

**AN ASSESSMENT OF TRADE IN BEAR PARTS BETWEEN
NORTH AMERICA AND HONG KONG**

BY

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A Practicum Submitted To The
Faculty Of Graduate Studies In Partial Fulfillment
Of The Requirements For The Degree Of Master
Of Natural Resources Management

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Mr. Wai Ming (Samuel) AuYeung

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ABSTRACT

A balanced and effective strategy for trade in North American bear parts requires the awareness of both consumption and trade in Asian consumer countries. By incorporating such information into the decision-making process, wildlife managers can predict and minimize the potential effects of future trade on local bear populations. Examining the cultural aspect of bear consumption in the Chinese traditions and the trading activities in Hong Kong, this study serves as an initial effort to provide wildlife managers with more meaningful information on the consumption and trade in major Asian consumer countries. This report concludes that bear parts, in addition to being used as food and clothing, are primarily consumed by the Chinese for medicinal purposes. Both bear gall bladder and paw are commonly sought-after in Hong Kong, but only gall bladder remains openly accessible to the public. This report also concludes that Hong Kong's demand for North American bear parts will likely rise in the future. Continuation of trade through enhanced regulation is recommended. Only through the continuous commitment and cooperation among all involved countries can the trade be regulated and the survival of bears be safeguarded for future generations.

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Chapter I

INTRODUCTION

Rising prices paid by Chinese medicine merchants for bear parts, gall bladders and paws in particular, provide economic incentives for the poaching of North American black bears *Ursus americanus* (Clifton 1989). International controls on trading in parts and products of bears have been minimal and ineffective (Servheen 1989). The degree of trade [1], though unknown, is increasing (Brautigam 1989). Trade in bear parts not only endangers bear populations in Asia (Servheen 1989), it also potentially threatens black bears and other bear species in North America (Brautigam 1989).

To date, *Ursus americanus* is the only North American bear species (Table 1) which is not listed and protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Although North American black bears are not at immediate risk of extinction (Brautigam 1989), some bear experts believe that they should be included in a CITES appendix (Appendix A) in order to avoid future management problems (Shoesmith, Manitoba Natural Resources, personal communication).

Table 1

Status Of Bear And Related Species In The Convention On International
Trade In Endangered Species Of Wild Fauna And Flora (CITES)

SCIENTIFIC NAME	COMMON NAME	APPENDIX	DATE INCLUDED
<i>Ailuroponda melanoleuca</i>	Giant panda	I	11/05/84
<i>Helarctos malayanus</i>	Malayan bear	I	24/04/80
<i>Melursus ursinus</i>	Sloth bear	I	19/10/89
<i>Selenarctos (Ursus) thibetanus</i>	Himalayan black bear	I	29/04/77
<i>Tremarctos ornatus</i>	Spectacled bear	I	29/04/77
<i>Ursus americanus</i>	North American black bear	--- Not Included ---	
<i>Ursus arctos</i> +	Brown/Grizzly bear	II	19/10/89
<i>Ursus arctos isabellinus</i>	Himalayan brown bear *	I	19/10/89
<i>Ursus arctos isabellinus</i>	All other populations	II	19/10/89
<i>Ursus arctos nelsoni</i> (Mexican population)	Mexican grizzly bear	I	19/10/89
<i>Ursus arctos pruinosus</i>	Tibetan/Central Asian brown bear	II	19/10/89
<i>Ursus (Thalarctos) maritimus</i>	Polar bear	II	29/04/77

[*] It includes all North American subspecies and population of Europe except USSR. One or more geographically separate population, subspecies or species are included in Appendix II and that these populations, subspecies or species are excluded from Appendix I or III. Canadian species or subspecies are included in Appendix II because of their resemblance to endangered species.

[+] Populations of Afghanistan, India, Nepal and Pakistan.

Source:

Environment Canada (1989), **CITES: Control List No. 8**. Shoemith; Wildlife Branch, Manitoba Natural Resources, personal communication.

1.1 PROBLEM STATEMENT

Inadequate data on the volume of trade, together with a lack of understanding on the cultural aspect of bear consumption in Asia, has hampered the formulation of a future strategy on bear management. At the same time, little is known about the relationship of these factors to bear populations in North America. Disputes over the need to put North American black bear in a CITES Appendix has occurred due to insufficient data on its trade in North America or Asia. Future management of and policy on bear parts' trade in North America, as a result, requires an understanding of the cultural aspect of bear parts consumption and trading activities of bear parts in major Asian consumer countries.

1.2 RESEARCH OBJECTIVES

The objectives of this study were: 1) to examine the cultural aspect of bear parts consumption in the Chinese traditions, 2) to identify the bear parts commonly traded in Hong Kong, 3) to determine the origin, supply, and price for bear parts in Hong Kong, 4) to assess the relationship between Hong Kong's trade in bear parts and demand for North American bear parts and, 5) to provide recommendations for future management of trade in bear parts.

1.3 METHODOLOGY

No previous literature has revealed the research methodology. Several studies, however, have made references to informant and undercover investigation as their sources of data on the illegal trade [2] (Lyster 1985, Brautigam 1989, Clifton 1989, Fitzgerald 1989, Gavitt 1989, Kinnear 1990, Twitchell 1990, Poten 1991, and Sloth 1991). Four research tools were used to fulfil the objectives of this study, namely, literature search on consumption of bear parts, mailout survey, personal interview, and sampling survey.

1.3.1 Literature Search On Consumption Of Bear Parts

To examine the cultural aspect of bear consumption in the Chinese traditions, the author conducted an extensive literature search at universities and book stores in Hong Kong. An informal interview was conducted with a practitioner of Chinese medicine to cross-examine and supplement the medicinal information obtained from both literature and Chinese medicine merchants.

1.3.2 Mailout Survey

A mailout survey was used to gather opinion on the need to manage the trade in North America, particularly North American black bears. Special attention was given to identify a possible way to manage the trade in the future. Thirty questionnaires (Appendix B) were mailed out to various organizations in North America. Appendix C provides the list of organizations being surveyed. Of the 30 questionnaires, 22 were completed and returned, giving a 73 percent [3] response rate. Figure 1 provides the distribution among the three categories of respondent. In addition to

"Management" and "Enforcement", other interest groups or merely independent observers involved in monitoring and/or researching of the trade were classified into the category of "Others".

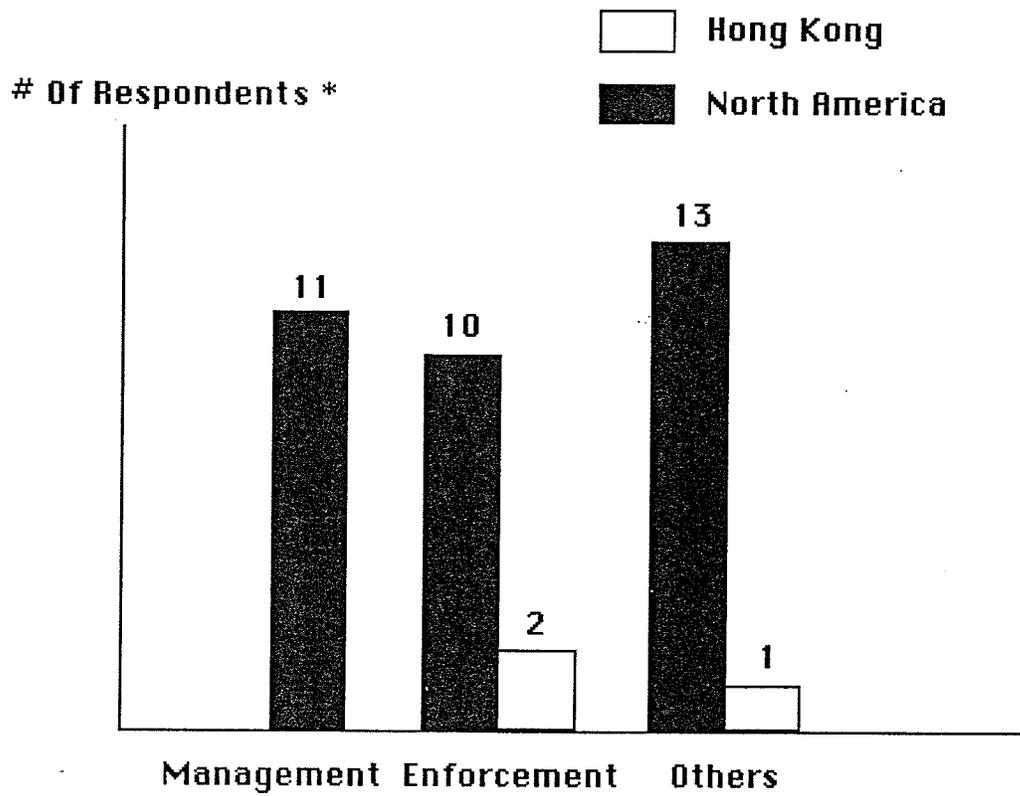
In order to obtain non-governmental opinion on the need to manage bear trade, a mailout survey was also conducted in Hong Kong. One questionnaire (Appendix B) was sent to and returned by Hong Kong's World Wildlife Fund. As a result, the response rate was 100 percent in Hong Kong.

1.3.3 Personal Interview

Based on questions prepared in a questionnaire (Appendix D), two formal personal interviews were conducted with officer from the Custom and Excise Department and the Department of Agriculture and Fisheries in Hong Kong. The scope of the questionnaire includes:

1. Identification information: to provide a record for each interview
2. Parts that are traded: past and present data
3. Annual volume of legal trade of these parts: past and present figures
4. Annual volume of illegal trade of these parts: past and present figures
5. Sources of supply: past and present data, with or without permit, species, origin, and prices

Questions, similar to those used in Appendix B, were also raised during the two interviews. In doing so, the researcher hoped to identify the difference in opinion regarding the trade in bear parts between Hong Kong and North America.



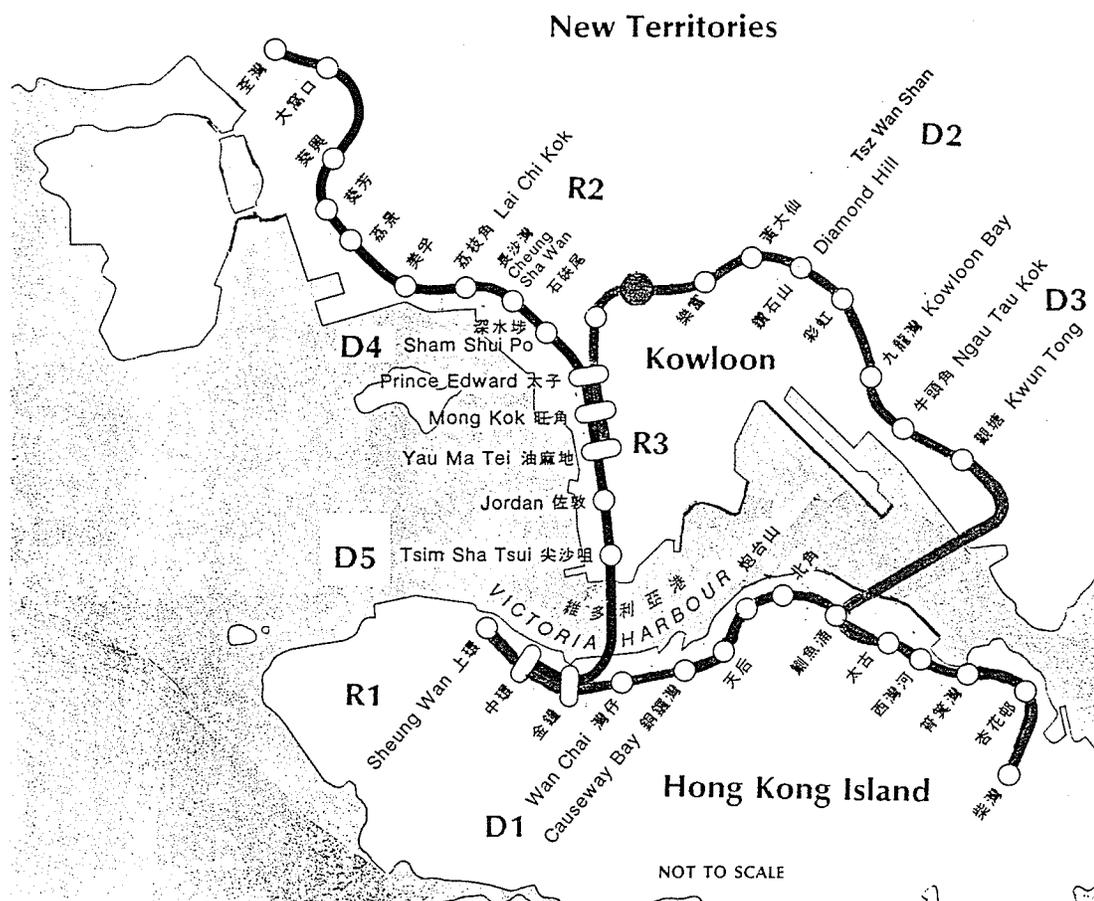
- 3 = Total Number Of Respondents In Hong Kong
22 = Total Number Of Respondents In North America
[*] = Some Respondents Are Engaged In Two/Three Functional Activities

Figure 1: Organizational Distribution Of Respondents

Informal interview was used in conducting interviews with three Chinese medicine merchants [4]. Questions similar to those used in the formal interviews were raised by the researcher in an informal setting, such as having lunch or dinner with these merchants. The researcher then recalled and wrote down the response of the merchant after each meeting. A total of seven informal interviews were conducted among these three merchants.

1.3.4 Sampling Survey

Most Chinese medicine shops in Hong Kong are clustered in 5 districts and 3 roads in particular (Figure 2) due to the traditional business locational consideration (Browne 1990, Cheung, a practitioner of Chinese medicine, and Confidential Informant C, personal communication). In order to achieve statistical validity, a pilot test was used to identify the sample size of the survey since no research with similar nature has ever been reported in Hong Kong before. Thirteen (1 percent) out of the total 1272 Chinese medicine shops (Census & Statistics, telephone enquiries) were randomly chosen for the pilot test to gather information on the availability of bear parts. Among all the 13 shops, 12 (92 percent) of them carry bear gall bladder. In fact, no other bear parts except gall bladder is available in these shops.



