

The trade in bear parts from Myanmar: an illustration of the ineffectiveness of enforcement of international wildlife trade regulations

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Abstract We assessed the effectiveness of national and international wildlife trade regulations in Asia by surveying four wildlife markets in Myanmar for bears and bear parts. Bears are protected in Myanmar and neighbouring countries, and are included in CITES Appendix I, precluding international trade. Three of the four wildlife markets were situated at the border with neighbouring countries (China and Thailand) whereas the fourth, situated in Myanmar's interior, also catered to international markets. During seven checks (1999–2006) we recorded 1,200 bear parts, representing a minimum of 215 individual bears. Most items were from Asiatic black bears *Ursus thibetanus* but also sun bear *Helarctos malayanus* parts were offered for sale. There were significant temporal and spatial differences in what items were offered for sale. Prices were low (USD 4–40 per item) and the total monetary value of the items for sale was USD 6,500–9,500 (not including gall bladders). Carcasses, skulls, canines, paws, claws, whole skins, pieces of skin, gall bladders and derivates, were openly displayed, with vendors being frank about prices, origin, and potential buyers. Only in the interior were prices quoted in the local currency; at the other three markets currencies of the neighbouring countries were used. Legal (international) trade in bears or bear parts from Myanmar is virtually non-existent, and the observed trade in bear parts strongly indicates a serious lack of enforcement effort. International trade in bear parts from Myanmar is significant, and open, and we conclude that the enforcement of wildlife trade regulations, at least when they concern bear species, have by and large failed.

Keywords CITES · Wildlife trade · Southeast Asia · *Ursus thibetanus* · *Helarctos malayanus*

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Introduction

Unregulated wildlife trade is a huge business affecting thousands of threatened taxa worldwide. One of these are the bears, where the illegal hunting of the animals, and trade in their parts and derivatives are a major challenge in their conservation. Most bear species have experienced population declines over recent decades (Williamson 2002), and while habitat loss is a major cause, illegal and unregulated hunting and trade also play a major role in the decline of bear populations.

A significant part of the worldwide trade in bear parts is destined for markets in China, suggesting that trade may pose a particularly severe threat to Asian bears. Indeed, trade in bear parts has been identified as a major factor in the decline of bears in Southeast Asia (Kemf et al. 1999). Especially since the Chinese currency became convertible in 1989, trade in wildlife to China appears to have expanded and internationalized, and it is feared that bears are not exempted. Myanmar (formerly Burma) is the largest country in mainland Southeast Asia. Bordering five nations, including India, Thailand and China, it is strategically located as a land bridge between South and East Asia. Two species of bears occur in Myanmar, the sun bear *Helarctos malayanus* and the Asiatic black bear *Ursus thibetanus* (Servheen et al. 1999). Compared to other Asian countries, Myanmar is still extensively forested and, given the size of the country, may still have significant populations of both bear species. However, there has been no work carried out to determine population sizes of bears in Myanmar.

Myanmar has committed to safeguard bears through national legislation and international conventions. The Asiatic black bear is listed as a 'Protected Species', the sun bear as a 'Totally Protected Species' under the Protection of Wild Life and Wild Plants and Conservation of Natural Areas Law (State Law and Order Restoration Council Law No.583/94.1994). Violation of this law, essentially by killing or harming the animal, or trading in it, can be punished with imprisonment for a term which may extend to three years (Asiatic black bear) or to seven years (sun bear) or with a fine which may extend to Kyats 10,000 or USD 450 (Asiatic black bear) or Kyats 50,000 or USD 1490 (sun bear).

With regard to regulation of international wildlife trade, Myanmar has been a Party to the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) since 1997. With Laos acceding to CITES in 2004 all countries bordering Myanmar are now Parties to CITES. Both species of bears occurring in Myanmar are listed in Appendix I of CITES, which prohibits international commercial trade of live animals, their parts and derivatives. Despite these measures to protect Myanmar's bears, illegal trade continues, both national and international, and anecdotal reports document bear parts being offered for sale at several of the country's wildlife markets (Nash 1992; Martin 1997; Martin and Redford 2000; Shepherd 2001). Many of these markets are located along Myanmar's shared borders with China and Thailand, but less so with Bangladesh, Lao PDR and India.

In order to assess the level of (international) trade in bears we surveyed four wildlife trade hubs in Myanmar, three of which were situated on the border with neighbouring countries and one, Golden Rock, in the interior. In this paper we quantify the trade in bears and bear parts at these markets, present data on their usage and monetary value, and identify the major consumers. With these data we discuss the effectiveness of especially the international trade regulations implemented by Myanmar and neighbouring (importing) countries.

