noted at the Poipet-Aranyaprathet crossing during October 1992. The trade appeared to comprise one species only of the genus *Rana*. Frogs were collected by hand in Cambodia and arrived, apparently every afternoon during the wet season, at the market in Aranyaprathet, where they were sold, live, to Thai middlemen. Thereafter, the frogs were transported by road to Bangkok, for sale there the following day (Nash, 1992c).

Monitor Lizards

Water Monitor Lizards *Varanus salvator* are caught in the northeastern provinces. They are sent to Phnom Penh, where traders at the O Russei market pay the equivalent of US\$3.50 per kg, selling them to middlemen for US\$3.80 per kg for export live to Vietnam (Table 1). Alternatively, they are transported from the northeastern catchment areas directly to Vietnam where the skins are processed; some may also be sent to China. According to the O Russei market traders, this species has recently become scarcer owing to the demand in Vietnam.

In Ban Long Central market, four monitor lizards *Varanus* were found on sale for R5000 (US\$2) per kg. Their owner claimed to ship 100 kg of monitor lizards to Vietnam every fortnight, often himself, by truck. In Lomphat, one shop stocked seven monitor lizards at the beginning of the rains (May), in 1994. The vendor sold the animals to Ban Long, for R1000 (US\$0.40) each.

Pangolins

Malayan Pangolins *Manis javanica* are obtained from most parts of Cambodia. Dried pangolins and their claws were observed on sale at O Russei market (Table 1) and three stuffed pangolins were also seen in souvenir shops in Siem Reap, for US\$25 each. A trader at Ban Long Central market gave the price of live pangolins as R5000 (US\$2) per kg. Five stalls were selling pangolin parts at Tuol Tom Pong market in Phnom Penh. Besides selling pangolin meat, one restaurant in Phnom Penh sells the scales and bottles of blood, said to improve the blood circulation of the taker (Table 7). Restaurateurs purchasing pangolins paid and then charged varying prices (Table 7). Thai customers pay Bt500 (US\$20) for skin and scales, which has resulted in higher prices for these products in Cambodia.

Porcupines

Traders in O Russei market sell about 50 porcupines (Malayan Porcupine *Hystrix brachyura* and possibly Asiatic Brush-tailed Porcupine *Atherurus macrourus*) a day, a few being exported to Vietnamese and Cambodians living in the USA or France, but most being consumed locally (Tables 1 and 4). Seventeen porcupine stomachs (used medicinally - see section *Wildlife as medicine*), quills (for good luck charms) and skin (use unknown but probably medicinal) were seen for sale at O Russei. In 1993, an unknown number of porcupine gall bladders were found for sale at Siem Reap's main market (Salter, 1993), and 75 porcupine stomachs were observed on sale at Poipet market by Nash (1992b).

Rhinoceroses

Rhinoceroses are probably extinct in Cambodia and imports of rhino horn from neighbouring countries would be extremely surprising, since there is little demand in Cambodia for such an expensive medicinal product. Both Nash (1992c) and Martin were informed by wildlife traders that no authentic rhino products were available. Fake rhino horns made from cattle horn were observed on sale at Poipet in 1992 (Nash, 1992c) and at the same market in 1994, those made from Wild Asiatic Buffalo horn were priced from US\$2-US\$50. Martin observed no genuine rhino horn on sale in 1994, the only country in Southeast Asia surveyed by him for which this has been the case.

Slow Lorises

Slow Lorises were found by several investigators to be very common at wildlife sales points. They are sold dead, usually dried, for use in medicinal tonics. Bezuijen found that dried bodies of this species were the most numerous wildlife item on sale during his one-day visit to O Russei in 1993 (204 bodies), while Baird also recorded large amounts of these animals, dried, at the market (Bezuijen, 1994; Baird, 1993a). Slow Loris bodies were

still the most common animal product on sale at O Russei in 1994 (Table 1). In 1993, dried Slow Lorises were found at Siem Reap (Salter, 1993), and Broad found approximately 120 dried specimens on one day at O Russei market in 1994 (Broad, 1994). Slow Lorises, at least in Ratanakiri, are said to be hunted by minority tribes using crossbows.



Dried Slow Lorises *Nycticebus* stretched on sticks, O Russei market, Phnom Penh.

