

THE ASIAN TRADE IN BEARS AND BEAR PARTS: IMPACTS AND CONSERVATION RECOMMENDATIONS

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Abstract: The trade in bears and/or bear parts for use in traditional medicines, in cuisine, and as pets is widespread in Asia. The value of certain bear parts by weight, in some Asian countries, exceeds many times the price of gold, creating a market that effectively places a price on the head of every wild bear. The bile from bear gallbladders is an especially coveted medicine in China, Korea, Taiwan, and Japan, where it is used to treat a variety of serious ailments. Bear paws are considered both a "tonic" food and a gourmet delicacy in these populous and wealthy nations. Current levels of trade in bears and bear parts, coupled with ongoing habitat loss throughout Asia, suggests a continuing decline in the sun bear (*Helarctos malayanus*), the Asiatic black bear (*Ursus thibetanus*), the brown bear (*Ursus arctos*), and the sloth bear (*Melursus ursinus*). To prevent the decline and possible extinction of Asian bear populations, management and education efforts must address this trade at both supply and demand levels.

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Five bear species are found in Asia. These include the Asiatic black bear, brown bear, sun or honey bear, sloth bear, and giant panda (*Ailuropoda melanoleuca*). All Asian bears are thought to be in decline due to habitat destruction and fragmentation caused by timber harvest, agriculture, and human settlement. An additional and increasing challenge to the viability and survival of Asian bears is the commercial trade in bears and their parts. There is commercial demand in Asia for bears as pets, gourmet cuisine, and traditional medicine. Discussion of the giant panda trade is excluded from this paper, as the trade in pandas primarily involves a black-market demand for skins (Low 1991).

Significant amounts of forests have been lost throughout the range of Asia's bear species. As of 1986, tropical Asian countries with bear populations had lost an average of 64% of their wildlife habitat (McNeely et al. 1990). Much of this habitat loss is permanent, as felled forests are replaced by large-scale cash-crop plantations and human communities or simply not replanted (Collins et al. 1991). Forest destruction, agriculture, and human settlement draw bears into conflict with or within close range of humans. These encounters usually result in bears being killed as "pests" (Duff et al. 1984) or taken from the wild for their economic value as pets, food and/or medicine (Davies and Payne 1982, Mills and Servheen 1991).

Keeping bears as pets is popular in Thailand, Malaysia, Taiwan, and other Asian countries. Bears are usually brought into homes as cubs, then resold once they grow into unwieldy and dangerous subadults. It is at this time that these pet bears commonly enter the food and medicine markets of Asia.

"Bear's paw is probably the most celebrated exotic ingredient in the history of Chinese food" (Lai 1984). Bears appeared on Chinese menus as far back as the

Ming Dynasty, dated 1368-1644 (Chang 1977). China's emperors favored a banquet of 100 dishes, among which bear paw was always found (Wong 1986). As affluence has grown among Asia's industrial giants, imperial tonic foods such as bear paw have experienced a renaissance in popularity.

The use of bear fat as a medicine dates to 3494 B.C. (Ma 1986). Bear gallbladder may have entered the Chinese pharmacopeia as many as 3,000 years ago. Prescriptions for bear gall first appeared in writing in the seventh century (Bensky and Gamble 1986). A bear's medicine parts include its fat, meat, paws, gall, spinal cord, blood, and bones (Read 1982). Today's traditional Asian practitioners consider bear gall one of the most potent of "herbal" medicines, prescribing it for serious liver diseases, heart disease, hemorrhoids, and myriad other life-threatening or painful maladies (Mills and Servheen 1991). A resurgence in the use of traditional medicines such as bear gall has accompanied the rapid increase in wealth ongoing in certain Asian countries such as Taiwan, Japan, and South Korea (Mills and Servheen 1991).

Prices and demand for bears and bear parts have escalated at a rapid rate, especially in affluent countries (Fig. 1). In response to a shortage in the supply of gallbladders from wild bears, China and South Korea are now farming bears commercially in order to extract bile from the gallbladders of live Asiatic black and brown bears (Mills and Servheen 1991).