Methods

We surveyed the Tachilek market, on the border with Thailand, for bear parts on three occasions in 1999 (2 days), 2000 (2 days), and 2006 (3 days), the market at Kyaik-tyio, also known as Golden Rock, twice, in 2000 (2 days) and 2006 (1 day), the market in Three Pagoda Pass on the border with Thailand once in 2006 (1 day) and the Mong La market on the border with China once in 2006 (1 day). All surveys fell in the period February to May. Each survey was conducted by the first author, with one other surveyor present, including the second author on two of the 2006 surveys.

All outlets selling wildlife parts and products were visited and all bear parts observed were recorded. As with all other wildlife, bear parts were openly on display, and there was no need to resort to undercover techniques to obtain the relevant data. We recorded the number of carcasses, canines, skulls, claws, paws, and pieces of skin, and when possible requested information on origin, price (first quote, in Thai Baht, Myanmar Kyat or Chinese Yuan, here converted to USD at black market rates at the time of the survey), and potential buyers from the vendors. Official exchange rates are typically up to 10 times less than the black market rates. The prices thus obtained are first quotes; these would most likely have gone down with bargaining, or when more than one item can be sold at a time. We did not purchase any wildlife parts or derivatives. Gall bladders said to be from bears were offered for sale in large numbers. However, since gall bladders of other mammals and fake gall bladders are known to be offered for sale as being from bears (Mills et al. 1995), we noted their presence but did not record numbers.

Cursory observations, and information provided by vendors, suggests that turn-over of bear parts is generally high. We were not able to collect firm data on turn-over, but for analysis we assume it to be less than 13 months, this being the shortest survey interval. For each market survey we estimate the minimum number of bears that had to have been killed in order to obtain the observed parts. In this we used a conservative approach, assuming that parts were perfectly distributed among all vendors.

Different body parts are sold for different purposes, including medicinal, ornamental or trophies, and charms. We hypothesise that trade in bear parts is demand-driven, and that if the four markets cater for a similar clientele, the relative proportion of body parts do not differ between markets or between years. We tested for a deviation from a homogeneous distribution of body parts with χ^2 tests, applying Yates' correction where appropriate, and accepting significance when $P < 0.05$ in a two-tailed test.

Results

Numbers and composition

One whole freshly killed Asiatic black bear cub (Fig. 1) was observed, while all other observations were of parts or derivatives. Almost all bear parts we could identify to the species level (i.e. carcasses, paws, claws and whole skins, representing 599/1,200 items), proved to be of Asiatic black bear, and only two items (one set of paws) of the sun bear. Other than this set of paws, we did not observe any parts that could not be of Asiatic black bear. Hence, given the rarity of identifiable sun bear items for sale (<0.4%) we assumed almost, if not all, other parts to be of the Asiatic black bear as well. The Asiatic black bear is said to be the most valued bear species for use in traditional medicines (Servheen 2001). Asiatic black bear parts were observed during all six surveys with about half to two-thirds

Fig. 1 Carcass of a freshly-killed Asiatic black bear *Ursus thibetanus* cub, at the Mong La wildlife market, Myanmar, February 2006. The animal was opened as to remove the gall bladder; mortis rigor had yet to set in (Photo: Chris R. Shepherd, TRAFFIC Southeast Asia)



of the wildlife vendors having one or more items on offer. In all we recorded 1,200 items representing >215 individuals. Besides these bear parts, in Golden Rock rendered fat claimed to be from bears was available. Gall bladders, said to be from bears, were present at all markets, yet we could not confirm their species-specific origin.

Number of bear parts and the minimum number of bears they represent were highest in Tachilek in 2006, and comparing this with the data collected at the same market during previous surveys (1999, 2000), may suggest an increase in the number of bears in trade. However, over roughly the same time period (2000–2006), the numbers observed in Golden Rock did not increase.

Canines and claws were the most abundantly recorded item in Tachilek and Mong La, whereas paws were most abundant in Golden Rock. The number of items for sale, and the number of specimens killed to obtain these items, varied substantially between markets (Table 1). These differences remain apparent even if we take into account the size of the market. Thus, at Tachilek, on average, each vendor had 12.6 parts for sale, representing 2.1 bears vendor⁻¹. In Mong La these figures were 2.9 parts (0.9 bear) vendor⁻¹, in Golden Rock 1.4 parts (0.3 bear) vendor⁻¹, and in Three Pagoda Pass 0.6 parts (0.6 bear) vendor⁻¹. In Tachilek significantly more, and in Three Pagoda Pass significantly less, body parts are offered for sale by each vendor than the other markets combined ($\chi^2=19.4$, df = 1, $P < 0.001$ and $\chi^2=5.0$ df = 1, $P < 0.01$ for Tachilek and Three Pagoda Pass respectively).

