

# TRADE IN BROWN BEAR GALL BLADDERS IN RUSSIA

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**Abstract:** Trade in gall bladders of brown bears (*Ursus arctos*) has been practiced in Russia for at least a century. Trade increased dramatically starting in 1991 as a consequence of opening state borders, weakening state control, and increasing economic needs of local people. From 1991–94 bile was traded throughout Russia, most intensively in the far east where sophisticated dealer networks have apparently developed. Analysis of prices for bile in Russia and other countries in 1994–95 indicated that the major destinations for bile from Russia are Japan, Macau, South Korea, and Taiwan. Bile from Russian bears may also contribute to medicinal markets in oriental communities in Western Europe. Thousands of gall bladders are smuggled from Russia annually and it is still not clear where these go. Customs control is very weak and probably will not be improved in the near future. I analyze recent trends in trade of brown bear parts in Russia and adjacent countries, based on interviews with local mammalogists from spring 1993 and 1994.

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**Key words:** bile, brown bear, gall bladder, Russia, trade, *Ursus arctos*.

Wildlife has always supported many people in Russia. Trapping and hunting was one of the main occupations for human populations in the Asian part of Russia until the 1917 October Revolution. Main wildlife products were furs of sable (*Martes zibellina*), squirrel (*Sciurus vulgaris*), marten (*Martes martes*), beaver (*Castor fiber*), river otter (*Lutra lutra*), and other mammals. Before the 1917 revolution, hunters sold their products to private procurement companies. After the revolution state companies were the ultimate legal buyers of all wildlife products. However, many trappers and hunters continued private trade because illegal dealers usually offered higher prices. The illegal market for furs occurred primarily within the country because of few international contacts and strict border customs control.

Brown bears were considered pests until the end of the 1960s, when a license system was introduced in various parts of Russia. In 1976 the federal government began a license system for bear hunting, and in 1981 license fees were introduced throughout Russia.

Use of bear bile for medicinal purposes was popular among local Chinese and Korean communities and some native Russians (I personally know hunters from the Caucasus that use this product). The Russian Far East was a source of the brown bear gall bladders for traditional oriental medicine long before this century. Historically, the market was poorly developed and most trade was done as barter. During the 1950s and 1960s many Chinese and then Korean timber workers came to the Russian Far East under intergovernmental agreements, which increased the market for bear gall bladders. However, until the last decade this market apparently was not significant for local people as there is no evidence they were harvesting bears especially for their gall bladders.

After the uniform license system for hunting brown bears was introduced, license coupons became the documents that legalized trade in bear products. The Union of Soviet Socialist Republics (USSR), subsequently Russia, became a party to the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) in 1976. Since 1992, the legal export and import of bears and bear parts has required CITES permits.

*Perestroika* brought dramatic changes in the trade in bear parts. The first evidence of change in illegal wildlife trade in Russia occurred in 1992, when wildlife biologists working in the Russian Far East reported declining populations of the brown bear, Siberian tiger (*Panthers tigris*), and musk deer (*Moschus moschiferus*). The purpose of the current study was to examine trends and magnitude of trade in brown bear gall bladders and bile in Russia during 1992–94 and to determine which countries were primary destinations for gall bladders and bile from Russia.

In 1993 this study was done independently. Since 1994 this study was supported by World Wide Fund for Nature (WWF) Germany through TRAFFIC (Trade Records Analysis of Flora and Fauna in Commerce) Europe (WWF Project RU 0006). I acknowledge the cooperation of respondents, who kindly spent their time responding to the questionnaires, and also A.D. Poyarkov, who assisted in completion of this work.