STUDY AREA AND METHODS

Limited reports on the bear trade have been published by Domalain (1977), Davies and Payne (1982) Milliken (1985), Caldecott (1988), Santiapillai and Santiapillai (1988, 1989), Servheen (1990), Low (1991), and Mills (1991). However, prior to this study

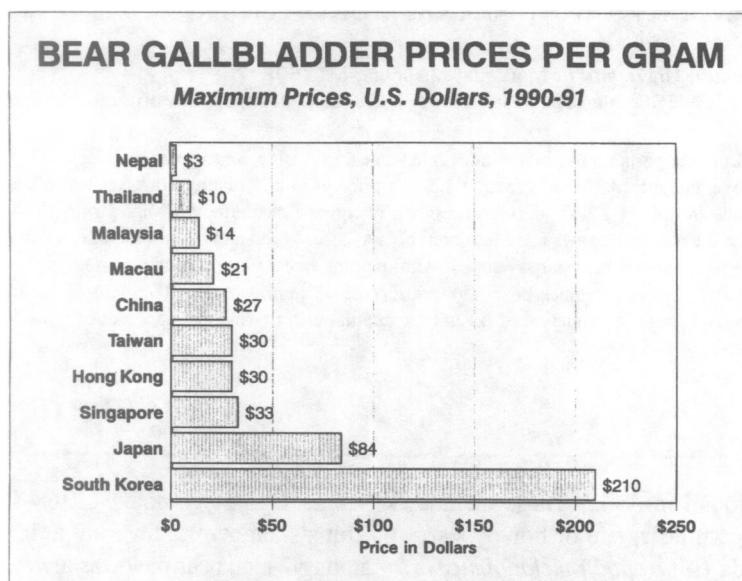


Fig. 1. Retail prices per gram for bear gallbladders in east and southeast Asian countries.

no one had conducted a systematic survey of the Asian trade in bears and bear parts in order to assess the magnitude of its implications to conservation of the world's 8 bear species. A preliminary survey of the bear trade in Thailand in 1989 led to the launching of this project in 1990, which extended the investigation to 10 other Asian countries including China, Hong Kong, Japan, South Korea, Laos, Macau, Malaysia, Nepal, Singapore, and Taiwan.

Observation and interview methods were used. Written queries about the bear trade were first sent to government and conservation officials of each country in order to ascertain local understanding of the bear trade. Upon arrival in each country, traditional Asian medicine stores and clinics, restaurants, pet stores, pet owners, animal wholesalers, and open-air markets were visited in order to assess the extent of the trade firsthand. Whenever possible, government and conservation officials were interviewed in person. Interpreters were used when necessary.

We did not impersonate law enforcement officers nor pose as smugglers or brokers of bear parts. We simply presented ourselves as individuals with a special interest in Asian medicine or as potential consumers of pet bears, bear-paw cuisine, or bear-based medicines. When speaking with government and conservation officials, we clearly identified ourselves as persons interested in the trade in bears and bear parts and in conservation of Asian bears.

RESULTS

Bears as Pets

Pet bears were observed in Laos, Taiwan, and Thailand. Keeping bears as pets was also reported in China, Hong Kong, and Malaysia. Species observed as pets were sun bears and Asiatic black bears.

In Laos, an Asiatic black bear cub approximately 3 to 4 months old was seen for sale in an open-air market outside Vientiane for \$180. The seller said her father had taken the cub from the forest while its mother slept. An adult Asiatic black bear and a sun bear cub were seen living in small cages behind a tourist hotel in Vientiane. A villager from the north of Laos reportedly had brought the sun bear cub in and sold it to the hotel for \$100. The Asiatic black bear had been brought in by villagers 8 months before. A person interviewed in Vientiane reported being offered 6 or 8 sun bear cubs, ranging in price from \$10 to \$100, during January and February of 1991.

Approximately 140 bears are registered as pets in Taiwan, of which about 120 are nonnative sun bears (H. Chen, Institute of Biological Science, Taiwan, pers. commun., Jun 1991). Two of these pets, sun bears living in a shop-house in downtown Taipei, were visited. Both of these bears were purchased illegally from pet stores for \$1,800 and \$2,600 respectively. Pet dealers at that time were paying hunters nearly \$2,000 for Asiatic black bear cubs from Taiwan forests

and selling them retail for more than \$5,500 (H. Chen, Institute of Biological Science, Taiwan, pers. commun., Jun 1991).

