

Tiger Farms and Pharmacies: The Central Importance of China's Trade Policy for Tiger Conservation^a

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OUTLINE

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OVERVIEW

China, with its massive population and rapidly developing economy, holds the key to the tiger's future. Twenty years ago, Chinese consumption of tiger bone medicines was driving the world's wild tigers toward extinction. The government of China had two contradictory responses to the crisis. One was to enact a strict domestic trade ban policy and promote the

^aThis chapter builds on a report for the international wildlife trade monitoring network TRAFFIC [1].

use of non-threatened medicinal substitutes for tiger bone. The other was to condone intensive breeding of tigers by operations that aim to supply markets for tiger products.

The trade ban appears to have greatly reduced medicinal use of tiger bone in China, and for a number of key tiger populations poaching has correspondingly declined [1, 2]. However, people who would profit from tiger farming are pressuring the government to allow them to sell products derived from their captive tigers, arguing that satisfying Chinese demand with an alternative source of supply would alleviate poaching pressure on wild tigers more effectively than banning trade.

Yet it is evident that decades of an abundant supply of fake tiger products, typically indistinguishable from genuine tiger, have not solved the poaching problem. Rather, the alternative supply has perpetuated consumer markets in China and contributed to continued poaching pressure. Legalizing tiger trade again in China would pose unacceptable risks to wild tigers, and threaten the hard-won conservation gains of the last two decades in China and other range states. China should exercise international leadership by strengthening its trade ban and ending tiger farming.

CHINA'S CONSUMPTION OF TIGER BONE MEDICINE SPARKS A CRISIS IN THE EARLY 1990S

While plants are the main element of traditional medicines in China, other animal ingredients are also used, and tiger bone was first mentioned in ancient texts more than 1,500 years ago. In modern times, tiger bone is believed to hold anti-inflammatory, strengthening and pain-relieving properties, although many consider the value of tiger parts to be primarily psychological rather than pharmacological. This is particularly the case with tiger penis, which is sold as an aphrodisiac [3]. Despite this long history of use, tigers remained relatively abundant in China up until the 1950s. But since then, China went from being one of the range states with the most wild tigers (over 4,000) to one with the least (less than 50) [1].

With China's burgeoning human population, habitat loss and fragmentation were major contributing factors, along with depletion of the tiger's wild prey base. But tigers were also intensively hunted, with a bounty paid by the government for their skins and bones. The bones were used for modernized production of medicines, with manufacturers estimating they used 3,000 kg of bone annually in the 1960s (an amount representing the skeletons of approximately 300 tigers), declining to 2,000 kg in the 1970s and 1,000 kg in the 1980s as the supply of tigers decreased [1] (Fig. 38.1). And although the supply of tiger bone was decreasing, the prevalence of tiger bone medicines was increasing—in China, throughout Asia, and in Chinese communities in the West [4].

Tigers were protected from hunting and trade by national law in China and most other range states by the early 1990s, and international trade in tiger bone was illegal under CITES (the Convention on International Trade in Endangered Species). Despite these legal protections, tigers were being poached at alarming rates in countries including India, Nepal, Myanmar, Cambodia, and Russia (Fig. 38.2). The situation was dire; the Chairman of the IUCN SSC Cat Specialist Group sounded the alarm that use of tiger bones in Chinese medicines was driving the tiger to extinction [4, 5].



FIGURE 38.1 Tiger skeleton in illegal trade in China. (Photo credit: Michael Day.)



FIGURE 38.2 A tiger poached for trade in Cambodia, 1997. (Photo credit: Uch Seiha/CAT.)

When I began working with the Cat Specialist Group and the wildlife trade monitoring organization TRAFFIC in the early 1990s, it was distressingly easy to find tiger bone medicines for sale. Over 200 factories in China were manufacturing various types of pills, wine, and plasters (poultices) with tiger bone listed as an ingredient, and were exporting them in large quantities [1, 3, 4]. Despite national protection for tigers and a ban on international trade, China continued to produce and export manufactured medicines on the premise that the tiger bone content was not readily recognizable as tiger [4]. In addition, raw tiger bone was used for on-the-spot preparations in traditional pharmacies (for example, one-third of the 50 pharmacies I surveyed in 1992 in Taipei were displaying tiger bone, which most shopkeepers identified as having come from mainland China) [6].