Snakes

Snakes and snake products were found to be the second-most abundant type of animal, after Slow Lorises, on sale at O Russei market. More pythons were traded at west Neak Lung market (Table 3) than any other animal. In 1993, 4.4 t of pythons were sold at Neak Lung, where about 20 stalls sell snakes during the rainy season, when they are most plentiful (Salter, 1993). Additionally, approximately 200 kg-300 kg of pythons, from every province in Cambodia, are sold in the capital every day. One shop in Lomphat reported selling 500 kg of pythons per year, although, by contrast, relatively few snakes were on sale at Neak Lung market in May 1994, at the end of the dry season. However, one King Cobra *Ophiophagus hamah*, amongst other cobras, was being offered for sale by a trader who reported selling a daily average of one or two cobras. Cobras on sale in Phnom Penh are caught mostly from Lake Tonle Sap, and some at least are destined for the table (Table 7).

Although used in local medicines (see section: *Wildlife as medicine*), most pythons are exported live to Vietnam. An unrecorded number of pythons were intercepted at the Vietnamese border by Cambodian Customs officials in November 1993. Cobras, too, are exported to Vietnam: during the wet season, trade is very active and at least 200 kg are exported daily from Phnom Penh.

Wholesalers in Phnom Penh pay the equivalent of US\$2 per kg for pythons and US\$12 per kg for cobras, and sell them for US\$2.60 and US\$13 per kg, respectively, for export to Vietnam. Python skin belts were observed on sale for US\$8 at Neak Lung market, and bottles of wine containing cobras were displayed at US\$7 each. The King Cobra observed at Neak Lung market was on sale for R 15 000 (US\$6).

Tortoises and Turtles

According to several traders, tortoises are collected all over Cambodia and brought to Phnom Penh. These are probably Elongated Tortoises *Indotestudo elongata* as this is the only species known to be native to Cambodia, but Impressed Tortoise *Manouria impressa* and Asian Brown Tortoise *M. emys* may also occur in Cambodia (Jenkins, 1995). Tortoise heads were seen to be common at O Russei by a visitor to the market in May and December 1995 (Anon., *in litt.*, February 1996). Tortoises have by far the largest turnover, by weight, among wildlife on sale in Neak Lung: in west Neak Lung, approximately 9.5 t of tortoises were sold in 1993, while in east Neak Lung, about 10 kg of tortoises were sold a day in 1994. They are transported by taxi or bus to Phnom Penh, from where two to four tonnes are exported daily, by boat, bus or taxi to Vietnam, and sometimes to Thailand and China.

There is some domestic trade in turtles: close to Phnom Penh, near Bassat Marsh, roadside cafes were visited by hawkers selling dead turtles with their eggs exposed. On two occasions in December 1995, 30 to 40 animals were seen, each weighing about 1 kg-2 kg. Presumably these turtles and their eggs do not keep for longer than a day, so it may be assumed that they were quickly sold (Anon., *in litt.*, February 1996).

Prices of tortoises and tortoise products at Cambodian markets are recorded in Tables 1, 2, 3 and 4. Prices of Cambodian softshell turtles were recorded as K400 per kg (US\$0.57 per kg) to a Lao trader in February 1994, who sold them on for K1800 (US\$2.60) per kg (Baird, 1994). Softshell turtles apparently fetch more in Stung Treng Province than in southern Lao PDR, however (Baird, 1994). Turtles (species unknown) were reported to cost R5000 (US\$2) wholesale per kg in Lomphat in 1994. Cambodian and Vietnamese middlemen usually bought tortoises from collectors for three to four US dollars per kg, live weight, depending on quality, a price corroborated by investigations by Broad (1994).

Most chelonians exported from Cambodia are destined for Vietnam, at least in the first instance. One trader in 1994 reported shipping one tonne of chelonians from Cambodia to Vietnam every month, and one shop in Lomphat reported trading 500 t-800 t of turtles per year for sale to Vietnam. Mundkur *et al.* (1995) observed that chelonians, which comprised the majority of wildlife seen in trade in Stung Treng Province, were mostly exported direct to Vietnam. The volume of the trade was reported to exceed several tonnes per month. Customs officials at Moc Bai, on the border with Vietnam, reported confiscations of four large shipments of chelonians (1500 kg, 200 kg, 100 kg, and 300 kg) between November 1993 and the end of January 1994. All shipments were thought to have originated from O Russei market in Phnom Penh, and presumably represent a fraction of this cross-border trade.

Jenkins (1995) records Cambodian species of freshwater chelonians thought or known to be involved in local trade and for export. Hawksbill Turtles *Eretmochelys imbricata* have been noted in trade from Cambodia to Vietnam (TRAFFIC Bulletin 15(2):29).

Wild Cattle

Among the parts of several endangered species of wild cattle seen at Poipet market were two pairs of horns from female Koupreys attached to their skulls (Table 4). The owner said they had originated from Mondolkiri Province and they may have been the same horns seen by Nash in 1992 (Nash, 1992b). Although the Kouprey is one of the rarest species in the world, the price for these horns was US\$400 per pair, much cheaper than other recorded prices in Southeast Asia. For example, as much as US\$6000-US\$8000 was asked for a female pair on the Thai-Lao border in 1991 (Srikosamatara *et al.*, 1992). It should be noted that horns of other animals, for example, Banteng, are used to fake male Kouprey horns, but to a trained eye, these are possible to discern (Nash, *in litt.*, February 1996).