In Thailand, 2 pet Asiatic black bears were observed in a private home and a pet sun bear was seen at a Buddhist monastery. In 1988, hunters were getting approximately \$120 for Asiatic black bear cubs and \$320 for adults, while cub and adult sun bears were bringing \$120 and \$280 respectively (B. Dobias, World Wide Fund for Nature [WWF], International, pers. commun., Jan 1989). According to a Bangkok wildlife dealer's price list, Asiatic black bears were retailing for \$950 and sun bears for \$900. In 1989, the same dealer confirmed he was selling sun bears from Laos but refused to quote a price. Another wildlife seller at an open-air market in Bangkok said a sun bear cub would cost \$400 and take several weeks to smuggle from Laos.

Except in rare instances, pet owners become disenchanted with their bears once the animals enter adulthood. At this point, pet bears are usually sold to suppliers of the restaurant and medicinal markets (Mills 1991).

Bears as Food

The availability of bear-paw or bear meat at restaurants was confirmed in China, Hong Kong, Japan, Singapore, South Korea, and Thailand. Bear-based cuisine was also reported in Malaysia and Taiwan.

In China, bear paws were sold openly in a shop opposite one of Chengdu's largest tourist hotels for approximately \$24 each. A large tourist hotel in Harbin sold bear paw in its restaurant and advertised the fact in the lobby with a snapshot of an uncooked paw on a plate with a label stating that the bear came from Harbin's Heilongjiang Province.

Two restaurants in Hong Kong confirmed that they sold bear paw. At one restaurant, an entree consisting of 2 bear paws sold for \$380. The other establishment refused to quote an exact price, but said the raw paws cost between \$146 and \$162 per kilogram.

Japan imported 1,000 kilograms of bear meat in 1988 and 18,000 kilograms in 1989 (Ministry of Health and Welfare statistics, quoted in *Yominri Shinbun*, 25 August 1991). Bear steak was openly advertised on a highway sign outside a restaurant in northern Honshu for approximately \$15 per serving. Canned bear meat is commonly seen in tourist gift shops on Hokkaido, selling for approximately \$7.50 per 105-gram tin.

Bear paws were available in the freezer section of a Chinese grocery in Yokohama's Chinatown. A 850-gram frozen paw sold for \$254. A Yokohama

restauranteur said he could serve a bear paw entree for \$236 but that it would take him as many as 10 days to obtain the paw. Another restaurant owner said that he had stopped serving bear paw because prices had skyrocketed with a government prohibition on the import of bear paws from China.

With 4 days advance notice, a bear-paw entree was available at a large Singapore tourist hotel for \$170 per dish. Bear paw was also available at a traditional-medicine restaurant, where a dish serving 10 people was priced at \$230.

In South Korea, braised bear paw was printed on the menu at a restaurant in the Seoul Hilton, priced according to market prices at from \$492 to \$562 per dish. Another Seoul restaurant required 3 days notice to prepare a bear-paw entree for \$700.

A serving of bear paw was priced at between \$500 and \$600 in Bangkok in 1989. It is popular for Korean tourists to arrange banquets at which a live bear is killed in front of the diners and cooked to order after the gallbladder is removed. The price of a whole bear of unknown species for this purpose was approximately \$2,000 in 1989.

In July 1991, Thai police raided a farm south of Bangkok, where they found 4 freshly slaughtered bears, several live bears, and 48 bear paws in the refrigerator, along with about 40, mostly Korean, tourists on the premises. The farm had sold bear cuisine and gallbladders and was advertised as a tourist destination in both South Korea and Taiwan.

Bears as Medicine

The sale of bear gallbladders as medicine was widespread and observed in 10 of 11 countries visited. Because high demand and exorbitant prices for bear gallbladder are what drive the commercial market for bears, this study focused primarily on this aspect of the trade.