## METHODS

I used surveys, newspaper advertisements, and customs records to obtain data on use and trade in brown bear gall bladders. I assumed that regional specialists on large predators and ungulates were the most knowl-

edgeable sources of information on wildlife trade for 3 reasons. First, these specialists personally knew all game managers in their regions and had long-term relationships with game management agencies through contracts for censuses. During 1990–92, game managers often moved to the wildlife trade business because of low salaries, wildlife expertise, and market contacts. Second, these regional specialists knew many hunters in the regions because when organizing censuses of ungulates and furbearers they used hunters and trappers as counters. Finally, regional specialists were the only people in the region considered game wildlife experts. Thus, they were often consulted by both hunters and dealers.

Because of the above, I assumed that by interviewing specialists I would receive accumulated knowledge of many people on the bile trade situation in a particular region. This group was interviewed in spring 1993 and 1994 via mail survey questionnaires. The survey queried specialists about presence or absence of gall bladder trade, methods of trade, trends, prices, and dealers and buyers (Appendix).

Local newspapers in Khabarovsk and Vladivostok were also examined for advertisements of bear parts. Customs records and list of CITES permits issued by the Russian CITES Management Authority in 1993 were analyzed to evaluate legal trade in the brown bear bile. I determined the potential destinations for Russian brown bear bile by comparing prices paid to hunters and poachers by dealers in various regions of Russia with wholesale and retail prices in Southeast Asia (Mills and Servheen 1991, Lau et al. 1994).

## RESULTS

The response rate did not significantly differ between 1993 surveys (42%) and 1994 (45%; Table 1). Although total number of completed questionnaires may look small, there are only about 100 field biologists working with large predators or ungulates in the former USSR. In Turkmenia, for example, I interviewed the only specialist in large predators in the country.

Brown bear gall bladders were traded in all regions except Turkmenia, and most respondents (50%) identified 1991 as the year illegal trade in bear gall bladders increased dramatically. Fewer respondents identified 1990 (21.5%) or 1992 (28.5%). All respondents agreed that in 1992 both demand for bile and intensity of trade were greater than previous years.

In 1993 and 1994, most respondents (81% and 70%, respectively) noticed bear gall bladders at flea markets,

**Table 1. Questionnaires sent and number of responses (in parenthesis) of 1993–94 questionnaires on the brown bear gall bladder trade sent to mammalogists in regions of Russia and adjacent countries.**

Region	Spring 1993	Spring 1994
European Russia	17 (9)	22 (13)
Western Siberia	8 (2)	9 (3)
Eastern Siberia	7 (2)	17 (8)
Far East	12 (7)	18 (6)
Estonia	1 (0)	0
Ukraine and Belarus	4 (0)	10 (4)
Kazakhstan	2 (1)	4 (3)
Turkmenia	1 (1)	4 (1)
Total	52 (22)	84 (38)

and 63% saw gall bladders advertised for private trade in local newspapers. Advertisements in the newspapers were especially common in the Far East (seen by 80% of respondents). In my survey of the newspapers (32 issues), at least 1 advertisement for the sale of bear bile was found in 29 (91%) of the issues.

Prices for the bear gall bladder were higher in the Russian Far East (Table 2). All respondents noted that prices in spring 1993 were increasing. However, according to the figures provided by the respondents, the actual price increase occurred in 1993–94 only in Kazakhstan (Table 2). In 1994 more than a half of respondents from all regions except the Far East reported a continuing increase in the price of bear gall bladders.

The most important buyers in amount of bile purchased appeared to be dealers from large towns and local people reselling gall bladders to foreigners. Local people buying bile for their own needs, organizations, and foreigners were reported less frequently. In 1994, respondents reported that >70% of gall bladders were sold directly to dealers.