District (D)

1. Causeway Bay & Wan Chai
2. Diamond Hill (including Tse Wan Shan)
3. Kwun Tong (including Ngau Tau Kok & Kowloon Bay)
4. Shamshuipo
5. Tsim Sha Tsui

Road (R)

1. Bonham Strand West (Sheung Wan)
2. Castle Peak Road (Cheung Sha Wan to Lai Chi Kok)
3. Nathan Road (Jordan to Prince Edward)

Figure 2: Distribution Of Survey Areas In Hong Kong

Based on the result of the pilot test, a total of 80 [5] Chinese medicine shops [6] were randomly chosen among these roads or districts. A survey was then conducted among these shops to assess the following:

1. Availability of bear parts
2. Retail price
3. Origin of these parts
4. Medicinal values of these parts
5. Current demand and supply situation
6. Demand, supply, and price in the past years

The researcher had no difficulty in getting response for the first three questions from any Chinese medicine shops surveyed. However, when being asked on the subsequent questions, most respondents started to find the questions suspicious and often declined to comment further. As a result, no conclusive information could be obtained for the remaining questions.

Chinese medicine shops in the New Territories were excluded from the survey. Transportation cost and time consideration in accessing these shops had prohibited the researcher to include them since they are sparsely located in the New Territories.

1.4 LIMITATIONS OF THE STUDY

Reliance on the Confidential Informants to reveal their illegal trade, is the first limitation of this study. Although identity anonymity was assured to the three Informants, they were still hesitant to reveal their trading records. Rather than providing an exact trade figure to the researcher, they were only willing to provide approximate data.

Another limitation of this study is that information obtained from the informants only represents a partial picture on the total illegal trade in Hong Kong. Unfortunately, this is the most practical method available at the present moment. Without interviewing these merchants with guaranteed anonymity, the only alternative is to rely on the official data of illegal seizure. Even a few first hand information from the anonymous merchants can provide insightful understanding to the trade activity. Accidental seizure from the illegal trade may, however, keep one in complete darkness about the extent of the trade.

The final limitation of this study is that findings in Hong Kong cannot be generalized for other Asian consumer countries, such as Japan and Korea. Despite valuable insights are obtained on Hong Kong's trade in bear parts, the same situation may or may not be happening in other Asian consumer countries.

Chapter II

PROTECTION AND MANAGEMENT OF BEAR IN NORTH AMERICA

2.1 OVERVIEW

Little is known regarding the extent of the illegal trade in North America. Literature available has been focused on the illegal trade of black bears since most poaching activities are nowadays associated with this species (Brautigam 1989, Clifton 1989, Fitzgerald 1989, Gavitt 1989, Servheen 1989, Kinnear 1990, Twitchell 1990, Hummel and Pettigrew 1991, Johnson 1991, and Poten 1991). This review of literature, though not exhaustive, provides some insight into the problems involved. The following sections will cover the protection of bear populations in North America, underlying reasons for the rising illegal trade in bear parts, effects of this trade on bear populations, and difficulties encountered by the management agencies and their needs in the future.

2.2 PROTECTION OF BEAR

Historically speaking, international trade of wildlife and their body parts is not a new phenomenon (Hemley 1988). Wildlife and their parts have been bartered and traded for centuries because of their practical or aesthetic values to man (Hemley 1988, Fitzgerald 1989, and Poten 1991). However, large-scale international wildlife trade was not possible until recent decades thanks to the improvement in transportation and shipping techniques.

Hemley (1988) and Fitzgerald (1989) suggested three major reasons for the booming international market in wildlife and wildlife parts:

1. Improvement in global transportation technologies, especially air transport
2. General affluence brought about by the economic boom after the Second World War
3. More effective wildlife hunting and capturing techniques

All these three factors have interacted and contributed to a lucrative international market in wildlife and wildlife parts.

2.2.1 Grizzly and Polar Bears

International trade of grizzly and polar bears is regulated and restricted by the CITES convention in North America. In Canada, the Import and Export Permits Act is the statute for implementing CITES's protection on these two bear species. In addition to CITES permit, Manitoba's Provincial Wildlife Acts also requires all bear exports to obtain a provincial export permit. Polar bears are also protected by a 1976 joint agreement between Canada, Denmark, Norway, the Soviet Union, and the United States (Fitzgerald 1989; Hummel and Pettigrew 1991). The agreement regulates the harvest of adult males and protects females and cubs throughout the species range. The following is a current list of the additional conservation measures related to polar bears (Fitzgerald 1989; Hummel and Pettigrew 1991): (1) Norway and the Soviet Union prohibit all hunting; (2) Denmark allows hunting of polar bear only by Greenland natives; (3) Canada prohibits harvest of female or cub polar bear, and controls hunting of males by distributing quota among

Inuit and Indians; (4) In the United States, the Marine Mammal Protection Act prohibits import of Polar bear into the country. Hunting is restricted to Alaskan natives living within the range of the species.

2.2.2 Black Bears

North American black bear is the only species of bear on the continent not listed and protected by CITES (Brautigam 1989). Its population is considered to be abundant both in Canada (Canadian Scientific Authority 1991) and the United States (Brautigam 1989, Fitzgerald 1989, Servheen 1989, and Hummel and Pettigrew 1991). Except some isolated populations in Louisiana and all populations in Florida, most populations of the species are considered to be stable or increasing (Sloth 1991). In North America, black bear is a popular game animal (Canadian Scientific Authority 1991) and is commonly managed for sustained yield sport harvest throughout most of its range (Brautigam 1989 and Fitzgerald 1989). Different state, provincial, and territorial governments, however, have their own regulations concerning the trade of black bear and its parts (Sloth 1991).

Like many other species of wildlife, North America black bears are increasingly threatened by the booming local and international illegal trade in their parts (Brautigam 1989, Fitzgerald 1989, Hummel and Pettigrew 1991, Johnson 1991, Poten 1991, and Sloth 1991). There is also a pressing concern among wildlife researchers for the effects of such booming trade on other North American bear species (Servheen 1989, Fitzgerald 1989, Hummel and Pettigrew 1991, and Brautigam, IUCN/SSC Trade Specialist Group, personal communication). Ironically, no research has ever been published to assess the relationship between illegal trade in bear parts, both locally and

internationally, and the North American bear populations. However, a joint project is currently conducted by TRAFFIC USA and the IUCN/SSC Bear Specialist Group to assess the extent of trade in bear parts and derivatives.

An ongoing debate exists on whether or not there is a need to list North American black bear in CITES. Some researchers argue that North American black bear shall be listed in CITES in order to avoid protection and management problems associated with "laundering" [7] (Takimoto 1989, Canadian Scientific Authority 1991, Johnson 1991, and Sloth 1991). While the species is not currently endangered by the trade, the prominent reason for listing it in CITES is to improve CITES's effectiveness in preventing trade in body parts of the six endangered Asian bear species. Others are concerned with the management problems [8] arise as a result of including the species in CITES. While the debate is still going on, a consensus has been reached on the increasing demand for bear parts throughout North America and Asia (Brautigam 1989, Clifton 1989, Gavitt 1989, Fitzgerald 1989, Servheen 1989, Twitchell 1990, Hummel and Pettigrew 1991, Johnson 1991, Mills 1991, and Sloth 1991).

2.3 RISING ILLEGAL TRADE OF BEAR PARTS

Brautigam (1989) claimed that there is an active underground market of bear parts in North American cities with significant Oriental populations. Fitzgerald (1989) contended that gall bladders from North American black bears are sold in the Far Eastern ethnic markets in Los Angeles, San Francisco, New York, and other U.S. cities. Across the border, bear parts are readily displayed and available at Asian medicine stores in major Canadian cities (Hummel and Pettigrew 1991). Several reports have also indicated that demand for bear parts, particularly gall bladder, in China, Japan, or Korea is responsible for the rising poaching activities on North American black bears (Fitzgerald 1989, Brody 1990, Bueckert 1990, Barber 1991, Hummel and Pettigrew 1991, and Sloth 1991). To the belief of the researcher, rising economic value, insufficient trade information, and enforcement difficulties are the three main factors responsible for increasing illegal trade of bear parts.

2.3.1 Economic Incentive

High prices paid by Chinese medicine merchants for bear parts provide tremendous incentive in bear poaching, particularly black bears, in North America (Brautigam 1989, Clifton 1989, Fitzgerald 1989, Gavitt 1989, Servheen 1989, Brody 1990, Twitchell 1990, Barber 1991, Hummel and Pettigrew 1991, and Poten 1991). Reports of bear carcasses with only the paws and gall bladder removed have been documented because of the increasing value of these parts (Brody 1990, Bueckert 1990, Kinnear 1990, Nikides 1991 and Poten 1991). Several reports have made references to the black market prices of bear parts in North America and/or Asia (Brautigam 1989, Fitzgerald 1989, Gavitt 1989, Servheen 1989, Kinnear 1990, Barber

1991, Canadian Scientific Authority 1991, Hummel and Pettigrew 1991, Poten 1991, and Sloth 1991). In Canada, a typical bear is sold for \$250 [9] to local fur dealers. The parts will price at several thousand dollars at retail level abroad (Canadian Scientific Authority 1991). In the United States, the retail price for a bear gall is around \$700 to \$800 in Chicago (Goessman, Special Agent, U.S. Fish & Wildlife Service, personal communication). Once processed and ground into powder form, the gall can be sold from \$7 to \$11 per gram abroad (Gavitt 1989).

In Asia, gall bladder of Asiatic black bear has a wholesale price of around \$12 per gram while the retail price can be a 100 percent mark-up on cost (Gavitt 1989). Servheen (1989) indicated that the retail price for bear gall bladders varies from \$50 to \$3,000 per gram in Japan and Korea. Barber (1991) also contended that a dried bear gall may fetch up from \$167 to \$25,000 by the time it reaches the Asian retail market from Canada. While a bear paw costs around \$200 in Japan, a plate of exotic paw soup may be sold for over \$850 (Clifton 1989). Brody (1990) also confirmed that a single serving of bear paw soup costs more than \$800 in Japan or Korea. With the above prices in mind, it is not difficult to understand the underlying economic reason for poaching bears.

2.3.2 Enforcement Difficulties

Low risk of being caught aggravates the activities of bear poaching and bear parts trading. In fact, Findlay (1989) indicated that the great majority of poachers were caught by accident rather than by design. Twitchell (1990) maintained that there is simply not enough funding and manpower to police, safeguard, and investigate poaching activities in bear parts.

In addition to insufficient funding and manpower, enforcement is hampered by the contradicting permit requirements for black bear among various North American jurisdictions (Wenting 1991 and Goessman, pers. comm.). According to Wenting (1991), while sale of body parts of black bear is legal in 6 of the 11 Canadian jurisdictions, some jurisdictions allow the export of its parts without an export permit. Even when an export permit is required, permits are being issued without any proof of legal acquisition in some jurisdictions. As a result, a situation arises where body parts from some Canadian black bears may be traded in the international market with no proof of origin from Canada. Goessman, in a personal communication to the researcher, also concluded that efforts to fight illegal trade will continue to be handicapped unless a unified system is provided in the United States. In the light of enormous economic gain and minimal risk involved in poaching bears, poachers are bound to continue their operations unless regulations can be enforced with severe penalties.

2.3.3 Lack Of Trade Data

Hemley (1988) pointed out that little reliable historical trade data are available because wildlife trade was largely unregulated until the 1970's. Most researchers agree that the available official data represent only the known or the open portion of the total market (Milliken 1985, Hemley 1988, Brautigam 1989, Clifton 1989, Gavitt 1989, Servheen 1989, Twitchell 1990, and Hummel and Pettigrew 1991). In addition to the known market, they believe that there is an unknown or illegal market where rumours abound and solid information is scarce. Hemley (1988) estimated that the illegal market constitutes 25 to 33 percent of the total international wildlife market. Fitzgerald (1989) and Poter (1991) also reported that around \$1.5

billion of the estimated annual \$5 billion international wildlife trade is illegal.

Since grizzly and polar bears are listed and regulated by CITES, data on legal trading activities of these two species are more readily available in North America (Shoesmith, pers. comm.). However, national information on the exports of black bears and their body parts is scarce since few jurisdictions maintain records for commercial transactions (Wenting 1991 and Sloth 1991). An official report (Table 2) on the legal export activities of black bear from 1985 to 1989 was compiled by the Division of Law Enforcement of the United States Fish and Wildlife Service (Sloth 1991). Unfortunately, the U.S. Fish and Wildlife report provides no understanding to the extent of the underground market since it makes no reference to illegal activities.

In addition to the available data on legal trade, undercover investigations revealed by wildlife law enforcement agencies are the sole indicator available on the extent of the illegal trade in bears and their parts. Table 3 shows some of the available information on poaching or illegal trading activities of bear or its parts in North America. Despite some information is obtained from the common press where varification is not possible, Table 3 reveals an astonishing fact that there is a gap between the reported and unreported trading activities. It is highly likely that there is a gap between the official and underground trade data in Hong Kong.

Table 2

Export Of Black Bear Items From 1985 to 1989 In USA

ITEM	YEAR				
	1985	1986	1987	1988	1989
Live Bear	0	2	5	5	6
Rug	1	2	1	0	13
Skin	0	0	0	0	100
Skull	2	1	0	0	21
Trophy	10	12	6	6	0
Garment	0	0	0	0	0
Fur Pieces	0	0	0	0	0
Partial Skin	0	0	30	0	36
Claw	0	0	0	40	55
Carcass	0	0	1	0	0
Unspecified	0	0	0	0	104
Total	13	17	43	51	335

Source: Sloth (1991), *Background Document To Support The Inclusion Of North American Black Bear In CITES Appendix II.*

Table 3

Major Poaching And Illegal Trading Activities Of Bear In
North America Revealed By Undercover Investigations

YEAR	LOCATION	DESTINATION	BEAR ITEM INVOLVED	REFERENCE
1987	Arizona	N.A.	20,000 Pills Contain Bear Galls *	Brautigam 1989
1987	Montreal	Hong Kong	15 To 16 Black Bears	Twitchell 1990 +
1988	Great Smoky Mountain Region	N.A.	366 Black Bears In A 3-Year Period	Gavitt 1989 & Poten +
1988	Canada	United States	22 Polar Bear Skins	Twitchell 1990 +
1989	North-Eastern United States	Massachusetts And New York	Parts From Approximately 400 Black Bears	Brautigam 1989
1989	Canada	Japan	3 Kilograms Of Bear Gall *	Brautigam 1989
1989	Chicago	N.A.	181 Bear Galls *	Clifton 1989 +
1989	Massachusetts, Connecticut, New Hampshire, And Florida	N.A.	359 Bear Galls With Numerous Carcasses And Skin *	Clifton 1989 +
1990	British Columbia	Yukon	58 Bear Galls *	Bueckert 1990 +
1991	Manitoba	Far Eastern City	More Than 200 Bear Galls And Parts *	Nikides 1991 +
N.A.	Saskatchewan	United States	250 Black Bear Galls	Kinnear 1990
N.A.	Anchorage	N.A.	13 Polar Bear Skins	Poten 1991 +

(Table 3 Continued)

MISCELLANEOUS	REFERENCE
1981 California's wildlife officials discovered that out of the 100 houndsmen they contacted, every subject was involved in illegal commercialisation of bear parts.	Gavitt 1989
1987 Importer inquired about legality of shipping 2500 bear galls * to China.	Gavitt 1989
1989 Some private zoos and game farms in the United States have been involved in shipping live black bear (that are either captive-bred or illegally trapped) to overseas Oriental market.	Gavitt 1989

[N.A.] = Not Available

[*] = Species Not Available

[+] = Information Is Obtained From Common Press Which Cannot Be Verified.