Evidence such as this convinced the international conservation community that urgent action was needed to eliminate domestic markets for tiger parts and products. The US government threatened China with trade sanctions for engaging in illegal trade which undermined the effectiveness of CITES [7]. China responded in 1993 with a special notification

issued by the State Council, the country's highest political body [8]. The notification reiterated the ban on commercial trade from existing national legislation, but took further measures to extend the ban to derivatives not readily recognizable as tiger parts. Tiger bone was removed from the national list of recognized traditional pharmaceutical ingredients, and factories were ordered to stop producing tiger bone medicines. Anything labeled as containing tiger bone was to be treated, in legal terms, as genuine tiger bone. Stockpiles of tiger bone were to be declared to the government and sealed. Research into substitutes for tiger bone was supported. Penalties for illegal trade ranged up to life imprisonment and the death penalty, which have been meted out on several occasions. China was lauded for this policy, and CITES resolutions henceforth have used China's comprehensive domestic trade ban as a model for other countries with tiger consuming markets to follow [1].

THE DECLINE OF CHINA'S TIGER BONE TRADE

In order to monitor the effectiveness of China's trade ban, TRAFFIC carried out a series of wide-ranging market surveys covering hundreds of pharmacies across China in 1994, 1995, 1996 [9], and 10 years later in 2005–2006 [1]. All surveys used Chinese researchers posing as customers. In the first three surveys, researchers requested over-the-counter manufactured preparations, either tiger bone wine or tiger bone plaster. Ten years later, as it was evident that manufacturing activity had largely ceased, researchers carried a more traditional doctor's prescription (written by a doctor from a well known traditional medicine university who cooperated with the study) with a number of ingredients including raw tiger bone.

The TRAFFIC surveys indicate a steep decline in availability of tiger bone medicines (Fig. 38.3). In 1994, 1 year after the ban, 18% of pharmacies surveyed had tiger bone medicines for sale. By 2005–2006, less than 1% of shops surveyed showed tiger bone medicines to

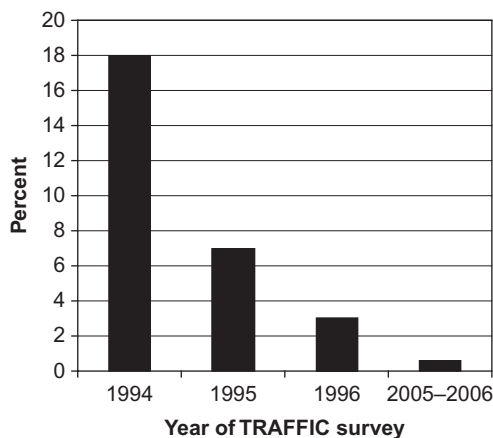


FIGURE 38.3 Percentage of shops showing tiger bone medicines on request. TRAFFIC surveys show a steep decline in availability of tiger bone medicines in China since the 1993 trade ban. Sources: 1994–1996: [9]; 2005–2006: [1].

researchers. Awareness that tiger bone medicines were illegal was high, with most shopkeepers voluntarily mentioning the trade ban to the undercover researchers (Fig. 38.4). The traditional medicine community appears largely in compliance with the domestic trade ban policy, or at least unwilling to risk doing business with anyone other than a trusted customer, which would also suggest that levels of use of tiger bone have declined since before the ban.

Most consumers also appear unwilling to contravene the law to obtain tiger bone medicines. For example, 69% of Hong Kong residents who told TRAFFIC researchers they had previously used tiger bone medicines said they would be unwilling to use them again if informed it was prohibited by law [10].

While tiger bone trade appears to have declined in China since the domestic trade ban was enacted, continued seizures of tiger bone in China and other countries indicate that illegal trade continues (Table 38.1). Some of the prosecutions demonstrate that those involved were professional wildlife traders dealing in multiple tiger skeletons, indicating some level of organization to illegal tiger trade. Yet many of those apprehended appeared to be opportunistic amateurs who did not have pre-arranged buyers [1]. This suggests that illegal trade does not cater solely to organized demand, but also contains a speculative element. In other words, illegal trade is driven not only by an underground Chinese consumer market, but also by a perception of continued value for tiger parts.