Dealers were known to come from many areas to buy bear bile. For European Russia and Western Siberia, the principal places mentioned were Moscow, St. Peterburg, the Baltic countries, Ukraine, and Moldova. Buyers in Eastern Siberia and the Far East were from Vladivostok, Nakhodka (major sea port in Primorsky region), Magadan, and Providenya (a small settlement at the eastern extreme of Chukotka). Respondents stressed that these were final Russian destinations for the gall bladders, and from there they were smuggled out of the country. Dealers coming directly from China, Japan, and Vietnam were also reported. Surprisingly, dealers from Moscow were reported to come to Kamchatka to purchase bear gall bladders, but no information was available on the final destination of

**Table 2. Wholesale (w) and retail (r) prices for brown bear gall bladders in US\$/g reported in various countries.**

Country	1990-91 <sup>a</sup>		1993	1994	Source
	w	r			
Kazakhstan <sup>b</sup>			2	8	
Russia <sup>b</sup>					
European			1-2 (up to 12)		
Western Siberia				2-4	
Eastern Siberia			2	2-4	
Kamchatka			1-6	3-4	
Magadan area			8	3-4	
South of the Far East			2-4 (up to 20)	3-5 (up to 10)	
China	1-2	9-50		1.5-8.8 (r)	Mills et al. 1995
Hong Kong		1-30		6-10 (r)	Rose and Gaski 1995
				0.5-61 (r)	Lau et al. 1994
				17.3-45 (r)	Mills et al. 1995
Japan	7.5	28		10-120 (r)	Mills et al. 1995
				200 (r)	Rose and Gaski 1995
Macau		21		0.7-68.4 (r)	Mills et al. 1995
Malaysia		1-14			
Nepal		2-3			
Singapore		1-33			
South Korea		1-139		1,000 (r)	Rose and Gaski 1995
				13-500 (r)	Mills et al. 1995
Taiwan		8-30		11-75 (r)	Mills et al. 1995
				8-11 (r)	Chang et al. 1995
Thailand		4-10			

<sup>a</sup> Data for the prices in 1990-91 taken from Mills and Servheen 1991.

<sup>b</sup> Original data, all prices wholesale.

that bile (Chestin 1994). In the 1994 survey the list of dealer origin was greatly expanded and included literally all towns with direct international rail or air connections.

About 88% of respondents knew organizations involved in trade of brown bear bile. In 1993, 24% knew of cases when illegal exporters were stopped at the border. In 1994 only Far Eastern respondents (4 out of 6) reported the confiscation of bear bile by customs officers. In all cases the only prosecution for illegal export was confiscation.

The amount of bear bile sold in a particular area was difficult to assess. One respondent from Magadan claimed that in 1992 about 6.5 kg of dried bear gall bladders were sold in the town. Assuming 70 g as the average weight of a dried gall bladder, 93 bears were killed for that amount. However, the same respondent mentioned that both demand and incentive were so high that much of that 6.5 kg was counterfeit and included human gall bladders taken from morgues (Chestin and Poyarkov 1995). Comparison of the number of hunters known to sell bear parts before versus after 1992 showed no differences.

According to 1993 customs records, not a single commercial parcel of bile legally crossed the border. According to the 1993 records of Russian National CITES

authorities, only 1 Far Eastern joint venture from Vladivostok, applied for a CITES permit to export 40 kg of bile to Singapore; the permit was issued but then annulled, probably because the trade partners did not agree to the deal.

## DISCUSSION

I attribute the dramatic increase in trade of gall bladders beginning in 1991 to 3 reasons. State borders opened, which weakened wildlife and customs control. Impoverished local populations had high economic incentive for poaching. Lastly, buying power increased in the consuming countries in Southeast Asia.

In 1994, many respondents from Siberia and the Far East reported a decrease in bile trade because of stable or even decreasing prices; smugglers switched to illegal trade in timber, ginseng (*Panax* sp.), and live animals. However, these figures do not show substantial changes in prices for bear bile. A probable explanation for the decrease in trade in bile is economic incentive as buying power of hard currency decreased in 1994 compared to 1991-92. For example, in 1991 the sale of a single gall bladder could support a family for almost half a year, but

in 1994 1 gall bladder would have supported a family for <1 month. Bear hunting is time and labor intensive, and with less economic incentive, many people probably switched to more cost-effective activities. Prices for bear bile in our survey were higher than those found by TRAF-FIC International (1994), who found that hunters usually did not receive >US\$ 2/g in the Far East, while dealers were selling gall bladders for up to US\$ 4 (the price mentioned by our respondents as that paid to hunters).