Seven factories in China produce 56 different medicines made with bear gallbladder. In 1990, prices for bear gallbladders ranged from \$3,200 to \$5,000 per kilogram (Newsletter of the Heilongjiang Bear Association 1990). In 1991, gallbladders from wild bears were offered for \$9 and \$12 per kilogram in Chengdu. At an open-air food market in Shenzhen, traffickers offered to sell a live bear delivered to Hong Kong and killed on site to ensure the authenticity of its gallbladder for between \$1,400 and \$2,700.

In Hong Kong, 21 traditional medicine shops were queried regarding availability of bear gallbladder. Of those, 20 claimed they sold bear gall. Prices ranged from \$1 to \$30 per gram. Of 16 shops that specified

the origin of their bear galls, 14 cited China, 2 the former Soviet Union, 2 India, and 1 Thailand.

Pure bear gall is sold as medicine by 42 Japanese pharmaceutical companies and is listed as an ingredient in 95 heart medicines, 16 stomach medicines, 1 digestive aid, and several famous children's medicines (E. Nozaki, Hakusan Nature Conserv. Cent., Japan, pers. commun., Aug 1990). Bear gall that comes primarily from imports is used in the manufacture of these medicines (H. Nishimiya, Environ. Agency of Japan, pers. commun., Aug 1990). Between 1981 and 1991, Japan imported 1,674 kilograms of bear gall worth nearly \$10 million from Canada, China, Hong Kong, India, North Korea and South Korea (Mills and Servheen 1991).

In Tokyo, bear gall generally retails for about \$28 per gram (E. Nozaki, Hakusan Nature Conservation Center, Japan, pers. commun., Aug 1990). Because the sale of bear gallbladders is legal in Japan, little time was spent documenting its sale for this study. One Tokyo pharmacy had 6 whole galls on hand, priced at \$30 per gram. Japanese bear hunters reportedly are paid between \$800 and \$2,500 per gallbladder (S. Ohdachi, Hokkaido University, Japan, pers. commun., Jul 1990).

The highest prices for bear gallbladders documented by this study were found in South Korea. Only 10 to 20 of South Korea's native Asiatic black bears are left in the wild. When 1 of these bears, all of which are strictly protected by law, was illegally killed in 1983, the government sold the bear's gallbladder at auction for \$64,000 (at 1991 exchange rates). At the Talsong Park Zoo in Taegu, zoo officials regularly auction the gallbladders of resident brown bears once they reach maturity. A Talsong Zoo auction in 1991 brought nearly \$10,000 for the gall bladder of an adult female brown bear.

Trade monitoring records show South Korea imported 382 live bears between 1980 and 1984. Between 1985 and 1990, 32.8 kilos of bear gall were reported entering South Korea, though these figures are likely incomplete as South Korea is not a party to CITES and is under no obligation to report trade in bears or bear parts. In a sampling of more than 50 traditional medicine stores in Seoul and Taegu that sold bear gall, prices for gallbladders ranged from \$1 to \$210 per gram. The stated origins of these galls included China, Korea, Mongolia, North America, Siberia, Tibet, and Vietnam. Bear bile salts were also sold at Seoul's Kimpo Airport pharmacy for \$5 per gram.

Bear gallbladders, loose bear-bile salts, and bear

paws were also sold on the streets and subway malls of Seoul by ethnic-Koreans visiting from China. In an informal survey of these sidewalk offerings on a single day, 136 bear gallbladders were seen, ranging in price from \$700 to \$14,000 each. All galls were said to come from China.

Among 6 medicine shops queried in Macau, only 1 admitted selling bear gall, which was priced at \$21 per gram.

Of 13 traditional medicine stores surveyed in peninsular Malaysia and Malaysian Borneo, 9 brought out what they identified as bear gallbladders from Borneo, China, Nepal, or Thailand. The 4 shops without gallbladders all sold gelatin capsules filled with what were said to be bear-bile salts. A Chinese-made hemorrhoid ointment that listed bear gall as an ingredient was also sold.

Bear gallbladders were not found for sale in traditional medicine stores in Kathmandu, Nepal. However, through word of mouth in the Tibetan community, bear galls were available at \$2 per gram.

Bear gallbladder was requested at 25 Chinese medicine stores in Singapore. Of those, 16 sold what were purported to be bear galls from Burma, China, Indonesia, India, Malaysia, Nepal, the Soviet Union, or the United States. The other 9 shopkeepers said they could refer us to shops that did sell bear gall.