There was no significant inter-annual difference in body parts composition in Golden Rock (claws pooled with paws as avoid too many low expected values, $\chi^2=4.0$, df = 2,

Table 1 Body parts of Asiatic black bear, with minimal number of individual bears they represent between brackets, observed at wildlife markets, Myanmar, 1999–2006

Market and year of survey	Vendors	Carcass	Skull	Canine	Paws	Claws	Whole skin	Skin piece	Minimum number of bears
Tachilek 1999	32	0 (0)	0 (0)	present	37 (10)	70 (7)	0 (0)	0 (0)	17
Tachilek 2000	23	0 (0)	25 (25)	64 (16)	18 (5)	110 (11)	0 (0)	1 (1)	41
Tachilek 2006	31	0 (0)	14 (14)	446 (112)	9 (3)	265 (27)	0 (0)	21 (1)	126
Golden Rock 2000	27	0 (0)	8 (8)	0 (0)	29 (8)	0 (0)	5 (5)	0 (0)	8
Golden Rock 2006	24	0 (0)	7 (7)	0 (0)	22 (6) ^a	5 (1)	0 (0)	(0)	7
Mong La 2006	14	1 (1)	12 (12)	0 (0)	9 (3)	19 (2)	0 (0)	0 (0)	13
Three Pagoda Pass 2006	5	0 (0)	3 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3

^a Two paws from a sun bear *Helarctos malayanus*

$P = 0.30$), but there was in Tachilek (skin and skin pieces pooled, $\chi^2 = 121$, $df = 6$, $P < 0.001$). For example, compared to the other years combined, in Tachilek there were significantly more paws on display in 1999, significantly more skulls in 2000, and significantly less paws in 2006. Comparing markets, and pooling data from the same markets collected over the years, we see significant differences between what is offered for sale (skin and skin pieces pooled and Three Pagoda Pass omitted, $\chi^2 = 425$, $df = 8$, $P < 0.001$). Compared to the other markets, paws were particularly abundant in Golden Rock and many more skulls were observed in Mong La. Conversely, canines were offered for sale significantly less in these two markets.

Prices and usage

Most of the body parts were offered for prices of USD 4–40 (Table 2), and the most expensive items were skulls (USD 64) and a bear skin hat (USD 90). Prices of gall bladders differed five-fold, probably depending on their size and quality. The total monetary value of the items offered for sale during our surveys was USD 6,500–9,500 (excluding gall bladders). This amounts to a fraction what must have been sold, for if we assume a monetary value of USD 255 to 370 per bear (one skull, one gall bladder, four paws, 32 pieces of skin based on sizes of skin pieces observed at the markets) the total value of the 215 bears killed would have been USD 55,000–80,000.

Although we did not observe it directly, we assume that the meat of the freshly killed bear cub would be sold for consumption. Bear skins, be it whole or in pieces, are sometimes sold as trophies, claws as charms (Fig. 2) whereas all the other parts are sold for their purported medicinal properties. Rendered fat from bears is used to improve the health of ones hair and to treat vitiligo and related skin diseases. Paws are sometimes rendered for these purposes as well. Skulls are ground and mixed with water to form a paste that is used to treat children's mouth diseases. Skulls, when fresh, are also among the contents of general rendering. According to dealers in Golden Rock, most skins and paws are

Table 2 Prices of Asiatic black bears *Ursus thibetanus* and sun bears *Helarctos malayanus* at markets in Myanmar, 1995–2006; prices were quoted in Burmese Kyat, Thai Baht, and Chinese Yuan, and are here converted to USD at the black market prices at the time of the survey

Bear part	Year	Price (USD)	Source
Whole bear	2000	190.00	Martin and Redford 2000
Canines	1995	2.00	Martin 1997
	2006	5.00–10.00	This study
Jaw	1995	4.20	Martin 1997
Skulls	2006	52.00–64.00	This study
Claws	1995	4.20	Martin 1997
	2006	2.00–2.50	This study
Paws	1995	8.50	Martin 1997
	2000	17.00	Shepherd 2001
	2006	15.00–20.00	This study
Skin	1995	17.00	Martin 1997
	2006	4.00	This study
Gall bladder	1995	18.00, 42.00, 83.00, 100.00	Martin 1997
	2000	42.00	Shepherd 2001
	2006	37.00	This study
Rendered fat	1995	2.50	Martin 1997
	2000	5.00	Shepherd 2001

Fig. 2 Claw of an Asiatic black bear for sale in the Tachilek. (Photo: Chris R. Shepherd, TRAFFIC Southeast Asia)



purchased by Taiwanese and Chinese tourists, and the impression is that this market caters mainly to the demand for traditional medicine. In contrast, the border markets were also catering to the demand for ornaments, charms and trophies, and attracted mainly Thai (Tachilek and Three Pagoda Pass) and Chinese (Mong La) customers.