Another factor that probably diminished local trade of gall bladders was concentration of trade in both legal and illegal companies. For example in Vladivostok, a center of bile trade, a researcher reported that in spring 1994 there were numerous newspaper advertisements by private traders asking for and offering bear gall bladders. After spring 1994 the only known buyer of bile was a joint Russian-Singapore venture (TRAFFIC Int. 1994). The survey also provided evidence that a dealer network had developed. Respondents reported a higher percent of bile purchased by dealers versus local people for resale in spring 1994 compared to spring 1993.

Trade in brown bear gall bladders likely peaked in Russia in 1991-92, stabilized in 1993, and steadily decreased in 1994. There is no doubt, however, that illegal trade still exists—all respondents reported knowing of underground dealers who came to remote areas, paid hunters in advance, and later returned to pick up the bile.

Trade in brown bear bile occurred not only in the Asian part of the former USSR, including Siberia, Far East, and Kazakhstan, but also in the European part. The fact that bile was traded in the Baltic countries, Ukraine, and Moldova suggests that probable destinations of this bile were Asian communities in Western Europe.

Prices observed by various researchers in Asian countries greatly varied (Table 2). One possible reason for this variation was trade of counterfeit bile or gall bladders from other species (e.g., domestic pig). Although Lau et al. (1994) reported prices in Hong Kong ranging from US\$ 0.5-61/g, they believed that nearly  $\frac{2}{3}$  of all gall bladders were counterfeit, and that genuine bear gall bladders cost US\$ 25-35/g. Between 1990-94, prices increased in Japan, South Korea, and Taiwan and might have increased in Macau and Hong Kong. In China prices apparently decreased (Table 2).

Comparing prices paid to hunters and poachers in Russia with those observed elsewhere (Table 2) suggests possible destinations of Russian bile. I assume that dealers buying gall bladders in Russia for US\$ 3-5/g would sell it for at least US\$ 10-15/g because of their expenses, travel costs, and probable bribes to customs on both sides of the border. Russian dealers probably sell gall bladders to for-

eign counterparts for the prevailing wholesale price abroad. Chinese retail prices are at least 9 times greater than wholesale, while Japanese retail prices are 5 times greater than wholesale prices. Therefore, bile originating in Russia should range between US\$ 50-135/g retail. In 1990, these prices were observed only in China and South Korea (Mills and Servheen 1991); in 1994-95 prices were that high in Japan, Macau, and Taiwan (Mills et al. 1995, Rose and Gaski 1995). Obviously, this calculation is primitive and based on incomplete data. However, the spread between wholesale and retail prices in Russia may be less because of the dealer network. Regardless, the price for Russian-originated bile should be at least US\$ 20/g.

Few shop owners mentioned Russia (or the Soviet Union) as the source country for their bile, although the validity of the reported country of origin was unclear (Table 3). Only South Korea had prices corresponding to Russian-originated bile, suggesting that regular gall bladder trade occurred only between Russia and South Korea. If the acceptable retail price threshold is moved to US\$ 20/g, Hong Kong may have been a trading partner, too. Unfortunately, no information is available on the prices for bear bile in Asian communities in Western Europe, which also may be a destinations for bear gall bladders coming from Russia.

Countries which may be excluded as markets for Russian bile are Malaysia, Nepal, Singapore, and Thailand, because maximum prices for bear bile there are lower than the expected price of the bile from Russia. Russian bile might have been traded in China, Japan, Macau, and Taiwan by other mechanisms (e.g., sailors could purchase bile from hunters in Russia and sell directly to shop owners, not paying travel costs) or through dealers with low overhead.