Trade statistics show Taiwan imported 6,096 kilograms of bear gall from Canada, Hong Kong, Singapore, Thailand, and "other countries" between 1979 and 1984. Between 1979 and 1989, it also exported nearly 500 kilograms of bear gall to Japan, South Korea, and West Germany. In a survey of 34 traditional medicine stores in Taipei, 30 admitted selling bear gallbladders from Borneo, Burma, Cambodia, China, Hong Kong, India, Malaysia, "Southeast Asia," or the United States. Prices ranged from \$8 to \$30 per gram.

Three shops in Bangkok, Thailand, were surveyed in 1989. Prices range from \$4 to \$10 per gram. A travel agent confirmed that, for \$2,000, a whole bear could be purchased, killed to order for its gallbladder and afterward served as a banquet. The bears for such affairs were said to come from Laos, but the species was undetermined.

Bear Parks

Japan has 8 bear parks, a ninth under construction and a tenth proposed. Each of these parks is made up of large cement grottos and houses from 58 to more than 400 bears. A total of more than 1,000 bears reside in these parks, including all species except the

giant panda.

Among Japan's 8 bear parks, 5 admitted selling bear gallbladders. Among those 5, some obtain gallbladders from resident bears while others sell gallbladders of Japanese bears hunted in the wild by hunters. Prices ranged from \$1,000 to \$4,000 per gallbladder. During January through March 1991, more than 100 resident park bears at one Japanese bear park were killed for their parts, the gallbladders of which were shipped to South Korea for at least \$4,000 each.

Bear Farms

China, North Korea, and South Korea now farm bears for their bile, extracting the bile liquid through a fistula surgically implanted in the gallbladder. As of 1989, China kept as many as 8,000 bears in captivity for this purpose (Newsletter of the Heilongjiang Bear Association 1990). South Korea had 14 bear farms with a total of 655 bears in 1989 and reportedly more than 36 bear farms with an unknown number of bears 2 years later (Mills and Servheen 1991). The purpose of these farms as stated by officials is to take commercial pressure off wild bear populations and to ensure a reliable supply of authentic bear bile for medicinal purposes. Officials in China claim farm bears now supply 100% of that nation's demand for bear bile.

Three bear farms in China were visited. The largest of these was near Chengdu, China, and contained 450 Asiatic black bears, 150 of which were "milked" for bile at any given time. Another bear farm visited near Harbin, China, used brown bears as well as Asiatic black bears and 1 hybrid of the 2 species. Most bears used to start China's bile farms were taken from the wild, though Chinese laws now only allow the extraction of bile from second-generation offspring of wild bears (Mills and Servheen 1991). Retail prices for dried bile salts from farmed bears were approximately \$5 per gram.

The one South Korean bile farm visited contained approximately 23 bears, 4 of which were wearing fistulas for bile extraction. Customers of this bear farm are allowed to watch the bile extraction to ensure authenticity. Bile salts were sold in their liquid form for approximately \$1,700 for a 10 to 20 milliliter bottle.

DISCUSSION

Commercialization has made every bear on earth worth far more dead, or at least taken from the wild, than alive in its natural habitat. Escalation of the prices

and popularity of bear parts as food and medicine have made the commercial trade as great a threat to the survival of certain bear populations as habitat destruction. As illustrated in South Korea, the economic value of bear parts increases exponentially as bears diminish in number. With less than 1 million bears worldwide and more than 1 billion potential consumers of their parts, the potential threat to bears is obvious.

An array of legal loopholes conspire to make the policing of the bear trade nearly impossible. Enforcing international laws aimed at controlling the trade, specifically CITES, is hampered by the fact that some of the largest consumer nations in the bear trade, such as South Korea and Taiwan, are not currently parties to the treaty. In the case of other signatory nations, monitoring and reporting of the bear trade is limited. A patchwork of laws within nations or among neighboring nations, such as Laos and Thailand, allow the laundering of bears and bear parts across adjacent jurisdictions.