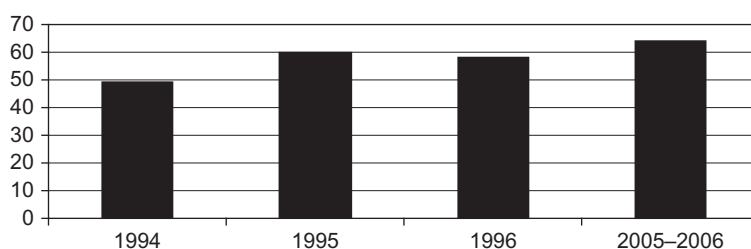


FIGURE 38.4 Percentage of shopkeepers who voluntarily expressed awareness of the 1993 trade ban during TRAFFIC surveys. TRAFFIC surveys indicate high awareness over time of the 1993 trade ban among pharmaceutical shopkeepers.

Sources: 1994–1996: 9; 2005–2006: 1.

TABLE 38.1 Seizures of tiger and leopard bones in China, India,^a and Nepal, 1999–2005 [1]

Country	Tiger/leopard bone (kg)	Tiger skeletons	Tiger bone (sacks)	Tiger/leopard bone (pieces)
China	335	31		
India	175	4		
Nepal	118		5	103
Totals	628	35	5	103

^aIndia's total seizures for this period are larger than shown here (B. Wright pers. comm., 2007).

THE RISE OF CHINA'S TIGER FARMS

It is not surprising that a perception of continued value for tiger products exists, given that the government of China has sent a mixed message on the issue. On the one hand, substantial educational and enforcement efforts have been invested in the domestic trade ban. The government has also promoted substitutes for tiger bone in traditional medicine. Yet at the same time, in line with its general support of commercial breeding of wildlife, the government has condoned operations that aim to farm tigers in captivity to provide a source of supply for consumer markets.

The sharp declines in availability of tiger bone products in Chinese markets have been accompanied by massive increases in captive tiger populations. According to the government, in 2007 the number of captive tigers was more than 5,000 [11]—over 100 times greater than the number of tigers optimistically estimated in the wild in China. Approximately half of these tigers are held in just two facilities, both of which have received government funding and support [1].

The Hengdao River Breeding Center for Felidae was established in northeastern China several years before the 1993 trade ban on the initiative of the government pharmaceutical bureau, reportedly 'to solve the problem of the shortage of tiger bone' [12]. In 1992 and 1994, China requested CITES recognition of the facility in order to be able to sell tiger products on the international market, but both requests were withdrawn before presentation at the Conference to the Parties. The other large captive collection of tigers in China is housed in the Xionsen Bear and Tiger Mountain Village in southern China. The owner, Zhou Weisen, a former snake trapper turned wildlife breeder, told a newspaper in 1999 that his ambition was to become 'the Tiger-rearing King of the World' [1].

Each facility started with just a handful of tigers and reportedly now houses over 1,000 tigers each (Fig. 38.5). According to the government's wildlife authority, the State Forest Administration, both facilities are licensed to use their tigers for non-commercial purposes

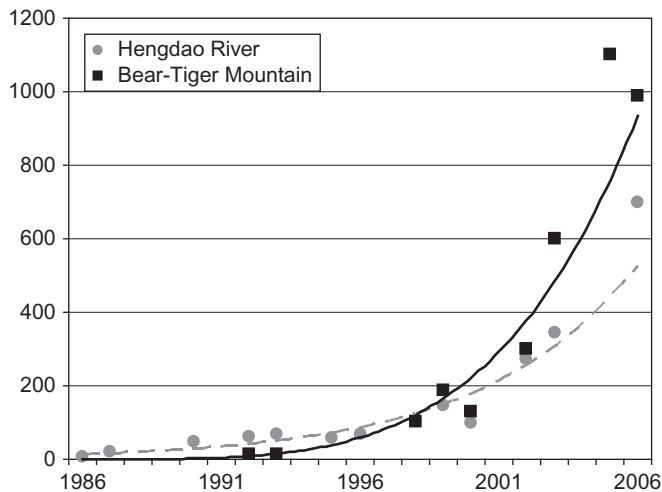


FIGURE 38.5 Number of tigers reported at China's two largest tiger farms, 1986 to 2006. Lines show the growth trends at the two facilities [1].

only (e.g., tourism, education, conservation), and the sale of products derived from their captive tigers is not allowed [1].