Gaur *Bos gaurus* horns were found on sale in several locations visited by the authors (Tables 1, 2 and 4) and it is reported that considerable numbers of Gaur horns were on sale at O Russei during visits in May and December 1995 (Anon., *in litt.*, February 1996). One pair of traders in Lomphat claimed to have bought an average of 40-60 Gaur horns per month, between 1988 and 1993. They

paid US\$20 per set and had two sets of male Gaur horns at the time of the visit in 1994. At the Central market in Ban Long, two sets were on sale at US\$50 for a female pair and US\$150 for a male pair, while at Hat Lek market, five sets of male Gaur horns were on sale at prices between Bt4000 and Bt5000 (US\$100-US\$200).

Horns of Wild Asiatic Buffalo and Banteng were also observed on sale (Tables 1, 2 and 4). Several Banteng horns were noted at O Russei in May and December 1995 (Anon., *in litt.*, February 1996) and were reportedly traded in quantities of between 60 and 90 a month from 1988-1993 by just one couple in Lomphat. At the Central market of Ban Long, three sets of Banteng horns were on sale and also two sets of Wild Asiatic Buffalo horns at US\$250 per set.

A dried meat stall at Ban Long Central market sold Banteng meat for R8000 (US\$3.20) per kg in May 1994. The stallholders had 20 kg-30 kg of mixed Banteng and Sambar *Cervus unicolor* meat displayed and said they sold an average of 20 kg per week during the dry season (dried meat is only available during the dry season, as it cannot be cured during the wet months). Occasionally, buyers from Phnom Penh would purchase all the stock in the town at one time. Several individuals indicated that fresh meat was regularly available but none was seen by the authors, probably because the surveys were carried out at the end of the dry season when hunters are preparing for the planting season.

Other animals

Products from other species, including Serows *Naemorhedus sumatraensis*, Wild Pigs *Sus scrofa*, hares, toads, monkeys and otters were seen in varying quantities during investigations in Cambodia (see Tables).

USES OF WILDLIFE IN CAMBODIA

Wildlife as food

Cambodians are especially dependent upon fish as a source of protein, but pythons, tortoises and many types of mammal are also eaten. A food and nutritional survey conducted in Cambodia by UNICEF found foraging for wild food to be an important source of protein in the Cambodian diet (T. Hamano, UNICEF, pers. comm., 1994). The survey involved 50 households in 12 villages located in the provinces of Kompong Speu, Kg Chhnam, Prey Veng, and Kampot. The findings indicated that 87.5% of households foraged for wild protein and vegetables; 40.7% consumed wild-caught protein (fish, frogs, snakes, birds) three to four times a week, compared to 21.5% who consumed domestic meats (pork, beef, chicken) or eggs (20.1%).

Hunting for food was described to investigators during their visits to Cambodia. During the *Khmer Rouge* regime, hunting of birds, monkeys and deer for food was said to be common in the area around Siem Reap, where birds

Species	IUCN Status ¹	CITES Listing
Asian Elephant <i>Elephas maximus</i>	EN	I
Asiatic Black Bear <i>Ursus thibetanus</i>	VU	I
Asiatic Brush-tailed Porcupine <i>Atherurus macrourus</i>	LR	-
Banteng <i>Bos javanicus</i>	EN	-
Clouded Leopard <i>Neofelis nebulosa</i>	VU	I
Gaur <i>Bos gaurus</i>	-	I
Giant Catfish <i>Pangasianodon gigas</i>	EN	I
Indian Muntjac <i>Muntiacus muntjak</i>	-	-
Jullien's Golden Carp <i>Probarbus jullieni</i>	EN	I
Kouprey <i>Bos sauveli</i>	CR	I
Leopard <i>Panthera pardus</i>	LR	I
Malayan Pangolin <i>Manis javanica</i>	LR	II
Monitor Lizard <i>Varanus</i> spp.	-	III
Malayan Porcupine <i>Hystrix brachyura</i>	VU	-
Reticulated Python <i>Python reticulatus</i>	-	II
Sambar <i>Cervus unicolor</i>	-	-
Serow <i>Naemorhedus sumatraensis</i>	-	I
Siamese Crocodile <i>Crocodylus siamensis</i>	CR	I
Slow Loris <i>Nycticebus coucang</i>	LR	II
Sun Bear <i>Helarctos malayanus</i>	DD	I
Tiger <i>Panthera tigris</i>	EN	I
Tortoises Testudinidae	-	II
Turtles Emydidae/Troionychidae	-	-
Wild Asiatic Buffalo <i>Bubalus arnee</i>	EN	III

Table 6. Notable species in trade in Cambodia.