Between 4,000-4,500 brown bears are legally harvested in Russia every year (Chestin et al. 1992). In the 1990s,

**Table 3. Prices reported for bile allegedly from Russia, in US\$/g.**

Country	Prices (US\$/g)		
	1990	1994	1995
Hong Kong	29 <sup>a</sup>	5-27 <sup>b</sup>	45 <sup>c</sup>
South Korea	111-139 <sup>a</sup>		10-167 <sup>c</sup>
Singapore	1-14 <sup>a</sup>		
China	25-34 <sup>a</sup>		1.5 <sup>c</sup>

<sup>a</sup> Mills and Servheen 1991.

<sup>b</sup> Lau et al. 1994.

<sup>c</sup> Mills et al. 1995.

hunters throughout Russia began keeping bile even in areas where there formerly was no market. Assuming an average weight of 70 g/gall bladder (dried), at least 280–315 kg of legal bear gall bladders are annually available. Illegal harvest varies by region. Extensive poaching on bears occurs on Kamchatka Peninsula, with poaching estimated at 1–2 poached bears for each bear taken legally (Chestin 1994). TRAFFIC International (1994) indicated that 3,000–4,000 bears were poached annually in the Khabarovsk region, 3–4 times greater than the number of official licenses issued. Poaching in European Russia and remote areas of Siberia is far less, but even assuming a ratio of 1 poached to 1 legally taken bear, the total bear kill in Russia would be double the legal harvest. This means that 8,000 bear gall bladders annually enter the market. In addition, Chinese bear farms milked bile from about 10,000 bears in 1994 (Highley and Highley 1995).

Surveys in Hong Kong revealed that about 360 gall bladders were available at any time in 1991, although  $\frac{2}{3}$  were counterfeit (Lau et al. 1994). Thus, Hong Kong probably was not an important market for the thousands of gall bladders annually harvested in Russia. Other potential destinations for Russian bile are China, Japan, and South Korea, but given a large portion of counterfeit bile in those countries (Espinoza et al. 1995) and bans on bile trade in some, they probably do not import thousands of gall bladders from Russian brown bears. Also, all surveys done by TRAFFIC showed that Russia is rarely named by traders as a source of bile. Thus, further investigation is necessary to determine the destinations of Russian bile.

My data and those reported by TRAFFIC International (1994) indicates that control of illegal bile trade by Russian customs officers is weak. Some gall bladders occasionally may be confiscated but not reported by customs officers. Obviously, it is difficult to find small parcels when customs search large vessels or trains. Specially trained dogs (Krenz 1995) may help but the high cost of training and maintaining such dogs prohibit their use by Russian customs service in the near future.

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## APPENDIX

Questionnaires for 1993 included the following questions related to the gallbladder trade:

1. Are brown bear gall bladders traded in the region?
2. Did you notice a recent increase in the trade in bear gall bladders and, if yes, in which year (suggested answers 1990, 1991, 1992)?
3. What are the principal methods of trade (suggested answers: flea markets, advertising in local media, etc.)?
4. What are the prices for gall bladders?
5. Who are the main buyers of gall bladders (suggested answers: companies, local people for their own needs, local people for future export, dealers from outside the region, foreigners)?

6. Specify towns from which dealers come, if any.

7. Do you know any companies trading in bear gall bladder?

8. Do you know any cases when illegal exporters were stopped by customs and, if yes, what was the legal follow-up?

The questionnaire mailed in 1994 included the following in addition to questions 1, 2, 3, 5, 6, 7, and 8 from 1993 questionnaire:

4. Where there any changes in the prices since spring, 1993 (suggested answers: no change, prices dropped, prices increased)?

9. How many people illegally harvesting wildlife for trade do you know (suggested categories: no, 1-5, 6-15, more than 15)?

10. How many people illegally harvesting wildlife for trade did you know before 1992 (suggested categories: no, 1-5, 6-15, more than 15)?