However, numerous investigations carried out by journalists and environmental organizations point to illegal commercial trade being carried out by both facilities. In northeastern China, a local restaurant offered 'tiger' meat said to come from their connection to the Hengdao River tiger center (although when investigated by authorities, it was claimed that the meat was actually donkey meat marinated in tiger urine, although how the tiger urine was obtained was never made public) [1]. At the other facility, Xionsgen, a British television news team had the 'Meat of the King' they ordered from the restaurant's menu DNA tested and it was found to be tiger.^b Xionsgen's owner, Zhou Weisen, when confronted with this evidence by the news crew at the Fourth Assembly of the Global Tiger Forum in Nepal, which he was attending along with the Chinese government delegation, threw punches and got into a scuffle. The Chinese government later announced that they were investigating not the owner, but the journalists, as well as the waitress captured on hidden camera claiming that the meat was tiger.

In addition, Xionsgen has opened up a subsidiary wine-brewing company, and has obtained government permission to manufacture 400,000 bottles of wine made with the bones of African lion *Panthera leo* (of which he reportedly has 200, although few have actually been seen at the facility). However, the name of the wine rhymes with tiger bone wine; it is packaged in a bottle which is a replica of a tiger; nowhere is the English or Chinese word for lion used; and Xionsgen staff have repeatedly told undercover investigators that it is actually tiger bone wine [1]. When the Chief Enforcement Officer of the CITES Secretariat visited the facility at the request of the CITES Standing Committee, the wine was for sale at the gift shop of the hotel where he stayed, and hotel staff told him it was made from tigers [13]. The Chinese government has hosted a number of foreign expert delegations at the Xionsgen tiger center, but none have been allowed to visit the wine producing facility. TRAFFIC had this wine DNA tested, but the DNA obtained was too fragmentary to identify the species [1].

Not having permission to trade in tiger parts, the tiger farms have been allowed to stockpile carcasses in on-site freezers. Various visitors over the years have documented fluctuations in the number of carcasses seen, rather than a steady rise as would be expected. The tiger farmers have said that they have had to dispose of carcasses due to budgetary constraints and power outages. Even if the products associated with the centers which are marketed as tiger are not actually made from tigers—although they likely are—they create the impression that tiger consumption is legitimate and perpetuates demand [1].

The tiger farms have been allowed to continue intensive tiger breeding because it is ostensibly for conservation purposes—to build up stock for future reintroduction. However, the type of breeding practiced is oriented towards maximizing production of tigers, rather than maximizing genetic diversity, and there are now far more tigers than could ever conceivably be required given the limited habitat available. The high costs of maintaining them diverts conservation resources from China's remaining wild tigers. Tiger farms cannot be considered supportive of wild tiger conservation [1].

^bThe news team had the meat DNA tested by a Chinese laboratory which, fearing political repercussions, did not want its name made public. The CITES Secretariat provided a copy of the detailed test results to a UK wildlife forensics laboratory, which stated that it appeared genuine (J. Sellars statement at the Fourteenth Conference of the Parties to CITES, Committee II Session 11, June 12, 2007, The Hague).

The two major tiger farmers in China and a few allies in the traditional pharmaceutical industry wish to frame their legalization lobby as another instance of conservation. They claim that they represent a new approach to tiger conservation, and that legalizing tiger farming would alleviate poaching pressure on wild tigers.

FAKING IT: AN ALTERNATIVE LEGAL SUPPLY HAS NOT BENEFITED WILD TIGERS

The primary argument used by proponents is that an alternative source of supply (farmed tiger products) would satisfy demand that would otherwise be directed toward wild tigers, and reduce the economic incentives to poach [14]. The only way to test the hypothesis that legalization would effectively eliminate commercial tiger poaching would be to conduct an experiment, as some proponents have suggested [14], by making an alternative tiger supply available and monitoring the consumer market as well as tiger poaching. It is not necessary, however, to conduct a risky new experiment using farmed tiger parts, because such an 'experiment' has actually already been taking place in China for decades. The alternative source of tiger supply has been fake tiger parts and products.

Fakes have been common in China for at least 30 years, although their use probably dates back much earlier. For example, in 1983 Ding Peixian wrote in an article in the Chinese journal *Technology of Traditional Chinese Medicine*, 'There are many drug peddlers selling fake tiger bones' [15]. And in 1990, Chen Junhua wrote in the *Journal of Chinese Medicinal Materials* that 'tiger bone counterfeits have been found in the market for more than ten years' [16].



FIGURE 38.6 Fake tiger leg for sale in Shanghai. (Photo credit: Charles Knowles.)