2.4 EFFECTS OF ILLEGAL TRADE ON BEARS

The effect of illegal trade, particularly gall bladder, on black bears or other bear species in North America is unknown. Gavitt (1989), Kinnear (1990), and Hummel and Pettigrew (1991) believed that illegal trade of bear parts can cause significant decline in the number of black bear. Servheen (1989) contended that while the illegal trade is unlikely to have an impact on the survival of the species, it may have the potential to threaten some local populations. Brautigam (1989) also asserted that the current level of illegal trade in black bear is minimal and should pose no threat to its survival. Wenting (1991) and Canadian Scientific Authority (1991) further reinforced this point by indicating that there is no conclusive evidence to support widespread poaching of the species due to the rising value of its parts.

Several researchers indicated that illegal trade of bear parts poses serious threat or, in some cases, extinction to Asian bears (Servheen 1989; Canadian Scientific Authority 1991; Sloth 1991; Brautigam; Lau, Hong Kong's World Wildlife Fund and; Mills, IUCN/SSC Bear Specialist Group, personal communication). Fitzgerald (1989) asserted that the trade of gall bladders has endangered the survival of Asiatic (Himalayan) black bear. Servheen (1989) contended that the trade has the potential to seriously endanger several bear species in Asia. The list includes Himalayan black bear in much of China, Japan, Korea, Taiwan, and Indochina; Brown bear in central and western China; Sloth bear in India, Sri Lanka, and Nepal and; Malayan bear throughout Indochina. Sloth (1991) even maintained that most Asian bear species are threatened with extinction as a result of uncontrolled trade and habitat destruction.

2.5 MANAGEMENT NEEDS IN FUTURE

Declining bear populations in Asia could no longer satisfy the local demand for bear parts by indigenous supply (Servheen 1989 and Gavitt 1989). The author believes that Chinese medicine merchants are likely to look for additional sources elsewhere. The abundant supply of bears in North America is a logical solution to their problem of supply scarcity. Consequently, the demand for bear parts from North America will probably increase in the foreseeable future. Servheen (1989) was gravely concerned whether or not black bear and other bear species in North America can sustain the insatiable future demand for bear parts from Asian consumer countries. With the above consideration in mind, wildlife management agencies in North America must be prepared to regulate the illegal trade in bear parts. Unfortunately, existing studies provide little assistance.

2.6 SUMMARY

Little information is available on the cultural aspect of bear parts consumption in the Chinese traditions. Scarcely has any research addressed the illegal trade in bear parts in major Asian consumer countries, nor its relationship with the demand for North American bear parts. Results from this pioneering research on the cultural aspect of consumption will enhance the information of the wildlife management agencies. Data obtained on the illegal trading activity in Hong Kong and its relationship with the demand for North American bear parts can provide insights to the situation. Management agencies can then plan and implement policies on trade in bears and their parts accordingly.

Chapter III

CONSUMPTION OF BEAR PARTS

3.1 NORTH AMERICAN PERSPECTIVE

Wildlife in North America is mainly utilized for recreational purposes, both consumptive and non-consumptive (Gavitt 1989). Brautigam (1989) and Sloth (1991) contended that sport hunting (from which the meat is consumed and hides are used as trophy mounts or rugs) and claws for jewelry and artifact are the primary commercial values for bears in North America. Historically, bears have been poached for trophies (Clifton 1989). Nowadays, poachers are interested in other bear parts, particularly gall bladders and paws, due to their rising economic values (Brautigam 1989, Clifton 1989, Fitzgerald 1989, Gavitt 1989, Kinnear 1990, Twitchell 1990, Canadian Scientific Authority 1991, Hummel and Pettigrew 1991, and Johnson 1991).

3.2 CULTURAL ASPECT OF CHINESE CONSUMPTION

Gavitt (1989) indicated that animal parts are basically used in the Far East for medical rather than aphrodisiac purposes. In fact, flora and fauna are so often used in traditional Chinese/Oriental medicine that the popularity is analogous with the use of aspirin in Occidental medical practise (Gavitt 1989). Dickinson (1986) also contended that traditional Chinese medicine is so popular that about 33 percent of the world's population has been practising it for centuries.

No research is available on the traditional uses of bear parts by Asian in North America or abroad. Milliken (1985), Brautigam (1989), Fitzgerald (1989), Hummel and Pettigrew (1991), Johnson (1991), Poten (1991), and Sloth (1991) reported the usages of bear parts as follows:

1. Traditional medicine prescribes bear gall bladder for digestive problems; treatment of liver, gall bladder, spleen, and stomach ailments; blood purification; inflammation; eye problems; backaches; fever; delirium from extensive burns; skin lesions; swelling and pain caused by trauma, sprains, fractures, and hemorrhoids; "internal cure-alls"; or aphrodisiac
2. Paw is a much sought-after delicacy in several Asian countries including Hong Kong
3. Skin is used for clothing
4. Meat and fat for food consumption
5. Claw and tooth for necklaces and other jewelry

Other than the above known uses, no study has ever been done to provide a detailed review on the cultural aspect of Asian consumption of bear parts. Nor is there any study available to focus on the cultural aspect of Chinese consumption. As a result, bear gall bladder is commonly believed to be widely used as panacea (Barber 1990 and Brody 1990) or aphrodisiac (Gavitt 1989 and Poten 1991) in Asia.

The usefulness of animal parts as food, drug, and clothing has been known in China for thousands of years. In addition to being used as food and clothing, body parts of bear *Xiong* are primarily consumed for their medicinal values in the Chinese culture (Cheung, Confidential Informant A and B, pers. comm.). As a result, available literature focuses solely on the

medicinal uses of bear parts (Chen 1930, Pan 1936, Lin 1959, CHBC 1969, Li 1961, Li 1965, IYWSCBS 1972, Chung 1974, Read 1976, ZGYYDWZXZT 1979, Yang and Tie 1980, Li 1981, Lin 1981, Wang 1982, Chang and But 1987, and Cui 1989). Table 4 provides the properties and examples of application for selected bear parts. According to Read (1976), no comprehensive record has been kept on the properties and applications of different bear parts until the Ming dynasty by Li Shih-chen (A.D. 1518-1593). Li compiled and included such information into his authoritative materia medica for Chinese medicine called *Pen Ts'ao Kang Mu* or the *Great Herbal* (Kan 1965, Chen 1968, Huard and Wong 1968, Li 1974, Read 1976, and Chang et al. 1985). Many subsequent materia medica were produced under the influence of this original text (Chang et al. 1985). Even today, *Pen Ts'ao Kang Mu* is considered as an important reference for Chinese medicine. It has been translated into different languages and numerous reprints have appeared.

The history of traditional Chinese medicine dates back to 2838 B.C., approximately 100 years after the dawn of Chinese civilization (Kan 1965). It does not belong to the category of folk medicine (Li 1974). It is a well-organized system of medical knowledge based on observation, experiments, and clinical trials (Li 1974 and Chang et al. 1985). Chinese medicine is still used as a practical medical treatment by hundreds of millions of Chinese all over the world. Chang et al. (1985) contended that with further research and development, traditional Chinese medicine has the potential to fill many blank spots in modern medicine.

Table 4

Properties And Applications Of Selected Bear Parts

BEAR PART	PROPERTY	EXAMPLE OF APPLICATION
Blood <i>Xiong Xue</i>	N.A.	Nervousness in children
Bones <i>Xiong Gu</i>	N.A.	Rheumatism of joints
Gall Bladder <i>Xiong Dan</i>	Bitter, cooling, and nonpoisonous	Nose ulcers and all evil sores, suppressing inflammation and killing pains
Grease <i>Xiong Bai</i>	Sweet, slightly cooling, and nonpoisonous	Remove numbness and total loss of sensation, blacken and promote growth of hair
Meat <i>Xiong Rou</i>	Sweet, bland, and nonpoisonous	Beri-beri with paralysis
Paw <i>Xiong Zhang</i>	N.A.	Keep off colds and benefit the vitality
Spinal Cord <i>Xiong Nao Sui</i>	N.A.	Deafness, giddiness, and remove dandruff

[N.A.] = Not Available

Source:

Pan (1936), Piao Chun Yao Hsing Ta Tzu Tien. Li (1965), Pen Tsao Kang Mu (Vol. 2). IYWSCBS (1972), Chung-Kuo Yao Hsuen Ta Tze Tien. Read (1976), Chinese Materia Medica: Animal Drugs. Li (1981), Pen Tsao Kang Mu: Xiao Dian Ben (Vol. 4). Cui (1989), Chung Yao Ta Chuan.

All three Chinese medicine merchants interviewed by the researcher contended that only gall bladder and paw are sought after in Hong Kong (Confidential Informant A, B, and C, pers. comm.). All of them have been in the business for over 25 years; however, they acknowledged that other bear parts are rarely seen. They also contended that there is no existing market for live bears in Hong Kong. Since gall bladder and paw are the two common bear parts traded in Hong Kong, they warrant a detailed discussion in the following subsections.

3.2.1 Bear Paw

Bear paw *Xiong Zhang* is one of the most sought after bear parts in Hong Kong. Being one-of-the-eighth most precious delicacies among the Chinese cuisine, bear paw is primarily consumed as food rather than as medicine in Hong Kong (Cheung, Confidential Informant A and C, pers. comm.). When used in Chinese medicine, bear paw is commonly prescribed as a treatment to ward off colds and to benefit the vitality (Table 5). Mr. Cheung, Chang-ren (a practitioner of Chinese medicine) confirmed the authenticity in the medicinal values of bear paw. However, he contended that other substitutes with similar applications, such as Ginseng and Royal Seng, are readily available in the market.

Table 5
Common Medicinal Uses Of Bear Paw

REFERENCE	MEDICINAL USES	
	Wards Off Colds	Benefits The Vitality
IYWSCBS 1972	X	X
Li 1965	X	X
Li 1981	X	X
Pan 1936	X	X
Read 1976	X	X
ZWWSPJ 1989	X	X

3.2.2 Bear Gall Bladder

In Hong Kong, only dried bear gall bladder *Qian Xiong Dan/Qian Dan* (Figure 3) is traded in the market. Raw/Wet bladder is not available due to transportation and climatic considerations [10]. Dried bear gall bladder comes in various shapes, sizes, and weight. It averages from 38 to 190 grams in weight [11], 10 to 20 centimetres in length, and 5 to 8 centimetres in width. Only the dried bile *Dan Rou* [12] is used in the Chinese medicine. Customers usually ask for a small quantity rather than the whole bladder due to financial consideration. Dried bile in crystallized (Figure 4a and 4b) or pasty (Figure 4c) forms without pre-packaging are commonly available in the Chinese medicine shops. They can be obtained after removing the hardened protective membrane of the gall bladder. Dried bear bile is also available in capsule or small bottle packages of 0.38 to 0.76 gram in the market (Figure 5).

Table 6 provides the medicinal uses [13] of bear gall bladder commonly cited in the literature of Chinese medicine. Several pharmacological and clinical studies have confirmed the following medicinal values of bear gall bladder (ZGYDYZXZT 1979, Lin 1981, Chang & But 1987, and Cui 1989): (a) Analgesic; (b) Anthelmintic; (c) Antidotal; (d) Antiphlogistic; (e) Antiphretic; (f) Convulsions (especially infantile convulsion); (g) Jaundice; (h) Vision improving and; (i) Ulcers. Among all its cited uses, bear gall bladder is primarily consumed for its antiphlogistic and analgesic applications in Hong Kong (Cheung, Confidential Informant A, B, and C, pers. comm.). Antipyretic, antidotal, and anthelmintic are three less common uses. These sources also confirmed that bear gall is not prescribed as panacea or aphrodisiac in Hong Kong. Confidential Informant C,

however, believed that some users may take it for these two purposes. Substitutes with similar medicinal values of bear gall bladder are also readily available in Hong Kong. Table 7 provides some possible substitutes for the antiphlogistic and analgesic applications of bear gall bladder.

Basically, bear gall bladder can be consumed in two ways:

1. Practitioners of Chinese medicine prescribe it alone or together with other herbs and substances for treatment
2. As one of the ingredients in a ready-to-be-taken or prepared medicine **Cheng Yao** [14]

Bear gall bladder is usually consumed in minimal amount for whatever purpose. The common dosage ranges from 0.10 to 2.40 grams per one internal or external application (ZGYDZWZXT 1979, Chang & But 1987, and Cui 1989). The dosage tails down when it is used in prepared medicine. Rather than commonly prescribed by doctors, bear gall bladder is more often used in prepared medicines (Pan 1936, Cui 1989, and Confidential Informant B, pers. comm.). Appendix E provides some examples of the prepared medicine with bear gall bladder. The majority of these examples are produced in China. They are available in most of Hong Kong's major drug stores and/or Chinese medicine shops. As one of the ingredients in these medicines, bear gall is mainly included for its antiphlogistic, antidotal, analgetic, or antipyretic properties (Zhu 1989 and Au Yeung, personal files).