¹IUCN categories: Critically Endangered (CR); Endangered (EN); Vulnerable (VU); Lower Risk (LR); Data Deficient (DD); Indeterminate (I); Insufficiently Known (K)
Source: IUCN (*in press*).

Animal	Wholesale price (US\$) (whole animal)	Retail price (US\$) (per serving)
Frog and toad	2.80	3.20
Hare	8	4
Indian Muntjac <i>Muntiacus muntjak</i>	12	4
Lesser Mouse Deer <i>Tragululus javanicus</i>	26	4
Malayan Pangolin <i>Manis javanica</i>	12	4
Wild Pig <i>Sus scrofa</i>	8	3.20

Survey by Martin

Menu item	Purchase price	Sales price	Quantity sold
Restaurant A			
Cobra Elapidac	-	R30 000/kg	2 kg/day, in season
Indian Muntjac <i>Muntiacus muntjak</i>	R120-140 000/animal	US\$6/medium dish	1-2 animals per day
Malayan Pangolin <i>Manis javanica</i>	US\$8/kg	US\$4/med. dish meat	occasionally
	US\$4/bottle of blood		
	US\$11/kg scales		
Wild Pig <i>Sus scrofa</i>	-	US\$2/medium dish	1 every 2-4 days
Rabbit	-	US\$4/medium dish	1-2 per day
Restaurant B			
Dove	R2500/bird	R10 000/large plate	20 birds/day
Indian Muntjac <i>Muntiacus muntjak</i>	R150 000/animal	R10 000/large plate	2-3 animals/day
Malayan Pangolin <i>Manis javanica</i>	R13 000/kg	R10 000/large plate	5 animals/day
Sambar <i>Cervus unicolor</i>	R15 000/kg	R10 000/large plate	5 kg/day
Rabbit	R10 000/animal	R10 000/large plate	5-6 animals/day
Wild Pig <i>Sus scrofa</i>	R45 000/kg	R10 000/large plate	4-5 kg/day

Survey by Phipps

Table 7. Wild game meat sold in restaurants in Phnom Penh, February 1994.

were still rare in the forests as a result in 1992, but are now becoming more common (Knuchel, pers. comm., 1994). In Ratanakiri Province, where hunting is not a popular activity, nor conducted on a professional scale, it is nevertheless necessary to supplement a diet based on farmed rice, with game meat. Elsewhere, animals may only be hunted if they damage crops, and in some places, for example Battambang, game meat can only be obtained if ordered from traders in advance. Most hunting takes place in the dry season, which is also the season for curing meat, but hunting for subsistence continues during the wet season. Surplus meat from hunting can sometimes be sold, depending on the area, to teams of businessmen visiting villages to buy domestic cattle, pigs and game meat.

Dried Sambar and Banteng meat is mainly destined for Phnom Penh, where several restaurants specialize in wild animal meat. The restaurant managers usually go to market several times a week to buy meat: occasionally they buy a live animal. The main markets visited by restaurateurs are reportedly in the provinces of Kompong Speu, Kompong Chhang and Kampot, close to the capital, but animals to supply the restaurant trade come also from Pursat and sometimes northeast Cambodia. Sometimes traders go to the restaurants to sell meat. The most popular meats were Lesser Mouse Deer *Tragululus javanicus* and hare, but Indian Muntjac, Sambar, Malayan Pangolin, cobra and Wild Pig were also available. At one restaurant,

Cambodians preferred Indian Muntjac meat. Most meat is usually roasted or made into soup. The majority of customers of the restaurants surveyed were Cambodian, but included significant numbers of Thais and Taiwanese.

A wholesale trade in birds, as mentioned earlier, also supplies the food market in Phnom Penh. Many birds are caught in nets in the rice fields, especially in Preh Veng Province, east of the capital, and are sold to wholesalers for just US\$0.05 each. They are plucked and cleaned, and about 700-800 are sold to restaurants each day during the dry season.

On the streets of Phnom Penh, vendors were seen selling deep-fried munias (rice birds) *Lonchura* for R150 (US\$0.15) (Nash, 1992a). The birds are skinned, lightly battered and fried whole, served with salt, chilli paste and lime juice. Everything is eaten but the legs and feet. Since the birds were skinned, the species could not be identified.