Discussion

Nature of the trade

This is the first comprehensive survey for bear body parts in Myanmar. During 12 survey days, 1,200 bear parts were recorded. These parts were derived from at least 215 individual bears. In reality this number must have been considerably higher as we assumed the body parts to be perfectly distributed over each individual market. Thus when at any market one vendor offered a skull for sale, another two paws and yet another eight claws and three pieces of skin, we conservatively assumed this to originate from just one single bear, whereas in reality this may have come from two, three or more bears. While there are two species of bear found in Myanmar, over 99% of bear parts that could be identified to the species level during these surveys were of the Asiatic black bears. Only one dealer had parts (two paws) that were identified as being from a sun bear.

There were large differences in what body parts were offered for sale at the four markets, and, at least for Tachilek, large inter-annual differences. The different body parts were not offered for sale in the same ratios during the three years we conducted the surveys, suggesting a capricious market. In some years certain body parts were observed in large numbers whereas in others they were rarely recorded or not observed at all. Likewise the large differences in availability of different products at the four markets are suggestive of differences in demands by the respective clientele.

In Three Pagoda Pass, three bear skulls were observed for sale in the market on the Myanmar side of the border. No other parts of bears were observed and it was not determined if the skulls were from the sun bear or the Asiatic black bear. Apparently, this market used to be a more significant source of bear parts, facilitating the trade of bears, possibly all Asiatic black bears, killed in Myanmar to Thailand (William Schaedla, *pers. comm.* to CRS, 2006). Some of the dealers in the Golden Rock market are also hunters, or are often related to the hunters. According to the dealers, bears no longer inhabit the area around Golden Rock (Shepherd 2001). During the survey in 2006, one dealer explained the

difference in physical appearance between Asiatic black bears and sun bears and stated that the latter was rare and seldom obtained by the hunters and dealers in that area.

Based on cursorily observations and not on any systematic surveys, (inter)national trade in bear parts is not new in Myanmar. Martin (1997) surveyed eight markets in Myanmar, mostly in the south or in the interior, and found >91 bear parts (species not know) for sale at four of them. Nash (1992) noted the presence of trade in Asiatic black bears but not sun bears in Tachilek. Martin and Redford (2000) reported the wide availability of bear gall bladders in Tachilek, as well as seven live Asiatic black bears at a wildlife dealer 2 km from the town. In the Myanmar border areas of Yunnan, China, Yi-ming et al. (2000) reported ten paws and two live Asiatic black bears, reportedly originating from Myanmar, having been confiscated in 1994–1995 by the authorities.

Legality of the trade

The Asiatic black bear and the sun bear in Myanmar are protected and totally protected, respectively. It is, therefore, completely illegal to hunt or sell the sun bear and its parts. Hunting of the Asiatic black bear may be permitted, but only with a special license. The nature of the trade, and the fact that dealers stated that the trade of all bears was illegal strongly suggests that none of the dealers met during this study had permission to deal in parts of this species. Therefore, we assume here that all of the trade we observed was illegal. The fact that all bear parts observed during this survey were openly displayed, and the frankness of the dealers, suggests a serious lack of enforcement effort. Prices were low compared to other Asian markets (Highley and Chang-Highley 1994; Phillips and Wilson 2002; cf. Martin 1997).

Clearly, these markets cater to international buyers. Three of the four markets surveyed during this study are situated on international borders, with China and Thailand, and indeed dealers stated that buyers come from these two neighbouring countries, and from Taiwan. Furthermore, at Tachilek and Three Pagoda Pass, prices were quoted in Thai Baht and in Mong La in Chinese Yuan. Like Myanmar, both China and Thailand are Parties to CITES, prohibiting any cross-border trade of bears, their parts and derivatives. Furthermore, wild bears and their parts are legally protected in China and Thailand, making any trade therefore illegal. Official registered (legal) trade in bears from Myanmar in the period 1997–2005 has been restricted to two Asiatic black bear teeth being exported to the US in 1998, and two live sun bears being exported to the Czech Republic in 2001 (WCMC, 2006). Our survey of just four wildlife markets reveal that the actual levels of trade, including trade that is intended for the international markets, is significantly larger (cf. Shepherd and Nijman 2007; Nijman and Shepherd 2007). Although we do not have data on the extent of trade in bear parts in Myanmar prior to the country becoming signatory to CITES, we conclude that international trade in bear parts from Myanmar is significant and open, and suggest that wildlife trade regulations, at least for these species, have by and large failed. We urge both the Myanmar authorities as well as the authorities of the importing countries and territories (including at least China, Thailand, and Taiwan, Province of China) to take the necessary actions as to safeguard the survival of bears and indeed other wildlife in Myanmar.

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