Figure 3: Dried Bear Gall Bladder



Best Quality
4a

Common Quality
4b

Poor Quality
4c

Figure 4: Three Common Qualities Of Dried Bile



Figure 5: Dried Bile In Capsule Or Small Bottle Packages

Table 6

Common Medicinal Uses (Properties/Indications) Of Bear Gall

REFERENCE	MEDICINAL USES					
	Angina Pectoris	Anthel- mintic	Anti- asthmatic	Anti- dotal	Anti- phlogistic	Anti- pyretic
Chang & But 1987	-	-	-	X	X	X
CHBC 1960	-	-	X	X	X	X
Chen, Jiang-Zhou	X	X	-	-	X	X
Chen 1930	-	X	-	-	-	X
Cheung, pers. comm.	-	-	-	X	-	X
Chung 1974	-	-	-	X	X	X
Cui 1989	-	-	-	-	X	-
Hume, Edward H.	-	X	-	-	-	X
IYWSCBS 1972	-	X	-	-	-	X
Confidential Informant A	-	X	-	X	-	X
Li 1961	-	-	X	X	X	X
Li 1965	-	X	-	-	X	X
Li 1981	-	X	-	-	-	-
Lin 1959	-	X	-	X	-	X
Lin 1981	-	X	-	X	-	X
Pan 1936	-	-	-	-	X	-
Read 1976	-	-	-	-	X	-
Wang 1982	-	-	-	-	-	-
Yang & Tie 1980	-	-	-	-	-	-
ZGYDZXZT 1979	-	-	-	-	-	-

Table 6 (Continued)

REFERENCE	MEDICINAL USES					
	Aphro- disiacs	Bile Supplement	Calm Oneself	Clear The Mind	Digestive Problem	Eye Diseases & Vision Improving
Chang & But 1987	-	-	X	-	-	X
CHBC 1960	-	-	-	-	X	X
Chen, Jiang-Zhou	-	-	-	X	-	X
Chen 1930	-	-	-	X	-	X
Cheung, pers. comm.	-	-	-	-	-	X
Chung 1974	-	-	-	-	-	X
Cui 1989	-	-	-	-	-	-
Hume, Edward H.	-	-	-	X	-	X
IYWSCBS 1972	X	X	-	-	-	X
Confidential Informant A	-	-	-	-	-	X
Li 1961	-	-	-	-	X	X
Li 1965	X	X	-	X	-	X
Li 1981	-	-	-	X	-	X
Lin 1959	-	-	X	-	-	-
Lin 1981	-	-	X	-	-	-
Pan 1936	-	-	-	-	-	-
Read 1976	-	-	-	-	-	X
Wang 1982	-	-	-	-	-	-
Yang & Tie 1980	-	-	-	X	-	X
ZGYDZXZT 1979	-	-	-	-	-	X

Table 6 (Continued)

REFERENCE	MEDICINAL USES					
	Gall Stone Dissolution	Infantile Convulsions	Jaundice	Quietens The Liver	Sores & Analgesic	Various Ulcers
Chang & But 1987	-	X	-	-	X	X
CHBC 1960	X	X	X	-	X	X
Chen, Jiang-Zhou	-	X	X	X	X	X
Chen 1930	-	X	X	X	-	X
Cheung, pers. comm.	-	-	-	-	X	-
Chung 1974	-	-	X	X	X	X
Cui 1989	-	-	-	-	X	-
Hume, Edward H.	-	X	X	X	X	X
IYWSCBS 1972	-	X	-	-	X	X
Confidential Informant A	-	X	-	-	X	-
Li 1961	X	X	-	X	X	-
Li 1965	-	X	X	X	-	X
Li 1981	-	-	-	X	-	X
Lin 1959	-	X	X	-	-	X
Lin 1981	-	X	X	-	-	X
Pan 1936	-	-	-	-	-	-
Read 1976	-	-	X	-	-	-
Wang 1982	-	-	-	-	-	X
Yang & Tie 1980	-	-	X	-	-	-
ZGYDZWZXT 1979	-	-	-	-	-	-

[X] = YES; [-] = NO

Table 7

Some Medicinal Substitutes To Bear Gall Bladder

SCIENTIFIC NAME	COMMON NAME (Chinese)
Analgesic Application	
<i>Radix angelicae</i>	<i>Bai Zhi</i>
<i>Stephania sinica</i>	<i>Jin Bu Huan</i>
<i>Tuber corydalis yanhusuo</i>	<i>Yuan Hu/Yan Hu Suo</i>
Antiphlogistic Application	
<i>Andrographis paniculata</i>	<i>Chuan Xin Lian</i>
<i>Lonicera japonica</i>	<i>Jin Yin Hua</i>
<i>Radix isatidis</i>	<i>Ban Lan Gen</i>

Source: Cheung, personal communication.

Chapter IV

TRADING ACTIVITIES IN HONG KONG

The import, export and possession [15] of endangered bear species, whether alive or dead, are subject to permit control by the Agriculture and Fisheries Department in Hong Kong. All permits are issued and regulated in accordance with the Animals and Plants (Protection of Endangered Species) Ordinance [16] which gives effect to CITES. Trade of the parts and derivatives of these scheduled bear species are also regulated by the same Ordinance. The Ordinance was enacted since 1976 and was amended periodically to keep up with the changes in CITES regulations. Table 8 shows the complete list of scheduled or protected bear species in Hong Kong.

No permit [17] from the Agriculture and Fisheries Department is currently required to import, export, and possess North American black bear or its parts since it is not protected by the Ordinance. However, the situation is going to change soon as the government is on the process of adding the species into the Ordinance. Even though the species is only currently listed in CITES Appendix III by Canada, Hong Kong government intends to make an exception (current policy excludes any Appendix III species from the Ordinance) and to include it into the list of scheduled bear species (Chan, Department of Agriculture and Fisheries, personal communication). In doing so, the government hopes to prevent deliberate misidentification of species of origin to circumvent CITES protection of the

six endangered Asian species. The revised Ordinance is expected to become effective in the spring or summer of 1992. Unfortunately, CITES Appendix III listing will still have little salutary effect on regulating the trade in other Asian countries (Brautigam, pers. comm.).

4.1 OFFICIAL DATA

According to the Department of Agriculture and Fisheries, skin/trophy, paw, and gall bladder are the commonly traded bear parts in Hong Kong. Official data reveals that both legal and illegal trade in bear or its parts are insignificant during the past years (Table 9, 10, and 11). Table 9 shows that only 3 rug/skin were legally identified and recorded as trade from 1988 to 1990. Others were legal transactions, such as donation and bears on transit, rather than trade in its business sense. Although no official data are available on the illegal export activity, Table 10 and 11 show that there is minimal illegal import and possession of bear parts in recent years. No illegal trade or possession of live bear has been documented in recent years.

4.2 SAMPLING SURVEY

Surprisingly, 76 out of the 80 (95 percent) sampled Chinese medicine shops were found to carry bear gall bladder (Figure 6). Some of these shops even openly display their stocks on the window (Figure 7). Bear gall bladders are often kept in a container filled with Glutinous Rice *Nuo Mi* [18]. A bear gall bladder is often sold at a cheaper price than its dried bile on a dollar per gram basis. Available data indicated a \$1 to \$14 per gram price difference between dried bile and a whole bladder. Retail price, dried bile and whole bladder inclusive, ranges from \$4,000 to \$34,000 per kilogram with a sample mean of \$17 per gram.

Table 8

Scheduled/Regulated Bear And Related Species In Hong Kong

SCIENTIFIC NAME	COMMON NAME
<i>Ailuropoda melanolcuca</i>	Giant Panda
<i>Helarctos malayanus</i>	Malay Sun-Bear, Honey Bear, Malay Bear
<i>Selenarctos/Ursus thibetanus</i>	Asiatic Black Bear
<i>Tremarctos ornatus</i>	Spectacled Bear
<i>Ursus arctos</i>	Brown Bear
<i>Ursus/Thalarctos maritimus</i>	Polar Bear

Import, export, and possession of scheduled bear species including their parts or derivatives into and out of Hong Kong are regulated in accordance with the Animals and Plants (Protection of Endangered Species) Ordinance. Bear Parts or derivatives include substantially complete, or parts of, dead specimens (either in natural form, stuffed, chilled, preserved, dried or treated), and meat.

Source:

Agriculture and Fisheries Department (1988), **Endangered Species Advisory Leaflet No. 2**. Laws of Hong Kong (1989), **Animals and Plants (Protection of Endangered Species) Ordinance, Chapter 187, Revised Edition**. PP. 14 & 25.

Table 9

Legal Imports and Exports Of Bear/Bear Parts In Hong Kong

Legal Imports Of Bear/Bear Parts To Hong Kong

YEAR	PARTS	BEAR SPECIES	QUANTITY	ORIGIN	DESCRIPTION
1989	Rug/Skin	<i>Ursus maritimus</i>	2	Canada	Trade
1990 *	Live bear	<i>Ursus arctos</i>	4	USSR	USSR's circus bears

Legal Exports Of Bear/Bear Parts From Hong Kong

YEAR	PARTS	BEAR SPECIES	QUANTITY	DESTINATION	DESCRIPTION
1988	Live bear	<i>Selenarctos thibetanus</i>	1	China	Donation
1988	Live bear	<i>Helarctos malayanus</i>	1	China	Donation
1988	Skin	<i>Ursus arctos</i>	1	China	Museum
1989	Rug/Skin	<i>Ursus maritimus</i>	1	Canada	Trade
1990 *	Live bear	<i>Ursus arctos</i>	4	Singapore	USSR's circus bears
1990 *	Live bear	<i>Helarctos malayanus</i>	1	Thailand	Donation

[*] = Data for 1990 is updated to November 22 only

Source: Department of Agriculture and Fisheries, Hong Kong.

Table 10

Illegal Imports Of Bear/Bear Parts To Hong Kong

YEAR	PARTS	BEAR SPECIES	QUANTITY	ORIGIN	DESCRIPTION
1989	Skin	<i>Ursus arctos</i>	1	Unknown	Unclaimed package
1989	Rug	<i>Ursus maritimus</i>	1	Canada	On transit
1989	Gall Bladder	<i>Ursus maritimus</i>	2	Canada	On transit
1989	Paw	<i>Selenarctos thibetanus</i>	4	China	Not available

Source: Department of Agriculture and Fisheries, Hong Kong.

Table 11

Illegal Possession Of Bear/Bear Parts In Hong Kong

YEAR	PARTS	BEAR SPECIES	QUANTITY	ORIGIN	DESCRIPTION
1987	Paw	<i>Selenarctos thibetanus</i>	12	N.A.	N.A.
1989	Paw	<i>Selenarctos thibetanus</i>	2	N.A.	N.A.
1989	Paw	<i>Ursus arctos</i>	20	N.A.	N.A.
1990 *	Paw	<i>Ursus arctos</i>	1	N.A.	N.A.

[*] = Data for 1990 is updated to November 22 only

[N.A.] = Not Available

Source: Department of Agriculture and Fisheries, Hong Kong.

Of Chinese Medicine Shops

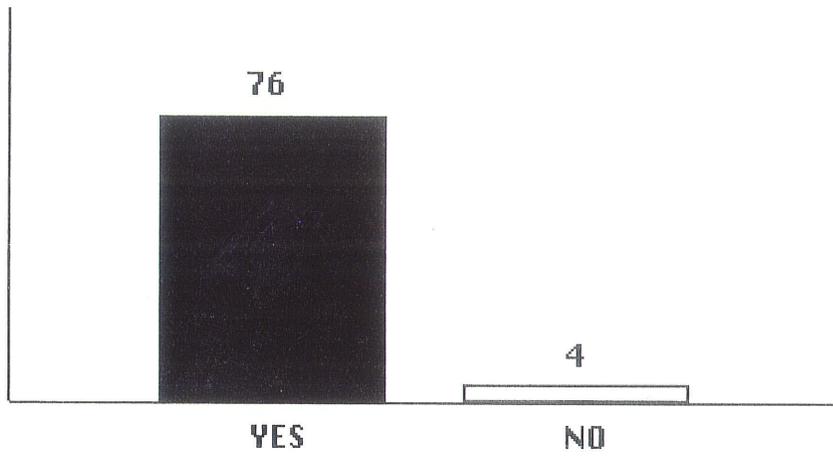


Figure 6: Sampled Chinese Medicine Shops With Bear Gall



Figure 7: Bear Galls On Display

All but 4 of the 76 sampled shops with bear gall were willing to provide the origins of their stocks [19]. Figure 8 provides a distribution of the origins. Over three-fifths (63 percent) of the stocks are originated from China. In fact, north-eastern part of China is often mentioned as the origin of these bear gall bladders. India and Nepal constitute another 24 percent of the supply among these shops. All five shops maintaining Russia as the origin indicated their bear gall bladders are originated from Siberia. Only 4 percent of these shops (3 out of 72 shops) claimed that their stocks are originated from the United States, but none from Canada.

Sixty-one out of the 76 shops have at least 3 to 5 bear gall bladders on display. Others even have more. However, it is impossible to tell whether or not these shops may have stored other bear gall bladders which are not on display. Table 12 provides the extrapolation on the total number of bear gall bladders available in Hong Kong based on two figures: (a) the percentage of Chinese medicine shops with bear gall bladder and (b) the number of bear gall bladder in each shop. Projecting from these two figures, a minimum of 410 to 690 kilograms of bear gall bladders are available in the market. in Hong Kong market. Both Confidential Informant B and Mr. Cheung, however, asserted that some bear gall bladders available in the market are counterfeits. Because of gall bladder's high economic value and the absence of readily available method to distinguish genuineness [20], some Chinese medicine merchants are selling other animal bladders (such as those from cow, pig, and sheep) as bear gall bladders.