The 'classic,' often sold by street peddlers, is a fake tiger leg actually made from a cow leg and dog claws (Fig. 38.6). These can be distinguished with training (although they have occasionally fooled visiting biologists), but even experts would have a hard time distinguishing other tiger bones from those of other animals. Tiger penises are also commonly faked, using a bull penis and hand-carving exaggerated barbules [17, 18].

Moreover, many of the manufactured medicines which claimed to contain tiger bone may actually have been fakes. None of the medicines tested by wildlife forensics scientists with tiger bone listed as an ingredient have tested positive for tiger even using highly sensitive test methodologies [3]. One research group spiked manufactured TCMs with tiger bone quantities as low as 0.5% to show that that level was detectable with their test method, but could not detect any tiger DNA in the original medicines labeled as containing tiger [19]. It is possible that tiger bone was used at even more dilute dosages, and some manufacturers interviewed by TRAFFIC in 1989 (4 years before the trade ban) did claim to use real tiger bone. Others, however, said their formulas did not actually contain any [20], and the perception that many manufactured medicines were fakes was not uncommon among those in the TCM industry, including government regulators [3, 4].

Tigers are not the only species subject to fakery. Fakes are so prevalent in the Chinese traditional medicine market that numerous articles and a full pictorial encyclopedia have been published to help patients, practitioners, and traders distinguish them from the genuine item [1, 3]. In practice, though, many are unable to, like the Taiwan pharmacist I interviewed who was chagrined to learn he had been cheated when I informed him that the plastic shrink-wrapped tiger leg he had on display was fake. And in the case of a processed product such as meat, wine, or pills, it is clearly impossible for users to know for certain whether it is really tiger. A general rule of thumb for consumers is that if the price is low, the item is not genuine [3, 4], which illustrates a general custom that allows 'tiger' trade without anyone in the transaction losing face or feeling 'ripped off'.

Tiger skins are also faked, and the Chinese government recently admitted in a report to CITES that there are 'still large sales amount of faked furs and skins' [11]. Tiger meat can also be faked. One restaurant owner was prosecuted for advertising cat meat as 'tiger' meat [1].

The proportion of fake to real tiger products in trade over the years is difficult to quantify due to the difficulty of identification. In the case of skins, most seen by NGO researchers have been real [1]. Some tiger meat has been DNA tested and shown to be genuine [1]. During my 1992 survey of Taiwan pharmacies, 87% of the raw tiger bone I saw on display was identifiable as genuine tiger humerus bone [6] (Fig. 38.7). On the other hand, during the 2005–2006 TRAFFIC surveys, none of the six products shown to researchers (which included raw bone, paste, and bottles of wine) could be verified as genuine. None of the dried tiger penises I've seen over the years were real. What is clear is that fakes are common, and because their production is cheaper and more straightforward than smuggling tiger parts across the border, they have likely comprised a large proportion of China's tiger trade over the years.

China's national wildlife law does not currently prohibit the sale of tiger fakes (although it should), as long as they are not actually labeled with the words 'tiger bone.' Since fake tiger parts and products are generally indistinguishable to purchasers in the marketplace and thus perceived to be genuine, this represents a case study as to what degree an alternative source of tiger supply has replaced the illegal supply derived from wild tigers.



FIGURE 38.7 Genuine tiger bone for sale in Taipei, 1992, identifiable by the distal foramen on the humerus (small opening at lower left of photo). (Photo credit: Kristin Nowell/TRAFFIC.)

And the outcome is clear. Tiger poaching for the Chinese market has been a serious problem over the past three decades, despite the abundant availability of indistinguishable fake products. Rather than benefiting wild tigers, an alternative supply has more likely contributed to continued poaching pressure by perpetuating the consumer market and increasing the value of demonstrably genuine tigers.

It is likely that legalized sale of farmed tiger products would have the same result. Consumer markets for tigers would be perpetuated, and quite likely increase considerably—a Chinese researcher associated with the tiger farmers has predicted that demand, if trade were legalized, would quadruple from the early 1990s level [2]. Similarly, the value of demonstrably genuine *wild* tiger would be increased, as it is not an uncommon belief among Chinese TCM consumers that wild products have greater potency than farmed [10, 21]. For example, although ginseng is now widely cultivated and readily available, wild ginseng fetches a premium price and is threatened by illegal trade. Trying to separate wild tiger from licensed captive tiger from uncensored captive tiger from ‘substitute’ tiger (such as leopard) from fake tiger in the marketplace would be impossible for consumers, and an enforcement nightmare for authorities. Any labeling scheme would be open for abuse, and as described above, the government-labeled ‘lion bone wine’ has not yet been independently verified.