Wildlife as medicine

Medicinal shops in Phnom Penh, particularly in O Russei market, carry a wide variety of plant and animal products for traditional medicinal purposes. Customers are both Cambodian and foreign nationals. Items used include dried Slow Loris carcasses, porcupine stomachs, pangolin skin and scales, python oil, antlers, Serow horns, Tiger and other cat parts, otter skins, elephant parts, and



Rice birds *Lonchura* on sale opposite the Royal Palace, Phnom Penh.

bear gall bladders and bile. Slow Loris bodies are immersed in a liquid which is drunk by Cambodians to give energy and as part of a tonic to be used after giving birth. Consumption of "loris wine", which is mass-produced and sold at many market stalls, has dropped recently since it is rumoured to be produced without loris ingredients. Python oil is used to treat wounds, and snakes are sometimes eaten for medicinal purposes, while porcupine stomachs, including their contents, are used to prepare a postpartum tonic for women. These are often faked, however, where the stomach of a pig is substituted and stuffed with herbs.

Outside the capital, three traditional Chinese medicine shops in Battambang had no unprocessed wildlife products, only patent medicines from China and Thailand, which purport to contain wild animal products.

Wildlife as decoration

Tiger teeth, fake rhinoceros horn, elephant ivory, deer antlers, as well as other trinkets made from bone and horn, are sold as ornaments and trophies, as well as charms. Elephant ivory is often carved into flower buds and Buddhas, but the most valuable ivory curios are made from parts of tusk broken off while an elephant forages. Because the animal has not been killed, the ivory is of great spiritual value, an explanation repeated by several different individuals. Investigators were shown a small but good quality Buddha pendant carved from this so-called "sacred" ivory. Similarly, deer antlers from Thamins and Sambars used as trophies by Cambodians fetch a higher price if lost or shed naturally by the animal. Horns of Gaurs and Wild Asiatic Water Buffaloes and porcupine quills are also prized.

Cat skins are on sale as trophies in Cambodia, but are not liked by Cambodians, and are usually bought by Thais.

Wildlife as pets

Wild animals, including Indian Muntjacs, Sambars and Sun Bears are occasionally sold as pets, especially to more affluent customers. Brahminy Kites on sale were possibly to be kept as pets, also (Anon., *in litt.*, February 1996). One live bear had been kept for three years by a shopkeeper visited in Ban Long and was habituated to human contact and used as a "watch dog" in the shop at night. In Ratanakiri Province, most bird hunting was said to be for peafowl, to be kept as pets.

Wildlife for export

Investigators were repeatedly informed of the export trade in wildlife from Cambodia, despite its illegality. Vietnam and Thailand were most frequently cited as export destinations.

Trade with Vietnam is doubtless facilitated by the fact that the population of Cambodia includes 1-2 million ethnic Vietnamese (Anon., 1996b; Famighetti, 1996). Most pythons are for live export to Vietnam, often for onward transit to China and Taiwan for the skin trade. Malayan Pangolins are also exported live to Vietnam, perhaps in quantities of 100 kg a day - one trader claimed to send 100-150 pangolins a month to Vietnam. Tortoises on sale in Phnom Penh are mostly for export to Vietnam and China, to be consumed there for food and medicine. Water Monitor Lizards are exported, either directly or via Phnom Penh, to Vietnam, and one trader alone was found to ship monitor lizards, cobras, tortoises and turtles to Vietnam in quantities of hundreds of kilogrammes a week. According to one shopkeeper in Ban Long, Slow Lorises are both imported from and exported to Vietnam, depending on supply and price. Live Tigers are sold to Vietnamese by traders in Phnom Penh, while bones are often exported to Vietnam or Thailand, and one trader was found to ship Tiger skins to Vietnam.

The border areas of Moc Bai in Svay Rieng Province, together with those of Ratanakiri and Mondolkiri Provinces, are the major crossing points into Vietnam. One regular trader in Ban Long gave the route for most wildlife shipments from Ratanakiri Province as Ban Long to Oyadau, to Pleiku, to Hanoi, to China (Phipps, 1994a). A Cambodian Customs official interviewed asserted that the ultimate destination of wildlife exported to Vietnam was China.

Cat and python skins on sale in Cambodia are bought chiefly by Thai customers, as are many deer and cattle trophies. Thailand was found to be the destination for one exported Tiger skin (see section: *Cats*), and the main customers of one shop in Battambang selling muntjac antlers and elephant bone carvings were Thais. Thais appear to be among the principal buyers of elephant ivory in Cambodia (as well as Japanese, Americans and French) while Cambodia was cited by Thai police as the main source for bears found in July 1991 at a farm in Thailand that sold bears and bear parts to tourists (Mills and Servheen, 1991). Thai and Chinese men purchase the

cobra wine found on sale at Neak Lung, and prices paid for pangolin skin and scales in Thailand have driven up the local asking prices in Cambodia. Fish and frogs from Cambodia were found to be exported to Thailand in considerable quantities.