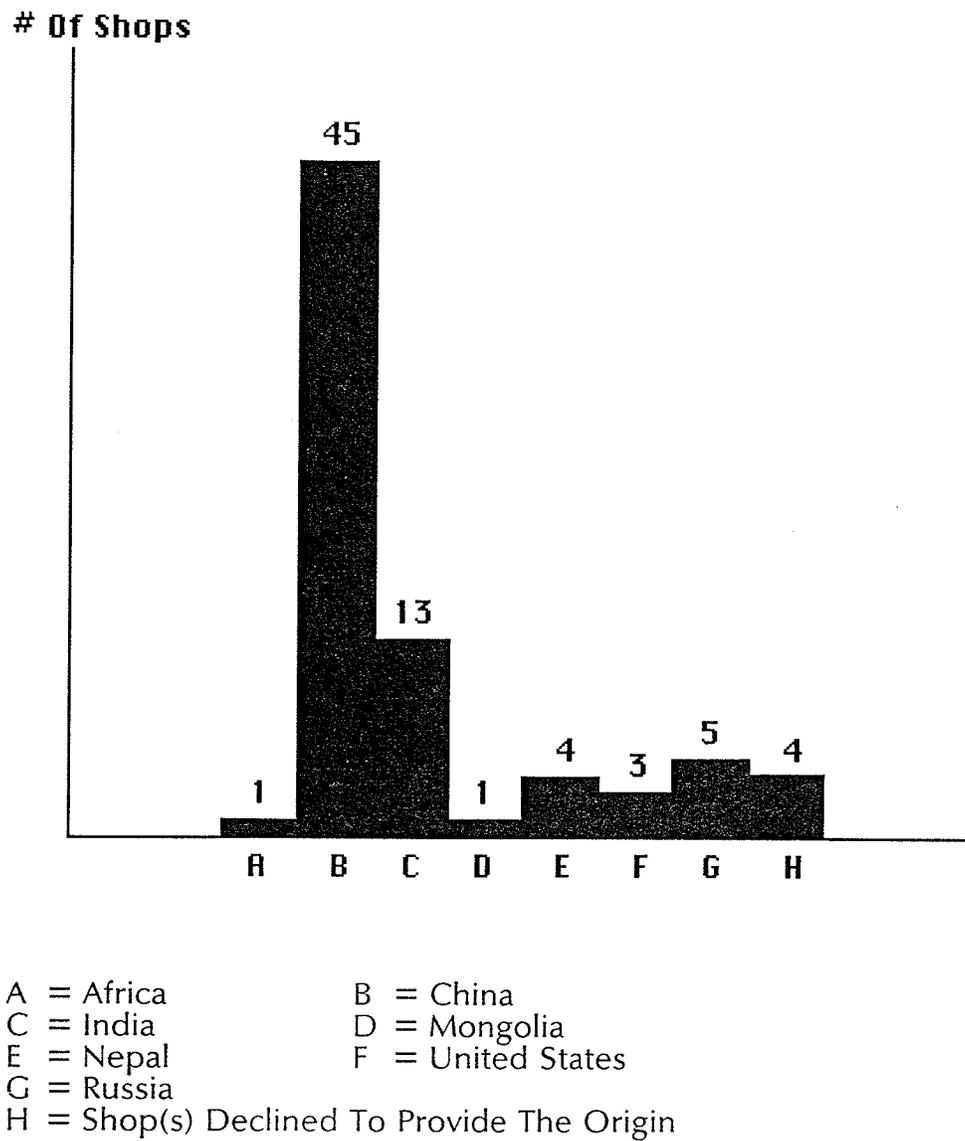


Figure 8: Bear Gall Bladder--Distribution Of Origins

Table 12

Projection* On The Average Number Of Bear Gall Bladder
Available In Hong Kong

A	B				
	1	3	5	7	9
50	636	1908	3180	4452	5724
60	764	2290	3816	5343	6869
70	891	2672	4452	6233	8014
80	1018	3053	5088	7124	9159
90	1145	3435	5724	8014	10304
95	1209	3626	6042	8459	10876

[A] = Percentage of Chinese medicine shops carry bear gall bladder
(95 percent by the survey)

[B] = Number of bear gall bladder in each shop (3 to 5 observed)

[*] = Based on a total number of 1272 Chinese medicine shops

4.3 CHINESE MEDICINE MERCHANTS

Bear paws used to be openly available at some restaurants in the past. Most of these paws came from the north-eastern provinces in China (Confidential Informant A and B, pers. comm.). Nowadays, bear paws are no longer available at the restaurants. Scarcity in supply and the tightened enforcement effort [21] have displaced the open market. In fact, the supply has become so scarce that the limited supply retires to a "private" or "closed" market (Confidential Informant A and C, pers. comm.). To obtain bear paws, buyers must have connection with the suppliers and are willing to pay for higher prices. Unfortunately, no further information could be obtained on the supply and price in this market.

It is bear gall bladder rather than bear paw that constitutes the majority of the trading activities in Hong Kong (Confidential Informant A, B, and C, pers. comm.). Movement and trade of bear gall bladder is conducted without going through the formal trade channel (Confidential Informant A, B, and C, pers. comm.). Needless to say, Chinese medicine merchants obtain their bear gall bladders without permit. According to Confidential Informant C, high profit margins and minimal chance of being caught explain why traders are so willing to smuggle their bear parts into Hong Kong. The researcher also suspects that even traders apply for an export permit, most governments in Asia will not approve the application since all Asian bear species are listed in CITES Appendix I or II.

4.3.1 Origin Of Supply

All three Confidential Informants contended that the majority of bear gall bladders available are originated in Asia. They maintained that Burma, China, India and Nepal are the four main source countries. Both Confidential Informant A and B acknowledged that their bear gall bladders are originated from India, Burma, or Nepal. Confidential Informant C, however, indicated that China is his only source of supply. According to Confidential Informant B, not all bear gall bladders originated from India are obtained inside the country. Some of them might actually be acquired from the neighbouring countries (such as Burma and Nepal) in the Himalayan region. Collection and smuggling network established by Indian smugglers are suggested to be responsible for channelling the stock of Burma and Nepal to India.

Although evidence suggests that increasing number of bear parts, particularly those from North American black bear, are sent to Asia, bear gall bladders from North America are not common in Hong Kong (Confidential Informant A and B, pers. comm.). North American bear gall bladders were once available to the shop of Confidential Informant B in 1987. He had reluctantly returned the whole stock to the supplier because no customer was willing to try them. With dried bile having the textural appearance of dark and sticky paste, acceptability and, subsequently, the market value of North American bear gall bladders was hindered. In fact, bear gall bladder with dark sticky paste as its dried bile is the worst quality available in the market. Difference in climate and in preparation method are the two probable factors suggested to cause the specific textural appearance (Confidential Informant B, pers. comm.).

Only Confidential Informant A and B were willing to disclose the information on their supply linkages. Based on their information, together with those obtained during the survey, the researcher is able to sketch the supply linkages in Hong Kong. The market is supplied by two types of suppliers/smugglers: organized and casual. In essence, organized smugglers are those who have their own established network of supply and demand. Casual smugglers are those who do not have an established network. They merely smuggle several bear gall bladders at a time into Hong Kong making a profit in reselling or for self consumption. Essentially, there are four main supply linkages exist in the market (Figure 9):

1. Chinese medicine merchants obtain their bear gall bladders directly from the smugglers (organized or casual) and sell to customers
2. Chinese medicine merchants obtain their stocks indirectly from the smugglers through another Chinese medicine merchant who also act as the wholesaler and sell to customers
3. Chinese medicine merchants act as a casual smuggler and smuggle their own supply from China or, in some cases, other countries and sell to customers
4. Causal smugglers smuggle for personal consumption or to sell to friends and relatives

Both Confidential Informant A and B expressed that their stock are supplied by organized smuggler. Stocks of various quality and quantity (3 to 20 kilograms) are brought to their shops by the organized smuggler without prior notice or fixed time intervals. Depending on the quality, individual merchant will select as many bladders as one wishes at each visit. Usually, Confidential Informant B will pick 1 to 2 kilograms. However, he admitted

that larger stocks (up to 20 kilograms) were sometimes bought from the smuggler due to demand or quality consideration. Confidential Informant A refused to provide information on his quantity purchase.

Drawing from their experience in the business, all three merchants contended that Korea, Japan, and Taiwan are the three main importers of bear gall bladder in Asia (Confidential Informant A, B, and C, pers. comm.). However, none of them was willing to further discuss this particular subject except the fact that bear gall bladders are mainly used in the production of prepared medicines. They also indicated that the market for bear gall bladder is unstable in Hong Kong. Trade volume has been fluctuating with changing supply and demand situations. Even though it is difficult to visualize a trade pattern, Confidential Informant B suggested that the annual total trade volume (local consumption and export but excluding re-export) in Hong Kong varied from 200 to 300 kilograms in 1988 and 1989. Based on the above sales volume, at least 3,500 to 5,300 bears should have been killed within the period to furnish the trade in Hong Kong. Information obtained from the Informants should provide a representative picture of the market situation in Hong Kong since their total average annual sales volume was around 31 to 51 kilograms [22] from 1988 to 1989.

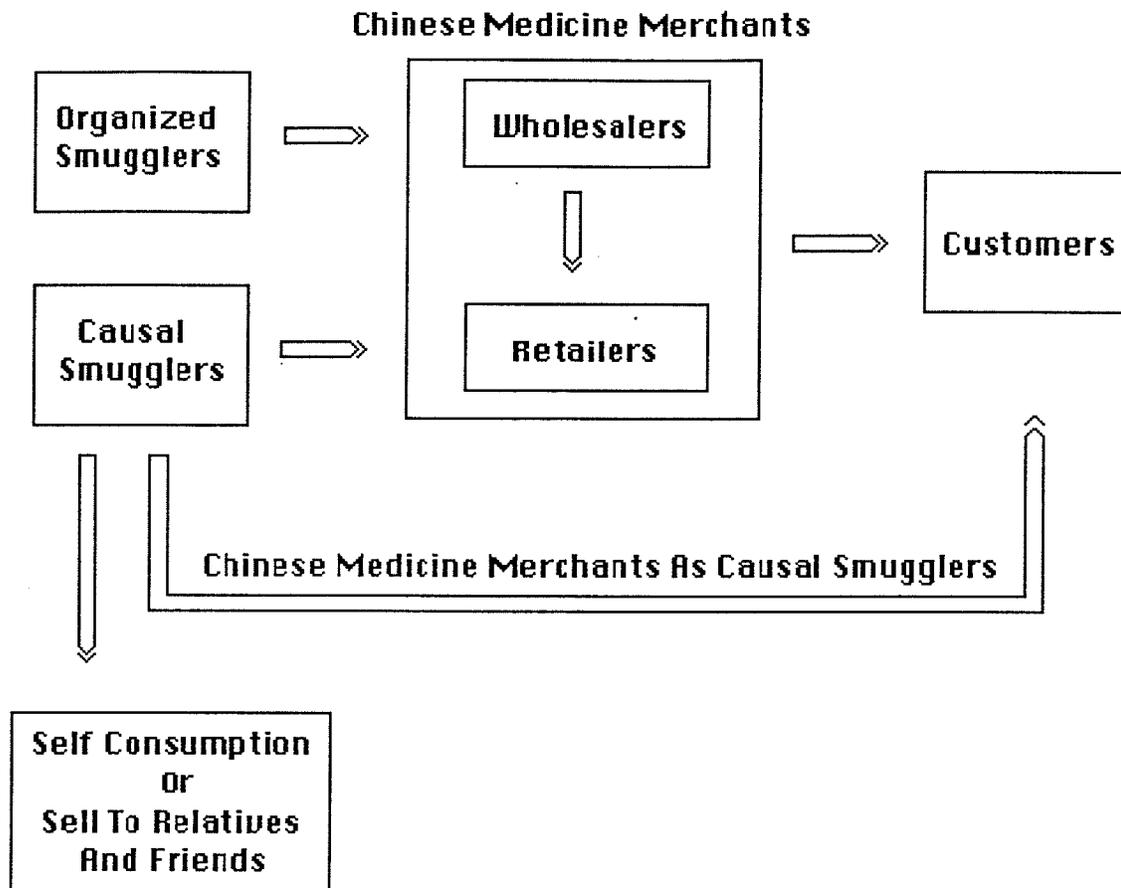


Figure 9: Bear Gall Bladder--Supply Linkages In Hong Kong

4.3.2 Prices

Bear gall bladders are indistinguishable by species or origin (Confidential Informant A, B, and C, pers. comm.). Interestingly, all genuine bear gall bladders are found to possess the same medicinal values (Cheung, Confidential Informant A, B, and C, pers. comm.). Texture and color [23] are two criteria used to determine quality and, subsequently, price in the market (Confidential Informant A, B, and C, pers. comm.). Cui (1989), however, contended that further research is needed to identify the medicinal difference(s) among bear gall bladders with different qualities. There is also no medicinal or price difference between old and new stock as long as the dried bile is kept dried and crispy (Confidential Informant B and C, pers. comm.). Storage is essential in a sense that no remedial action is available after the dried bile has absorbed excessive moisture and turned into the pastry form (Confidential Informant A, B, and C, pers. comm.). Storing the bear gall bladders in an enclosed box filled with Glutinous Rice is the best way to maintain their quality (Confidential Informant B and C, pers. comm.).

Three common categories of bear gall bladder are available at the three merchants' shop. There is a price gap between bladders of the best quality (which is commonly referred as *Jin Si Xiong Dan*) and those of the worst quality. Their retail prices range from \$11 (worst quality) to \$23 per gram (best quality). In order to compensate the weight of the useless protective membrane, a bear gall bladder is usually sold at a cheaper price than its dried bile (Confidential Informant A, B, and C, pers. comm.). Confidential Informant C, however, stressed that price may not be a good indicator of quality in the retail market. For various reasons (such as seller's

high mark-up on cost) consumers might be paying unreasonable high prices for bear gall bladders of the worst quality or vice versa.

4.3.3 Trend Of Trade

In Hong Kong, two basic trends are found for the trade in bear paw and gall bladder (Confidential Informant A, B, C, pers. comm.). On the one hand, all three merchants contended that the supply of gall bladder and paw is becoming scarce in recent years. Declining bear populations due to over-exploitation and increasing government control are the two prime reasons suggested to be responsible for the supply scarcity. On the other hand, the price is rising constantly mainly as a result of the scarcity in supply.

Information was also obtained from three sources concerning the existence of bear farms/ranches (Window To The World 1989, Confidential informant B and Wong, a high school teacher, personal communication). According to these sources, bear bile is extracted from captive bears raised in these farms. The bile obtained is then processed into dried bile and is sold to the market. Without providing an estimate for the total number of existing bear farms in Asia, Confidential Informant B contended that a few of them are now operating in China, India, and Nepal.

Ming Pao [24] provided a special photographic feature (Window to the World) on a bear ranch in the Sichuan province of China. Inside this report, the facility is asserted as China's first "large-scale" [25] bear research ranch. In addition to providing training to bears, the farm extracts bear bile and processes it into dried bile, according to the newspaper column.

The existence of a bear farm in China was also confirmed by an individual visiting the Sichuan province of China (Wong, pers. comm.). Mr. Wong was introduced to this bear farm during a trip to Sichuan in the summer of 1990. Unfortunately, the researcher is unable to clarify the relationship between the bear farm described by Ming Pao and that by Mr. Wong because no exact location can be identified. Approximately 100 Asiatic black bears are raised in captivity inside the farm. Movement of the bears is obstructed since each bear is kept in a 4 cubic feet iron cage (Figure 10). Each cage is also elevated around 2 feet above the ground by concrete stands for easy daily cleaning and maintenance. Moreover, all these cages are uniformly aligned inside a big farm house. Except being confined to their cages, these bears are living in a relatively decent and sanitary environment.

Chicken and sheep are the main meat diet of these bears. It is a self-sustained farm since all nutritional requirements of the bears are raised or grown inside the farm. Usually, bile is extracted from each bear on a three-month cycle. Information on the technique or process of bile extraction is not available except the fact that no anaesthesia is applied during each extraction. Contingent on the health condition of individual bear, the length of the extraction cycle varies. Very often, a bear will be killed when it is no longer capable to produce the required quantity of bile. However, no information is obtained on the method of disposing the dead bears or their body parts.



Figure 10: Bears Raised Inside A Ranch In China

Source: Wong, personal communication.