TIGERS SHOULD NOT BE BRED FOR TRADE IN THEIR PARTS AND DERIVATIVES

In January 2007, the government of China informed the world conservation community that, in response to being petitioned to legalize tiger farming, a policy review is underway and international expert opinion is being sought. The primary principle of their decision-making is that any policy change must be demonstrated, using scientific methods, to benefit the wild tiger population. The government has said that tiger trade was banned in 1993

as part of international cooperation in wild tiger conservation, and that if policy is to be changed it must also be shown that it will benefit tiger conservation in other countries [11]. China has requested international input into its domestic policy review, an extraordinary step which shows that the government understands that how China treats tiger trade will necessarily have an impact on tiger populations beyond its borders.

International input was provided in 2007 by both cat specialists and the world's governments. The Cat Specialist Group surveyed 37 members who work in Asia, and 75% believed that legalizing farmed tiger products in China would likely increase poaching pressure on wild tigers. Almost all (92%) felt that legalization was too risky for wild tigers to be pursued [22].

The nations of the world came together at the 14th Conference of the Parties to CITES in The Hague, The Netherlands, in June 2007. There was general agreement that more effort was urgently needed to control tiger trade, and China together with India, Nepal, and Russia drafted a set of decisions calling for a number of strengthened enforcement measures. Other countries proposed the inclusion of additional language, and the US suggested this text to address tiger farming: *'Parties with intensive operations breeding tigers on a commercial scale shall implement measures to restrict the captive population to a level supportive only of conserving wild tigers; tigers should not be bred for trade in their parts and derivatives.'*

The decision was adopted by consensus, but China proposed an amendment to the text above, to read *'tigers should not be bred for international trade in their parts and derivatives.'* They argued that CITES, as an international treaty, has no jurisdiction over national trade policy. This is true: CITES can only recommend, but not enforce, measures for nations to follow domestically, and in the case of the tiger CITES has adopted, by consensus, numerous such recommendations since the early 1990s, recognizing that domestic markets stimulate illegal international trade. Other tiger range states spoke out against China's amendment, and so it was put to a vote, requiring a two-thirds (66.6%) majority for adoption. Only 25% voted for adoption, and 61% voted against it, with the remainder abstaining [23]. The entire set of decisions [24] was adopted by consensus in plenary [25].

The reaction of some Chinese officials has been disappointing. At the CITES conference, several officials on the Chinese government delegation used the slogan '100,000 tigers' to signify the country's tiger breeding goal. Such an unprecedented number of captive tigers would obviously go far beyond breeding for reintroduction. After the CITES conference, the Director General of the State Forest Administration's Wildlife Management Division told Chinese media that China's ban 'won't be there forever, given the strong voices from tiger farmers, experts and society' [26]. Although an objective process was promised, the evident close relationship between officials leading the policy review and the tiger farmers has the appearance of impropriety.

If China fails to prohibit tiger farming, this will put the country in non-compliance with the international CITES recommendation. Under such cases, CITES can recommend that its members observe wildlife trade sanctions against offending Parties. This would be a shame, because many of the tiger measures recommended by CITES were modeled on those pioneered by China, including strict domestic trade bans with deterrent penalties, removal of tiger bone as a recognized pharmaceutical ingredient, and partnering with the traditional medicine community to raise awareness and promote use of substitutes [1, 2] (Fig. 38.8).

For most of its history, China has looked inward for its policy development and has had limited engagement with the outside world. Change in recent years has been rapid, however, and the country has gained tremendous prestige through international interaction. The



FIGURE 38.8 One of the many types of manufactured tiger bone medicines produced in China before the 1993 trade ban. (Photo credit: Kristin Nowell/TRAFFIC.)

government must resolve its dialectical policy contradictions by deciding if the country will act in isolation or as part of the international community.

China's policy to eliminate tiger trade has been good for China. It has addressed domestic needs by providing substitutes for tiger bone medicines, and is now in harmony with international tiger conservation frameworks. However, this policy is being eroded by the government's condoning of tiger farming. The legalization of trade in farmed tiger products poses unacceptable risks to wild tigers. China should exercise responsible international leadership by prohibiting tiger farming as well as trade in fake tiger products. Failure to do so will once again put China in the unwelcome position of representing the world's leading threat to the tiger.