Most of the wildlife exported from Cambodia to Lao PDR, including fish, is ultimately destined for Thailand (Phipps, 1994a), while the most common item sold in souvenir shops at Siem Reap, the *tror ou*, a traditional stringed instrument made using python skin, sold for US\$4 in 1995, presumably to foreign tourists.

ENFORCEMENT

Jurisdiction responsibilities relative to the *Forest Practice Rules (Kret No. 35)*, which prohibit hunting of all wildlife and trade in "new" wildlife products, lie with the Forest Department, which employs about 400 personnel, just over half of whom are in provincial Forest Offices. Although the Forest Department has a Wildlife Protection Office in Phnom Penh, whose main function is to enforce the hunting ban, with a small staff of 14 only a minimal level of action is possible (Olivier and Woodford, 1994). Different Government agencies have different understandings of what is permissible and what is not and only the Customs Department in certain parts of the country appears actively involved in wildlife protection.

There appears to be some awareness of legal restrictions applying to the use of wildlife: some market stallholders were nervous about keeping live animals openly because of the risk of confiscation, and one Vietnamese lorry driver who had previously transported tens of tonnes of wildlife on a regular basis to Vietnam in 1993 had now switched to transporting fruit and passengers, claiming that Customs had begun to enforce the wildlife export ban in 1994 only; not only did they confiscate wildlife in illicit traffic, but also fined transporters R50 000 (US\$20). Passage between Cambodia and Vietnam was said to have been very easy prior to the election of the current Royal Government of Cambodia in 1993, since when Vietnam has tightened regulations for Cambodians crossing its border. People living in border areas have an identity card and may pass freely, while others require a passport and visa. Since 1992, Customs officials have been checking the principal highway linking Phnom Penh with southern Vietnam and have intercepted some illegal exports. A Customs official reported that little wildlife was crossing the border now, owing to effective confiscations. According to Customs officials at Bavet, 600 kg of turtles and tortoises were confiscated at the Moc Bai border post during January 1994 and 1500 kg during November 1993 and, in 1992 and 1993, some 2000 monkeys, five large baskets and 128 sacks of tortoises, 14 large baskets and 15 sacks of cobras and two large baskets of ducks were confiscated.

One Cambodian Government official felt that cross-border wildlife trade reached a peak between 1991 and

1993, a period of political and economic instability. While some enforcement of wildlife laws, at least across the border to Vietnam, seems to be noticeable, it was found during research for this report that *Forest Practice Rules (Kret No. 35)* were apparently rarely enforced. During the 1994 survey, only one person commented that she might be breaking the law. Nobody else apparently feared talking about their trade or was reluctant to have photographs taken. Local people use numerous unofficial border crossings to Vietnam, and Customs officials will only stop wildlife shipments when three or more of them are on duty, since wildlife smugglers have a reputation for enforcing their will, and sometimes employ armed guards to escort their shipments. One trader, who admitted to shipping diverse types of wildlife to Vietnam in significant quantities, three times a month, noted that the Vietnamese were stricter about checking vehicles when fighting intensified between the Government and the Khmer Rouge, but that because the trader was ethnic Vietnamese, he was able to cross the border unimpeded. Customs officials have the power to confiscate only. No fines or other punishments may be administered directly, although fines may be imposed later by the courts. A substantial number of Vietnamese are located in Ratanakiri Province and in many ways the ties between provinces and their neighbours are stronger than those between provincial authorities and central Government (Phipps, 1994b). Moreover, disagreements between Cambodia and its neighbours persist as to the location of national borders. According to local officials, the Cambodian border control station at the official crossing from Ratanakiri Province to Vietnam is located five kilometres within the internationally-recognized Cambodia-Vietnam boundary (Phipps, 1994b).

The border between Cambodia and Thailand is said, by one former trader, to be crossed freely, although Nash (1992b) noted that in 1992 the Thai Government had moved to reduce wildlife trade at the Poipet-Aranya-prathet border point, at least.



Wildlife products for sale at O Russei market, Phnom Penh.

© TRAFFIC Southeast Asia

CONCLUSION

Cambodia's diverse native fauna includes many which are rare or threatened, including Kouprey, Gaur, Thamin, Clouded Leopard, Tiger, Giant Catfish and Asian Elephant. Population data for these do not exist, but hunting for subsistence purposes is being replaced by a steadily increasing harvest for commercial trade in wildlife products, to supply markets in Thailand, Vietnam, China, and beyond. There is little doubt that some of the rarest mammals in Southeast Asia are threatened by over harvesting in Cambodia.