Chapter V

TRADE IN BEAR PARTS: CONCERN AND OPINION

Poaching of North American black bears for body parts has raised the concern of wildlife agencies in North America. An effective and balanced management policy is required for controlling and regulating the trade. Before such a management policy is made possible, it is essential for the wildlife manager to identify as many existing issues and concerns as possible. As a result, one can incorporate this information into the decision-making process. A mailout survey was used in this study to identify various concerns and opinions regarding trade in North American bear parts. Opinions on the effectiveness of CITES regulations, existing concerns or issues regarding the trade in bear parts, and possible solutions to regulate the trade are obtained and presented in the following sections.

5.1 INTERNATIONAL TRADE CONTROL: CITES

Worldwide concern over the threat to the survival of internationally traded wildlife species peaked in 1973 with the signing of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (Hemley 1988). CITES is generally regarded as both a protectionist treaty and a trade treaty. It prohibits commercial trade in endangered species and, at the same time, allows controlled trade in other less threatened species (Lyster 1985, Favre 1989, and Fitzgerald 1989). According to Hemley (1988), CITES is the most widely accepted international wildlife protection and trade agreement in existence. Moreover, it is the only international measure

available to control the trade in wildlife (Fitzgerald 1989). Most major wildlife importing and exporting countries, including Canada, are members to the Convention.

Like most other international wildlife protection agreements, CITES has, unfortunately, met with limited success. Fitzgerald (1989) mentioned that enforcement of CITES is around 60 to 65 percent effective worldwide according to the director of CITES's Secretariat. Similar response was obtained through the mailout survey conducted by this research. The majority (86 percent) of the respondents (Figure 11) indicated that CITES is only moderately, slightly, or not at all effective in regulating the trade of the listed bear species in North America. Ineffective enforcement and difficulties in policing illegal trading activities are the two prime reasons suggested to be responsible for CITES's poor performance (Figure 12). Other reasons commonly suggested by the respondents for the ineffectiveness are identification problem and rising economic values of bear parts. Although CITES and similar agreements have proven little success to date, they still provide some useful means and tools to protect wildlife from the brink of extinction. Several researchers, however, insisted that international agreements will only succeed in protecting their target species unless member nations step up their enforcement and commitment (Clifton 1989, Hemley 1989, Servheen 1989, Hummel and Pettigrew 1991, and Wenting 1991).

5.2 ISSUES AND CONCERN

The majority (95 percent) of the respondents indicated that trade in parts of the listed bear species as those of the North American black bears is either a "Serious" or "Growing" issue in their territories, provinces, or states (Figure 13). Among all the respondents, two primary issues with respect to the trade in North America are identified (Figure 14):

1. Endangering or extinction of local bear populations through rising poaching activity
2. Problems associated with regulating and managing the trade

With North American black bear as the only bear species not regulated by CITES, together with the indistinguishable nature of bear gall bladder, over one-third (36 percent) of the respondents were concerned with the opportunities available for "laundering" in Asia. They contended that deliberate misidentification of bear parts can seriously hamper CITES protection for the endangered Asian bears.

Diverse response was, however, obtained on the question of whether the "look-alike" problem of bear parts has actually jeopardized local protection and management efforts of the listed bear species (Figure 15). Two respondents even declined to answer the question by citing insufficient or inclusive evidence to draw a conclusion. While respondents are confronted with different issues, a consensus is reached among them on the need to manage the trade in North American bear parts, particularly the trade in black bear (Figure 16).

5.3 POSSIBLE SOLUTIONS

In response to the question on whether or not a total ban is the best way to deal with the trade in North America (Figure 17), more respondents (50 percent) favored to allow a certain degree of trade over a total ban (41 percent). Incidentally, some respondents in both categories believed stiffer penalty or increased enforcement effort is required to ensure compliance (Table 13 and 14). The following is a summary of the common rationale provided by the respondents to support their positions:

Rationale Against A Total Ban:

1. No reason to ban traditionally traded bear parts, such as hide and skull, which are taken legally
2. Considerations for the protection and maintenance of economic, subsistence, or cultural dependence on certain bear parts in North America
3. Insufficient information and resources to enforce a ban
4. Without ceasing the demand, blanket prohibition will only drive the market underground

Rationale For A Total Ban:

1. To curtail laundering of endangered Asian bear species
2. To protect local bear populations
3. To facilitate local enforcement and management

Table 13

Solutions Suggested To Enhance/Regulate The Trade: A Summary

RESPONDENT	EXPORT/IMPORT PERMIT SYSTEM	DESCRIPTION	EXEMPTION	STIFFER ENFORCEMENT OR PENALTY
1	Yes	CITES Appendix III	Trophy Parts	Penalty
2	Yes	CITES	-	Enforcement
3	Yes	CITES Appendix III	-	-
4	Yes	International Export Permit	-	Enforcement
5	Yes	CITES For Consumer Parts	Trophy Parts	-
6	Yes	Ban All Trade Except CITES Permit For Hide	-	Enforcement Penalty
7	Yes	Export System In Conjunction With A Quota System	-	Enforcement
8	Yes	Central Clearing House For International Trade	-	-
9	Yes	Tag Legally-Killed Bear/Parts; Central Repository For Data On Tagged Items And Subsequent Movement; Possessing Permit	-	-
10	Yes	CITES	-	-

[-] = Not Available

Table 14

Respondents Favor A Total Ban: A Summary

RESPONDENT	EXEMPTION	STIFFER ENFORCEMENT OR PENALTY
1	-	Enforcement Penalty
2	-	Enforcement
3	-	-
4	Trophy Parts (Complete Skull, Hide Or Skin With Claws Attached)	-
6	-	Penalty
7	-	-
8	-	-
9	-	-

[-] = Not Available

Among the 11 respondents who have indicated that a total ban is not required, one failed to suggest a possible method to regulate the trade. Table 13 provides a synopsis of the suggested solutions. They agreed unanimously on the need for a permit system to control the trade in North American black bears. Variation, however, arises on the nature of such permit permit system. More than half (60 percent) of the respondents preferred the CITES permit system to regulate its trade. However, based on the response provided, no conclusion can be drawn on whether a CITES Appendix II or Appendix III listing is preferred. Respondents also suggested to exempt trophy parts from their proposed permit systems (Table 13) or the trade ban (Table 14). Since traditionally traded trophy parts (such as skull, hide, or skin with claws attached) are not the causes for the current conservation problems in Asia, these respondents indicated that there is no reason to restrict their trade in North America.

Response in Hong Kong regarding the trade is essentially consistent with the opinion found in North America (Figure 11 to 17). However, four noticeable differences are identified in Hong Kong:

1. Protection and management efforts of the listed species has been seriously jeopardized by the "look-alike" problem of bear parts
2. Illegal trade is difficult to police and identification problem of bear parts are believed to be the two contributing factors for ineffective CITES protection of the listed species
3. Problems associated with regulating or managing the trade are considered as the prime issue
4. A total ban is not preferred as a solution