In most countries visited in the course of this study, any effort on the part of law enforcement agencies to police the trade in bear gallbladders was hampered by the difficulties of distinguishing: (1) a bear gall from that of another species such as a pig, cow, or dog; and (2) the gallbladder of a protected bear species from that of a nonprotected bear species. Positive identification of a bear gallbladder requires laboratory testing, while distinguishing between protected and unprotected bear species requires detailed DNA analysis that is not easily available. Look-alike pig and cow gallbladders are also widespread in the market. Given that there are decreasing numbers of bears and growing numbers of potential consumers willing to pay exorbitant prices for bear gallbladders as medicine, the introduction of fakes is understandable. The pervasiveness of fakes further complicates matters to the point that policing the gallbladder trade, the driving force behind the commercialization of bears, is difficult if not impossible.

Substitutions for bear gall will not ease the commercial pressure on bears. The active ingredient in bear bile is ursodeoxycholic acid (UDCA). Research in Asia, Europe, and North America has shown that UDCA is effective in treating certain liver ailments and in dissolving gallstones (Achord 1990, Leuschner and Kurtz 1990). While found in the gallbladders of many mammals including humans, UDCA is found in significant amounts only in the gallbladders of bears (MacDonald and Williams 1985). Japanese chemists began synthesizing UDCA from cow gall in the 1955.

Today, synthesized UDCA is widely used in medicine around the world and is available at very little cost without a prescription in many countries, including Japan and South Korea. Traditional medicine practitioners and sellers interviewed in the course of this study agreed that synthesized UDCA was not an acceptable substitution for bear gallbladder because it is manufactured in a laboratory rather than in the intestinal tract of a bear. By definition, traditional Asian medicine comes from nature, not from a test tube.

Given the dedication of traditionalists to the use of UDCA from bears, extracting bile from living bears would seem like the most viable substitution. However, the ongoing trade in wild bears and bear parts found in China during this study indicates that the farming of bears for their bile may be additive to demand for wild bear gall. This farming may in fact boost and foster demand for bear gall. When parts of a vulnerable species are openly marketed at high prices, an infrastructure of producers, buyers, processors, consumers, and black marketeers develops (Geist 1988). Such an infrastructure not only supplies demand but increases demand by initiating more consumers and promoting use of bear gall. This phenomenon was documented after China began farming the threatened musk deer. Despite the farms and protective legislation, collection of musk deer in the wild continued in order to meet demand (Green 1987).

In addition to stimulating the commercial trade in bear gall, Chinese bear farms have taken attention away from the needs of wild bear populations. Many, if not most, Chinese bear biologists have been enlisted in the central government's effort to increase productivity at bear-bile farms. In sum, bear farming focuses attention on bears as a commodity and takes already inadequate scientific attention away from conservation of bears in the wild.

RECOMMENDATIONS

The only hope of slowing the commercial trade in bears and bear parts lies in stricter legal protection, law enforcement, and education.

Efforts should be made to enhance enforcement of CITES and monitoring of trade in bears and bear parts. Nonparties to CITES that are eligible, such as South Korea, should join without taking reservations on bears. The patchwork of laws within and between countries should be unified to prohibit the laundering of bears and bear parts across adjacent jurisdictions. Law enforcement officers should be better versed in the bear

trade and better funded in their efforts to stop it. Laboratory identification of bear gallbladders should be perfected and made available to law enforcement officers worldwide.

Above all else, education promises the most effective tool for easing the commercial demand put on bears worldwide. "The effective reduction of the wildlife product trade will require a change in the attitudinal basis of consumer demand" (Kellert 1985). Any efforts to change consumer attitudes should be tailored to each of the different Asian cultures involved. A message that reaches Taiwan Chinese may not reach South Koreans. Education efforts should focus not just on bears and the need for bear conservation but on the unreliability of bear gallbladders as medicine. Laboratory tests have shown that bear bile acid pools can contain from zero to 32% UDCA (MacDonald and Williams 1985; E. Espinoza, U.S. Fish and Wildl. Serv., Asland, Oreg., pers. commun.), making them a highly unreliable source of this chemical.

To ignore the Asian trade in bears and bear parts and allow it to continue unabated will hasten the extinction of certain bear populations, particularly those among the little-known Asian species.

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