In March 1994, the first aerial wild animal survey ever in Cambodia was carried out in Mondolkiri Province to look for Koupreys. None was seen during 35 hours of flying, but other rare mammals were recorded: 97 Bantengs, 13 Thamins and four Gaurs; no wild elephants were seen. The authors of the survey report concluded, "These results suggest that the large mammal populations of eastern Cambodia have undergone serious decline, and that species such as wild cattle and, in particular, Asian elephant probably occur in the areas at far lower densities than previously estimated" (Olivier and Woodford, 1994). One Cambodian official, similarly, referred to a part of Svay Rieng Province which, before 1970, contained many wildlife species, including Tigers, Sambars and muntjacs, but which now was home only to Wild Pigs, rabbits and a few turtles. Nonetheless, investigators visiting Cambodia's wildlife markets from 1992-1995 repeatedly found incidence of trade, much of it for export, in many rare CITES Appendix I-listed mammals, in contravention of Cambodia's national legislation.

Besides the apparent decline in some wild mammal populations, the illegal shipments of fish out of Cambodia, in conjunction with destructive fishing practices, are particular matters for concern, since they relate to one of the most important staple foods in Cambodia, and inland fisheries are reporting a decline in catch-per-unit effort (Phipps, 1994a). The scale of reptile exports, many of which are CITES-listed, is seemingly largely unrestricted and may pose a major threat to certain species.

The paucity of information on the status of the country's wild fauna and flora is a major handicap to developing appropriate legislation for the effective regulation of the trade. Although some officials in Cambodia acknowledge the threat to Cambodia's native fauna posed by its large-scale trade, enforcement of wildlife legislation is a sensitive issue, and is impeded by villagers' feeling of distance from central Government and their dependence on wildlife resources for their livelihood. There is a need to improve the economic situation of rural Cambodians before they may be expected to turn from wildlife trade as a means of livelihood. This will not be simple in a country where alternative employment opportunities are scarce, as sizeable areas of Cambodia cannot be used for agriculture owing to the presence of land mines and there are few jobs in industry. However, given the high level of dependence of Cambodians on their

native wild animals and plants, critical to the diets of the poorest of Cambodia's poor as well as for trade purposes, ensuring sustainable levels of use of Cambodia's natural resources is all the more necessary. Moreover, any potential long-term contribution to Cambodia's economy of a sustainable trade in wild fauna and flora is presently being diminished by smuggling of its valuable natural resources.

RECOMMENDATIONS

- Basic population data for species of fauna (and flora) in Cambodia are lacking: more surveys of wildlife are needed, especially in parts of Cambodia not yet investigated, and also in the provinces where the highest density and diversity of wildlife are thought to exist, for example, Ratanakiri, Pursat and Stung Treng.
- Given the lack of financial and human resources, the Government should focus its attention on improving the morale and capacity of existing wildlife protection staff if areas with threatened populations of wildlife are to be better protected.
- Existing forestry and fishery legislation needs to include a conservation focus and provide effective regulation of any wildlife harvests permitted. Jurisdiction needs to be more clearly defined and interagency co-operation expanded.
- In the longer term, new legislation will be needed to strengthen the hunting and wildlife trade laws with stronger penalties for those breaking such laws.
- Also in the longer term, the number of Government officers involved in implementing wildlife laws should be increased and their training in identification of wildlife species addressed.
- Cambodia should consider joining CITES as a matter of urgency, but this will only be an effective step if domestic legislation, allocation of manpower to enforce it, and Government commitment to the Convention are addressed.
- Education and awareness activities should be initiated first within the Government and then expanded to the general public. An education campaign to inform traders and consumers of the illegality of trade in live wild animals, game meat, and other animal parts which are not "old" stock is necessary, if compliance with the law is to be expected.
- The Government needs to place a higher priority on investigation of wildlife trade malpractice in order to improve law enforcement. To combat smuggling, the Government needs to co-operate closely with Lao PDR, Thailand and Vietnam.



Slow Loris *Nycticebus coucang*.

ACKNOWLEDGEMENTS

The authors wish to thank David Ashwell, Por Tieng Doy, Uy Kosal, Philippe le Billon, James Mellon, Rob Olivier, Chhim Somean, Nate Thayer and Lic Vuthy for all their help in supplying information on the trade in wild animals in Cambodia, and Lucy Vigne for her assistance. The map was created by Alastair Grenfell of the World Conservation Monitoring Centre Biodiversity Map Library.