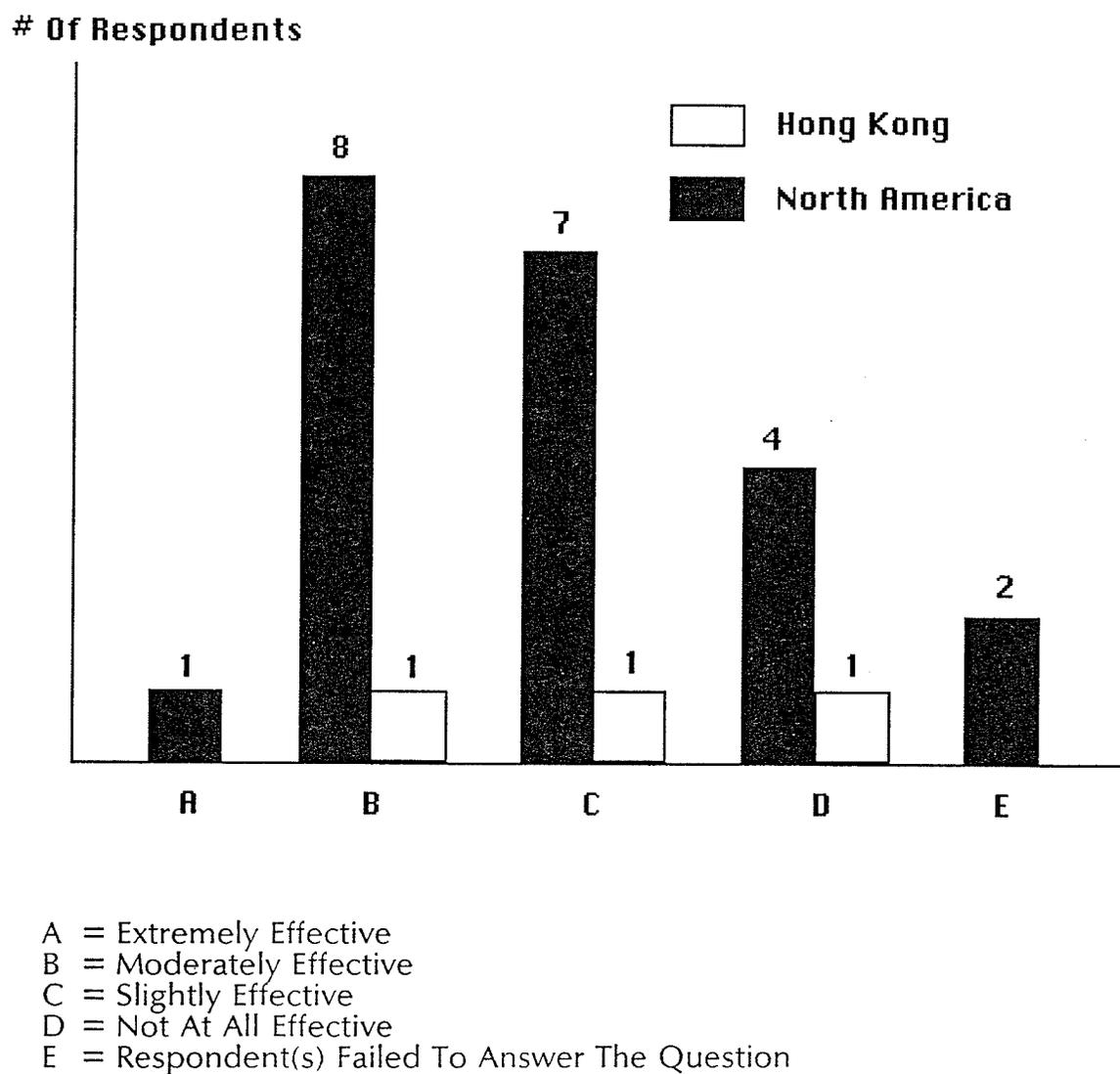


Figure 11: Effectiveness Of CITES In Regulating Bear Trade

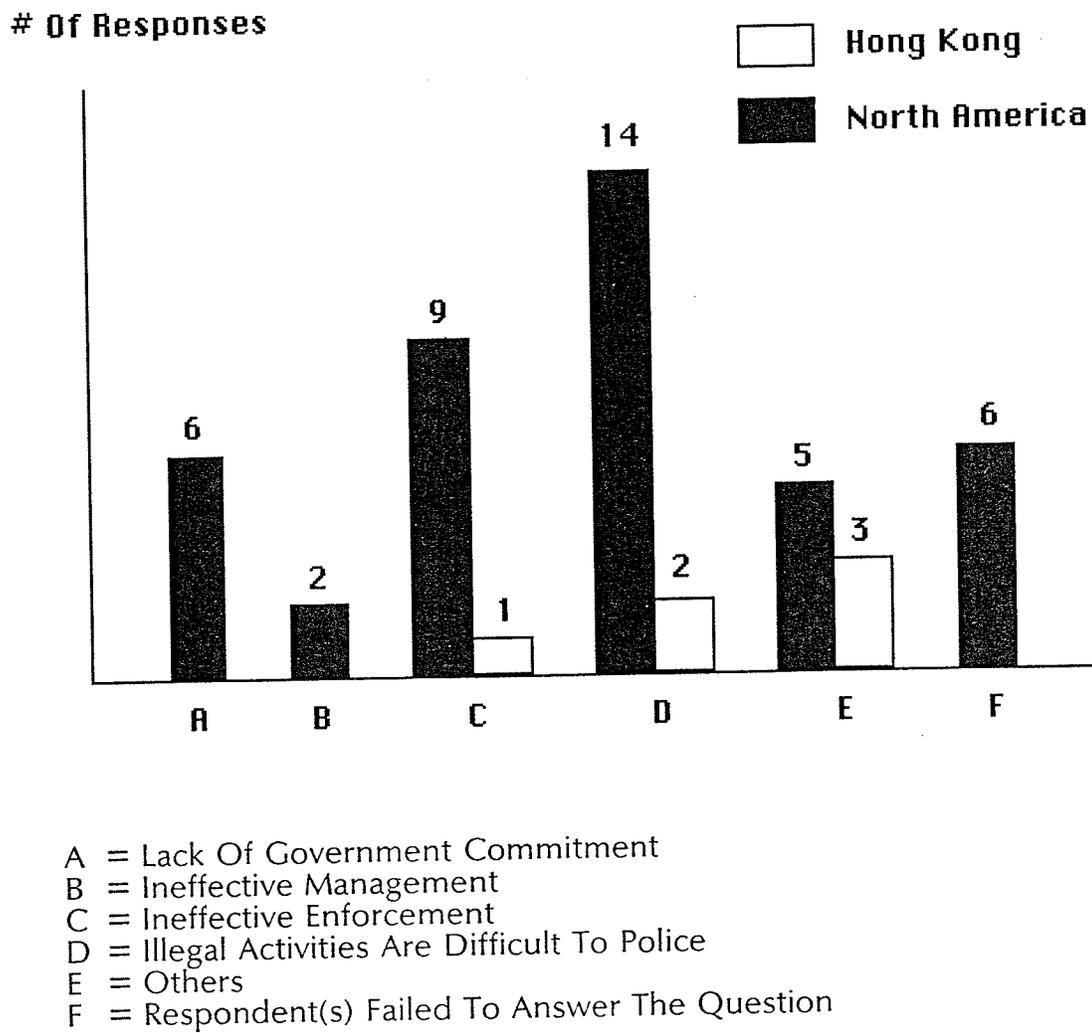


Figure 12: Reasons Suggested For CITES's Ineffectiveness

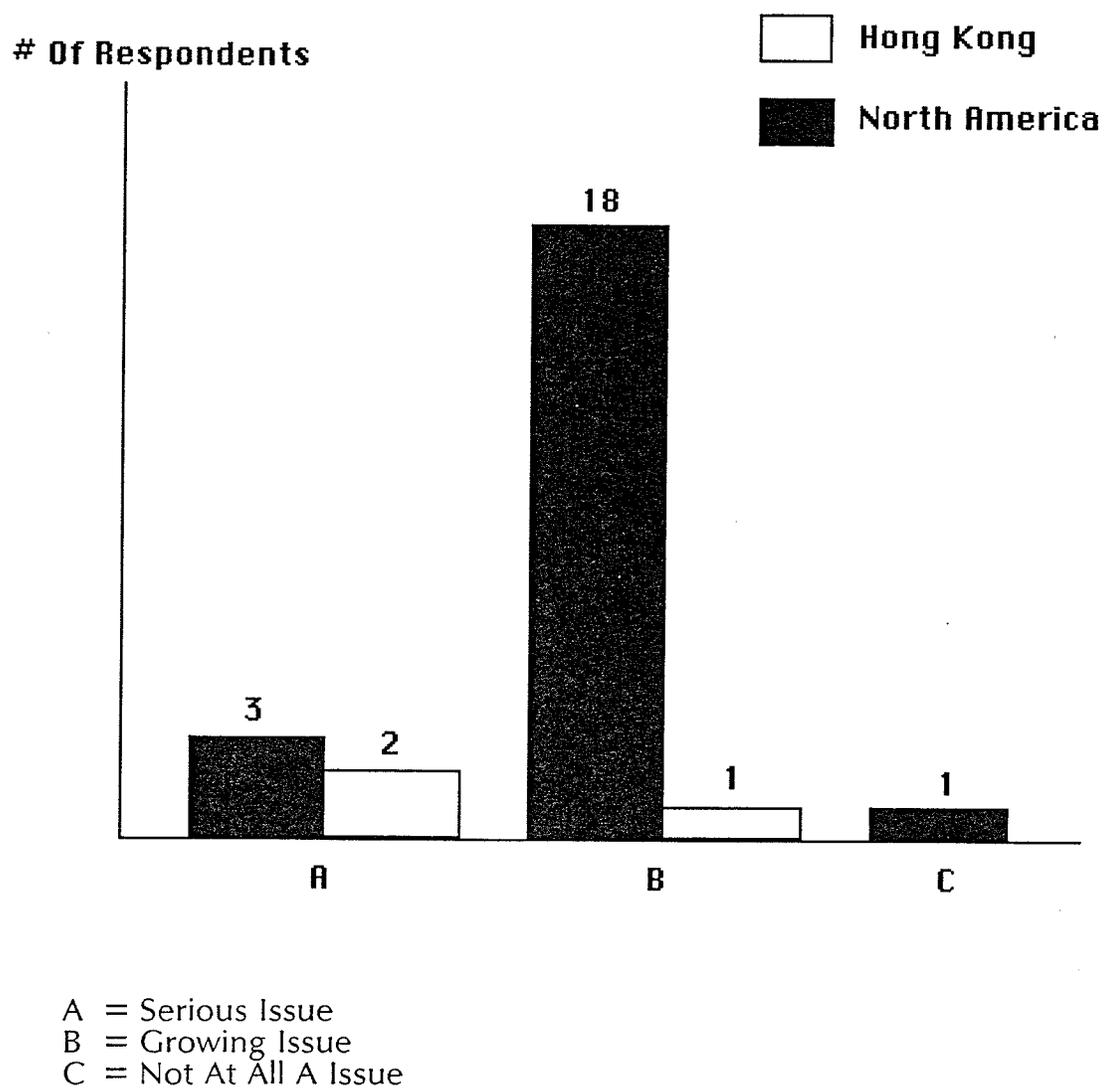
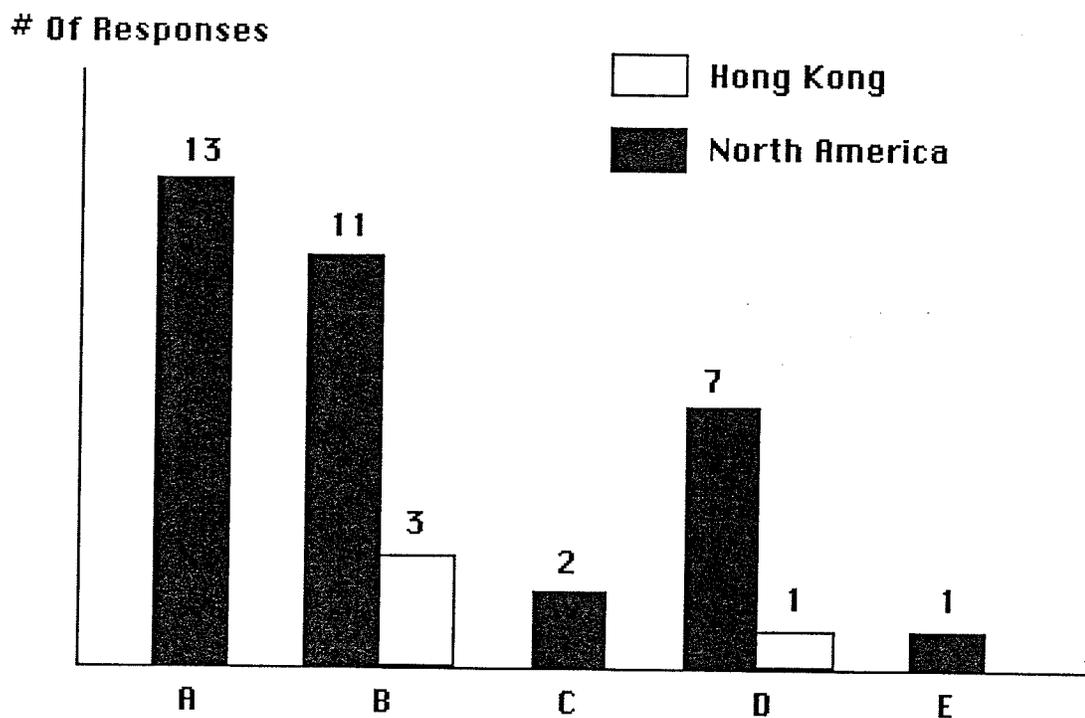
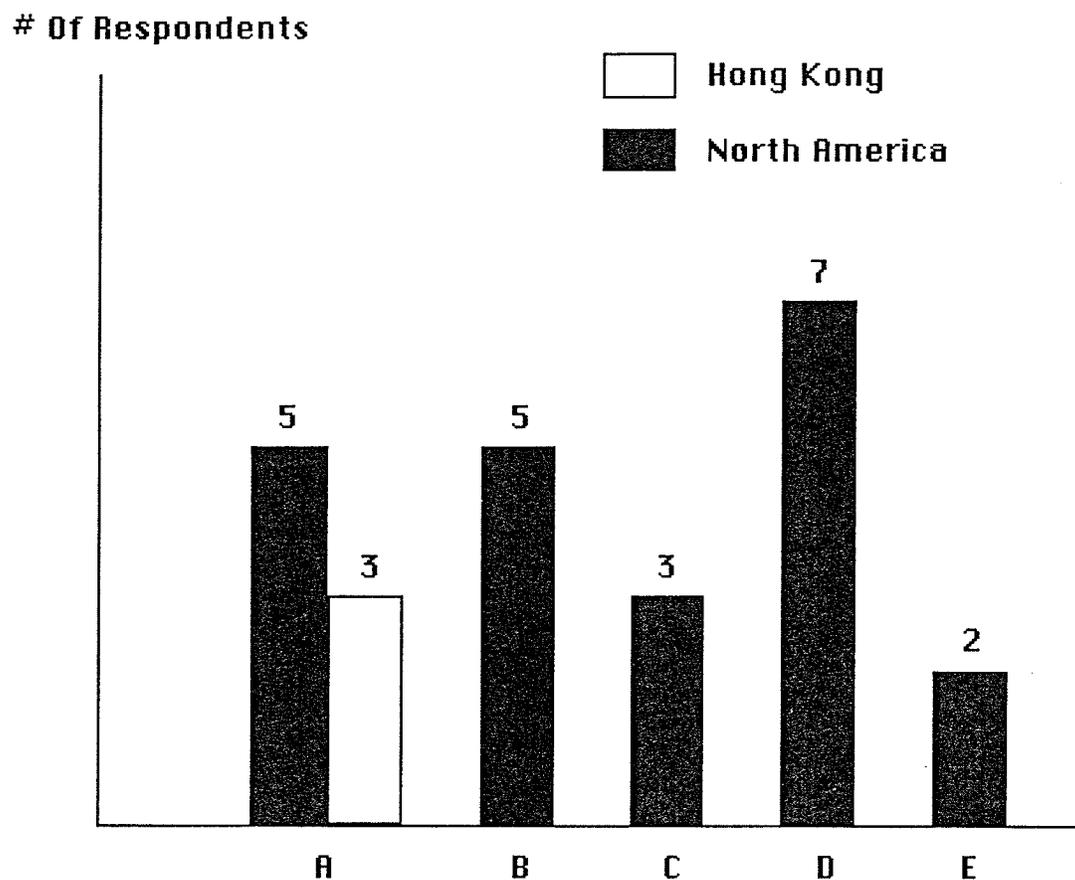


Figure 13: Respondents' Perception On The Issue Of Trading North American Bear Parts



- A = Endangering Or Extinction Of Local Bear Populations Through Rising Poaching Activity
 B = Problem Of Regulating Or Managing The Trade Of Bear Parts
 C = Problem Of Maintaining Bear Populations Without Hampering The Trade Of Bear Parts
 D = Others
 E = Respondent(s) Failed To Answer The Question

Figure 14: Major Concern Regarding The Trade



- A = Seriously Jeopardized
B = Moderately Jeopardized
C = Slightly Jeopardized
D = Not At All
E = Respondent(s) Failed To Answer The Question

Figure 15: Response To Whether The "Look-alike" Problem Of Bear Parts Has Jeopardized Protection And Management Efforts Of Other Listed Bear Species

Of Respondents

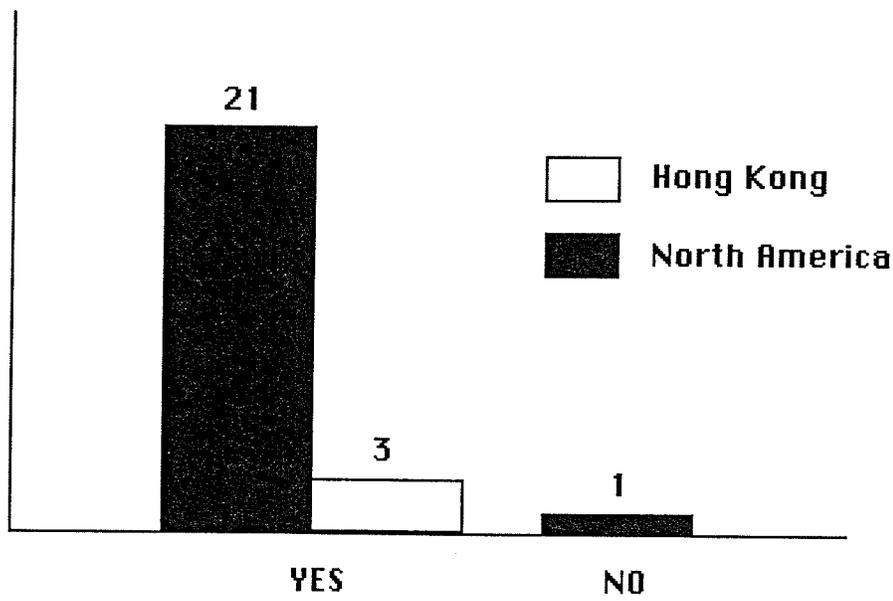


Figure 16: The Need In Managing The Trade

Of Responses

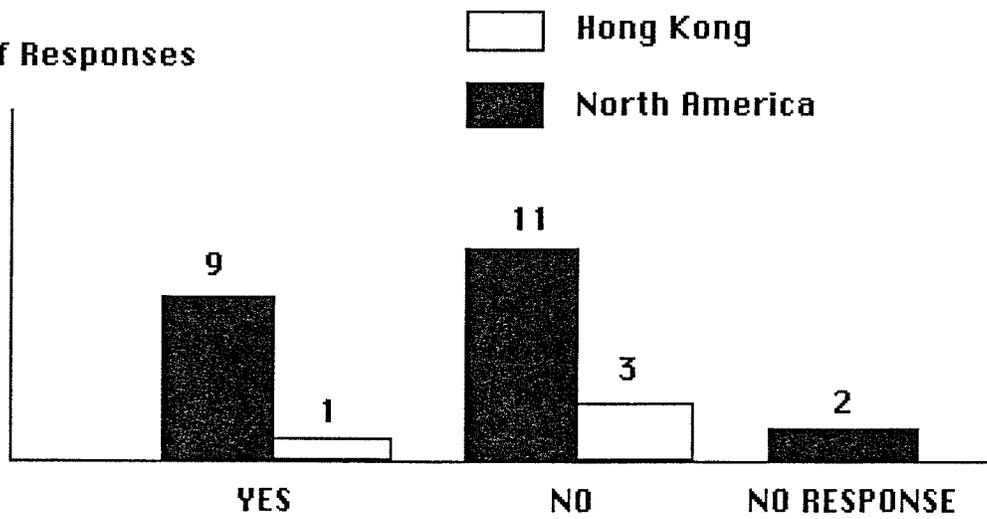


Figure 17: Whether A Total Ban Is The Best Way To Manage The Trade

Chapter VI

CONCLUSIONS AND RECOMMENDATIONS

A balanced and effective strategy for trade in North America requires the awareness of both consumption and trade in Asian consumer countries. By incorporating such information into the decision-making process, wildlife managers can predict and plan for management needs useful in regulating future trade. This study serves as an initial effort to provide wildlife managers with this urgently required information. The primary objectives of this study were to assess the cultural aspect of bear consumption in the Chinese traditions and the trading activities in Hong Kong. During the course of this study, Canada had voluntarily put her black bear populations on CITES Appendix III listing in September 1991. With the exception of skull and full hide with claws attached, export of all items of the species is regulated by CITES permit. In doing so, Canada hopes to improve the protection of the species and to systematically collect data for its trade.

Literature reviewed during this study has shown that bear parts, in addition to being used as food and clothing, are primarily consumed by the Chinese for medicinal purposes. Information obtained on the cultural aspect of bear consumption is consistent with those of other researchers on a "category" basis (Table 15) although variation exists on certain medicinal uses of gall bladder. Existing information classifies all medicinal uses as those from "Asia". Having the largest population, Chinese is only one of the cultures in Asia. Other cultures, such as Japanese and Korean, might use

bear gall bladder and other parts differently. In Hong Kong, bear paw is considered as a delicacy although it possesses useful medicinal values. Among all of its cited medicinal applications, bear gall bladder is primarily consumed for antiphlogistic and analgesic purposes. In addition, there is no indication that bear parts, especially gall bladder, are consumed as panacea or aphrodisiacs in Hong Kong.