References

1. Nowell K, Xu L. *Taming the Tiger Trade: China's Markets for Wild and Captive Tiger Products since the 1993 Domestic Trade Ban*. Hong Kong, China: TRAFFIC East Asia; 2007.
2. Nowell K. *Asian Big Cat Conservation and Trade Control in Selected Range States: Evaluating Implementation and Effectiveness of CITES Recommendations*. Cambridge, UK: TRAFFIC International; 2007.
3. Nowell K. *Far From a Cure: The Tiger Trade Revisited*. Cambridge, UK: TRAFFIC International; 2000.
4. Mills JA, Jackson P. *Killed For a Cure: A Review of the Worldwide Trade in Tiger Bone*. Cambridge, UK: TRAFFIC International; 1994.
5. Jackson P. Poaching for bones threatens world's last tigers. *Cat News*. 1992;17:2–3.
6. Nowell K. Tiger bone in Taipei. *TRAFFIC Bull.* 13(3):112–114.
7. Anon. US threatens China and Taiwan over tiger bone trade. *Cat News*. 1993;19:2–3.
8. Anon. China bans tiger bone and puts tiger farm in limbo. *Cat News*. 1993;19:3–4.
9. Mills JA, ed. *Rhinoceros Horn and Tiger Bone in China: An Investigation of Trade since the 1993 Ban*. Cambridge, UK: TRAFFIC International; 1997.
10. Lee SKH. *Attitudes of Hong Kong Chinese Towards Wildlife Conservation and the Use of Wildlife as Medicine and Food*. Hong Kong, China: TRAFFIC East Asia; 1998.
11. Government of China. *Report of Implementing Resolution Conf. 12.5 of CITES*. CITES CoP14 Doc. 52 Annex 1. The Hague, The Netherlands; 2007.

12. Anon. Tiger breeding station to provide bones proposed. *Cat News*. 1987;7:17–18.
13. CITES Secretariat. *Report by the CITES Secretariat on its verification and assessment mission to China, 28 March to 7 April 2007*. CITES COP14 Doc. 52 Annex 7, The Hague, The Netherlands; 2007.
14. Lapointe E, ed. *Collected Papers in Tiger Conservation: It's Time to Think Outside the Box*. Lausanne, Switzerland: IWMC World Conservation Trust; 2007.
15. Ding P. Identification of one type of false tiger bone (forelimb of ox calf). *Technol Tradit Chin Med*. 1983;3:24. (in Chinese).
16. Chen J. Two types of tiger bone counterfeits. *J Chin Med Mater*. 1990;10:26. (in Chinese).
17. Yates BC. Recognition of tiger parts in trade. In: Nowell K, ed. *Far From a Cure: The Tiger Trade Revisited*. Cambridge, UK: TRAFFIC International; 2000:90–96.
18. Yates BC. Distinguishing Real Vs. Fake Tiger Penises. *Identification Guides for Wildlife Law Enforcement*. Ashland, USA: USFWS, National Wildlife Forensics Laboratory; 2003;6.
19. Wetton JH, Tsang CSF, Roney CA, Spriggs AC. An extremely sensitive species-specific ARMS PCR test for the presence of tiger DNA. *Forensic Sci Int*. 2004;140(1):139–145.
20. Gaski AL, Johnson KA. *Prescription for Extinction: Endangered Species and Patented Oriental Medicines in Trade*. Washington, DC, USA: TRAFFIC USA; 1994.
21. Gratwicke B, Mills J, Dutton A, et al. Attitudes toward consumption and conservation of tigers in China. *PLoS ONE* 2008;3(7); e2544.
22. Anon. *An Expert Opinion from the IUCN Species Survival Commission and its Cat Specialist Group in Response to the Request from the Government of the Peoples Republic of China for Scientific Input to its Review of Domestic Tiger Trade Policy*. Muri, Switzerland: IUCN SSC Cat Specialist Group; 2007.
23. Anon. *Summary Record of the 14th Session of Committee II*. CITES COP14 Com II. Rep. 14, The Hague, The Netherlands; 2007.
24. Anon. *Decision of the Parties: Asian Big Cats*. CITES COP14 Decision 14.65–14.72, The Hague, The Netherlands; 2007.
25. Anon. *Summary Record of the 4th Plenary Session*. CITES COP14 Plen 4 [Rev. 1], The Hague, The Netherlands; 2007.
26. Anon. China's Tiger Trade Ban Won't Last: Official. Reuters. 19 June 2007.