REFERENCES

- Anon. (1940). *Journal Officiel de l'Indochine* 20:786.
- Anon. (1988). *Forest Practice Rules (Kret No. 35)*. Council of Ministers, 25 June 1988.
- Anon. (1996a). *World Resources: A Guide to the Global Environment. The Urban Environment 1996-97*. World Resources Institute, Oxford University Press.
- Anon. (1996b). *Asiaweek*. January.
- Baird, I. (1993a). Logging and lorises in Cambodia. *IPPL News* 20(2): 19-20.
- Baird, I. (1993b). Wildlife trade between the southern Lao PDR provinces of Champasak, Sekong, and Attapeu and Thailand, Cambodia and Vietnam. Field report No. 3. TRAFFIC Southeast Asia.
- Baird, I. (1994). Freshwater fisheries in southern Lao PDR and north-eastern Cambodia and the fish trade, with special reference to *Probarbus jullieni* and *Probarbus labeamajor*, between north-eastern Cambodia, southern Lao PDR and Thailand.
- Bezuijen, M.R. (1994). Observations on the trade in wildlife products in the medicine shops of Street 166, Phnom Penh, Cambodia. Unpublished report to the IUCN Cambodian Liaison Office.
- Broad, S. (1994). Trip report: Phnom Penh, Cambodia, 24-27 April 1994. Unpublished report. TRAFFIC Southeast Asia.
- Broad, S. and Phipps, M. (1994). Guidance on the accession of the Kingdom of Cambodia to CITES: a report by TRAFFIC Southeast Asia.
- Casey, E. (1993). Sihanouk wants fishing with explosives to stop. *Bangkok Post* August 25, Bangkok.
- Chandler, D.P. (1993). *A History of Cambodia*. Allen and Unwin, St Leonards, Australia.
- Davies, R. (1993). Rape of Cambodia: the timber plunder economy. *Phnom Penh Post* 2(15), 16-29 July.
- Famighetti, R. (ed.) (1996). *The World Almanac and Book of Facts 1996*. World Almanac Books, Mahwah.
- Galster, S. (1994). *Crime Against Nature*. Endangered Species Project, San Francisco, California.
- Jenkins, M.D. (1995). *Tortoises and freshwater turtles: the trade in Southeast Asia*. TRAFFIC International, Cambridge.
- Kanter, J. (1994). Smugglers, Government in Sre Ambel Bay firefight. *The Cambodia Daily* 2(87), 20-22 May.
- Kemf, E. and Jackson, P. (1995). Asian Elephants in the wild. WWF Species Status Report. WWF International, Gland.
- IUCN (in press). *1996 IUCN Red List of Threatened Animals*. World Conservation Monitoring Centre, Cambridge, UK. IUCN, Gland, Switzerland, and Cambridge, UK.
- Li, W., Fuller, T.K. and Wang, S. (1996). A survey on wildlife trade in Guangxi and Guangdong, China. *TRAFFIC Bulletin* 16(1): 9-16.
- Mills, J.A. and Servheen, C. (1991). The Asian trade in bears and bear parts. TRAFFIC USA.
- Mundkur, T., Carr, P., Sun Hean and Chhim Somean. (1995). *Surveys for Large Waterbirds in Cambodia, March-April 1994*. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.
- Nash, S. (1992a). Trip report, Phnom Penh, Cambodia: 10-14 May 1992. Unpublished report. TRAFFIC Southeast Asia.
- Nash, S. (1992b). Trip report, Poipet, Cambodia: 20 October 1992. Unpublished report. TRAFFIC Southeast Asia.
- Nash, S. (1992c). Trip report, Aranyaprathet, Thailand: 18-19 October 1992. Unpublished report. TRAFFIC Southeast Asia.
- Olivier, R. and Woodford, M. (1994). *Aerial surveys for kouprey in Cambodia*. IUCN Species Survival Commission. IUCN, Gland, Switzerland and Cambridge, UK.
- Phipps, M. (1994a). Wildlife trade control in the Kingdom of Cambodia: a policy analysis for TRAFFIC Southeast Asia. Unpublished report.
- Phipps, M. (1994b). Cross-border wildlife trade in Ratanakiri Province, Cambodia. *IBRU Boundary and Security Bulletin* October, 1994.
- Salter, R.E. (1993). Zoning and environmental management plan for Angkor: background report on wildlife. Unpublished report to IUCN for UNESCO Cambodia.
- Srikosamatarata, S., Siripholdej, B. and Suteethorn, V. (1992). Wildlife trade in Lao PDR and between Lao PDR and Thailand. *Natural History Bulletin of the Siam Society* 40:1-47.
- Stiles, D. and Martin, E.B. (1994). New war in South East Asia. *Swara* 17(5):19-21.
- Esmond Bradley Martin, PO Box 15510, Mbagathi, Nairobi, Kenya.
- Marcus Phipps, National Representative, TRAFFIC East Asia-Taipei.