Information provided by the Confidential Informants is consistent with those obtained from the sampling survey. Similar to the situation in North America, evidence shows that official data (both legal and illegal) do not reflect the market situation for bear parts in Hong Kong. Rising price and limited supply are two market trends for bear paw and gall bladder in Hong Kong. Only bear gall bladder remains openly accessible to the public despite both gall bladder and paw are being sought-after in the market. In fact, there is no evidence to support the claim by other researchers that bear paw is openly available at restaurants in Hong Kong. Scarcity in supply and increased enforcement have pushed the market inaccessible to the general population.

Evidence suggests that North American bear gall bladders are not commonly traded in Hong Kong due to their low "perceived" quality. However, potential exists for rising future demand due to two observations: (1) Genuine bear gall bladders with different qualities possess the same medicinal values and; (2) Supply of Asian bears is declining. North American black bear, in particular, is subjected to the rise in future demand due to its abundance. As a result, management must be prepared to regulate and manage its trade accordingly.

Table 15

Cultural Consumption Of Bear Parts: A Comparison

CATEGORY	ASIA (Other Researchers)	CHINESE*
Medicinal	N.A. N.A. Gall Bladder N.A. N.A. N.A.	Blood Bones Gall Bladder Grease Meat Spinal Cord
Food	Fat Meat Paw As Delicacy	Fat Meat Paw As Delicacy
Clothing	Skin	Skin
Miscellaneous	Claw And Tooth	N.A.

[N.A.] = Not Available

[*] = Information Obtained By This Study

Source:

Milliken (1985), **Concern Over Japanese Bear Trade**. Brautigam (1989), **Analyses Of Proposals To Amend The CITES Appendices**. Fitzgerald (1989), **International Wildlife Trade: Whose Business Is It**. Hummel and Pettigrew (1991), **Wild Hunters: Predators In Peril**. Johnson (1991), "CITES Protection Needed For American Black Bear". Sloth (1991), **Background Document To Support The Inclusion Of *Ursus americanus* In Appendix II**.

Findings obtained from the sampling survey and Confidential Informants indicate that the majority of bear gall bladders in Hong Kong are originated from Asia. China, India, and Nepal are identified by both sources as the three common Asian origin countries. Japan, Korea, and Taiwan are identified by all Confidential Informants as the other three main Asian consumer countries of bear parts. While the findings on Japan and Korea are consistent with those of other researchers, this study has found no evidence to support the argument that China is a major importing country for bear gall bladder. On the contrary, China is revealed as a major country of origin.

"Organized" and "casual" smugglers are furnishing Hong Kong's bear gall bladder market through four basic supply linkages. Although the researcher was unable to obtain the exact number of wholesalers, evidence suggests that there are only a few in the market. Retail price ranges from \$4,000 to \$34,000 per kilogram with dried bile having a higher dollar per gram price than the whole bladder. High profit margins and the absence of readily available method to prove genuineness are identified as two contributing factors for the existence of counterfeits in the market. Insufficient information, however, was obtained to provide a detailed current market situation for bear paw.

With only minor differences, response regarding the trade in Hong Kong is essentially consistent with those of the respondents from North America. Potential effect of "laundering" on CITES listed species is a common concern for the respondents in Hong Kong and North America. Among all the North American respondents, a dispute exists on whether or not the "look-alike" problem of bear parts has jeopardized the local

protection and management efforts of CITES listed bear species. The same problem, however, is considered as a detrimental factor in hampering Hong Kong's enforcement efforts. Survey results also indicate that more respondents favor regulating the trade through a permit system than banning it totally.

6.1 RECOMMENDATIONS

Declining supply in Asia, together with the observation that genuine bear galls possess the same medicinal values, is going to increase the demand for North American bear parts in Hong Kong. The researcher also suspects that the same situation is going to happen in other Asian consumer countries. A total ban on trade would likely drive the demand for bear gall bladder and paw underground given their historical and cultural consumption background. An underground market would also shoot up the existing prices and lead to more bear poaching. Blanket prohibition not only would drive all trade underground, it closes other values or opportunities (intrinsic, social, cultural, and economic) available to the Canadians. Unless future development indicated otherwise, this study recommends allowing trade through enhanced regulation [26]. While catering to local needs, wildlife managers must also ensure that bears are protected for the enjoyment of present and future generations of Canadians. A balanced management strategy must, therefore, draw a compromise between "conservation" and "use". International trade of bear parts is not necessarily harmful to North American bears. It can actually bring economic benefits to local economies through sustainable uses. Revenues generated from taxing and licensing the trade can also be

reinvested in bear conservation efforts. However, special care must be taken in establishing a mechanism to ensure compliance to the legal trade system. This study recommends the following measures to enhance and regulate future trade.

6.1.1 Research And Development

Wildlife managers must take an active role by preparing themselves to meet the management needs associated with the future rise in demand. Since better decisions generally result from better information, a logical first step is to initiate research in the following areas:

1. To assess the consumption of and trade in bear parts at other major consumer countries
2. To identify, compare, and confirm the medicinal values of existing or potential substitutes for bear parts, particularly gall bladder
3. To study the potential of using bear farms/ranches to satisfy future demand for bear gall

Producer and consumer countries should pool their research resources in working towards information on these areas. All research findings must be made available to the consumer countries in order to inform and encourage their people to substitute the dependence on various parts. Supply from the farms/ranches can, hopefully, relieve some of the potential pressure on Asian and North American bears.

6.1.2 Cooperation Through Communication

Hong Kong's voluntary effort to include North American black bear on the list of protected species is a commendable commitment to her international obligation for bear protection. Rather than being the sole responsibility of a consumer or producer country, effective trade management and enforcement depends on the cooperation and commitment among all involved parties. In order to promote international cooperation and enforcement, a formal channel must be established for direct information (legal and illegal activities) exchange among all producer and consumer countries. With its international membership, CITES Management Authority seems to fit nicely for this responsibility. The most urgent need is to find out how Canada can cooperate with other Asian consumer countries to prevent or minimize the opportunity for "laundering". Canadian CITES Management Authority should take a leading role by initiating immediate dialogue with their Asian counterparts. Through understanding their needs and problems, Canada can help to negotiate a systematic arrangement with these countries for future trade in bear parts. Non-governmental wildlife organizations should also assume an active role by working closely with their Asian counterparts to study and monitor the trade.

6.1.3 Enforcement

While listing North American black bear in CITES is preferred, the researcher believes that cooperation and commitment among countries to enforce the trade mechanism is more crucial for success. All involved parties must take their own share of responsibility by minimizing the opportunity for abusing the trade system (both locally and internationally). Potential for "laundering" must be closed by improving regulation and

enforcement on the trade in North American black bear. Canada's voluntary action to put the species on CITES Appendix III is a welcome sign of commitment. The following is a specific list of measures useful to enhance the trade system:

1. More manpower and training must be provided to management and enforcement agencies. By training custom and other enforcement officers to look for and identify commonly sought-after bear parts, it becomes difficult for smugglers to smuggle their illegally possessed parts into or out of a country
2. In order to enhance effective enforcement in the Asian consumer countries, North America should consider providing a unified (with same permit requirements) and mandatory export permit to all exports of bear parts. Data collection can be enhanced by tagging all legally obtained bear parts through a nationwide tag system. No export permit shall be given to parts without being identified by the tag system. A national computer network becomes essential for tracking the movement of bear parts and people with previous convictions.
3. Increased enforcement and stiffer penalties are crucial for curtailing illegal activities. Law-makers and judges must be informed and updated on the economic values of various bear parts. In doing so, relevant fine/jail terms can be legislated and given to repeat offenders.

6.1.4 Public Participation

Rather than relying on enforcement, a long-term sustainable strategy for the trade requires wildlife managers to induce people to minimize or substitute their bear consumption. The likelihood that changes will occur is greatly increased if people systematically become aware, interested, informed, and thus convinced that new behavior is required. Hence, education/information programs perform a prominent role in promoting public awareness and inducing the changes. Two specific aspects are recommended for these programs:

1. Encouraging users to substitute their demand for bear parts by stressing: (1) the importance of sustaining viable bear populations to the global ecosystem and; (2) the various values or opportunities which are dependent on the survival of bears. Hence, users might, hopefully, become more responsive to these needs and minimize their consumption through substitution. Identification and promotion of substitutes becomes vital to successful substitution.
2. Exposing people, particularly school children, to the existing problems of bear conservation and the future needs. It would be difficult to change the attitude and consumption behavior of the older generations since dependence on bear parts has been established among them. Substitution or change could be more readily induced among the children/young as dependence has not yet been established. Children could also play an important role by communicating the information to their parents and friends. It is hoped that the public would become concerned and participate in future bear conservation efforts. As a result of their concern, it is also hoped that the public would be encouraged to report illegal activity and to practise responsible/sustainable consumption.

With an annual legal harvest of up to 22,000 Canadian black bears, Canada should consider the potential of channelling the unwanted body parts from legal kills to the Chinese medicine market. Acceptability of North American bear galls in Hong Kong could be improved through two ways. Research should be initiated in finding ways to improve the "perceived" quality since color and texture are the only determinants of quality. At the same time, promotion could be used to change people's misconception regarding the relationship between quality and color or texture. Based on the research findings, if some 13 percent of the legal kills could be returned, the demand for bear gall in Hong Kong can be satisfied. Hence, some poaching pressure on Asian and North American bears may be eased. Hunters and guides, therefore, should be encouraged to return any unwanted bear paws and galls. Some useful incentives are as follows:

1. Early bird mail-in registration for next year's hunting permit with bear gall/paw returned to any regional offices or designated locations.
2. Increased guides' bear quota (maximum 1 to 2 bears) for returning a certain minimum percentage of bear gall/paw from their existing quota. Any additional quota will be cancelled when a guide failed to honor the specified return percentage.
3. The most direct way is to encourage the return of bear gall/paw through cash reimbursement. Instead of draining the government treasury, local traders should be encouraged to perform such duty. An exclusive licence (or licences to limited number of traders) to handle all international shipments of bear gall/paw within the immediate locality should provide a strong incentive to these traders.

There is no "quick fix" to the problems associated with trade in bear parts, particularly bear gall bladder and paw. Illegal trade will not disappear merely by putting North American black bear on CITES Appendix II or III. Only through the continuous commitment and cooperation among all involved countries can the trade be regulated and the survival of bears be safeguarded for the future generations.

ENDNOTES

1. Unless otherwise indicated, "trade" means the trade in bears and their parts.
2. For the purpose of this study, "illegal" trade refers to all import/export activities which are conducted without obtaining the required documentation even though the bear parts might be obtained legally.
3. All percentages and numbers are round up to their nearest integer.
4. Names of the three Chinese medicine merchants are withheld since identity anonymity was assured to these merchants. Confidential Informant "A", "B", and "C" are used to define the three merchants respectively.
5. Consider a binomial population where P (True Proportion) proportion of 'success' in the population is unknown. Since no similar research has ever been reported in Hong Kong, a pilot test was conducted to establish the sample size. Thirteen (1 percent of the total number of shops in Hong Kong) Chinese medicine shops were randomly chosen to carry out the pilot test. Result of the pilot test showed that 12 out of the 13 shops carried bear gall bladder. With a random sample of size n from the population and $P_s=0.923$ (12 over 13) as the random variable (i.e., the proportion of successes in the sample), we can use P_s to estimate P . Assuming 90 percent confidence and the reliability of the estimate to stay within plus or minus 5 percent. Sample size (n) of the survey must at least has 77 shops.
6. Various names are used to describe the Chinese medicine shops in Hong Kong. "Chinese Drug Store", "Ginseng and Antlers Shop", "Ginseng Firm", "Ginseng, Musk, and Dried Seafood Store", and "Herbal Medicine Company" are some of the common examples.
7. According to Fitzgerald (1989), "laundering" is method used by traders to illegally transport wildlife either by smuggling wildlife from a country that prohibits export to another country where fraudulent export documents may be obtained; inaccurately declaring a species name, country of origin, or purpose of trade on documents or permits; or obtaining falsified or forged trade documents from exporting or reexporting countries. For the purpose of this report, the term identifies the process(es) where bear parts, especially gall bladder, are deliberately misidentified to circumvent CITES protection of the endangered Asian bear species.

8. Wenting (1991) provided the following management problems associated with the inclusion of North American black bear in CITES: (1) Almost every Canadian jurisdiction are concerned with the number of export permits that each would have to issue for trophies that non-resident hunters would wish to take home; (2) Non-resident exporters will have difficulty obtaining CITES export permits on demand and; (3) The cost of issuing these permits will be considerable for some jurisdictions. Johnson (1991) indicated that CITES listing of the species will impose an excessive burden on American states by requiring individual states to evaluate whether export is detrimental to the survival of the species.
9. All dollar values are expressed in U.S. dollars except otherwise indicated. One US\$ exchanges 1.2 Canadian\$ or 7.8 Hong Kong\$.
10. Hong Kong is far away from her traditional supply sources of gall bladder, such as China (north-eastern) and India. At the same time, the hot and humid climate in Hong Kong makes it difficult, if not impossible, to preserve raw/wet bear gall bladder for a reasonable long period of time even with refrigeration. One source indicated that raw/wet bear gall bladder is consumed by Korean for the general maintenance of health. The whole bladder is usually dipped into a cup or bowl filled with a sorghum wine called *gao liang* or other kinds of wine. Only the wine will be consumed after the bile has dissolved and mixed well into it.
11. Normally, a dried bear gall bladder weighs 1 to 5 Taels. 1 Tael is equal to 37.8 grams. Unless specified otherwise, the average weight of a dried gall bladder is taken as 114 grams.
12. According to Chang & But (1987), bear bile contains mainly of ursodeoxycholic acid and less of chenodeoxycholic acid, deoxycholic acid and cholic acid. They are mostly conjugates of taurine or glycine, and the amount of free bile acids is minute. The bile also contains cholesterol, bilirubin and inorganic salts.
13. Caution must be taken in interpreting the meaning of these medicinal uses. Semantic problem exists in some of these medicinal uses. Take the term "antipyretic" as an example. This term characterizes measures that lower abnormally high body temperature in western medicine. In traditional Chinese medicine, according to Chang et al. (1985), the term refers to remedies that decrease body "heat" in the ancient sense of an "essence" or "principle" but not necessarily measured by a thermometer. Moreover, some of these medicinal uses are interrelated. For example, antipyretic and antidotal ability is paramount in achieving antiphlogistic ends. Quieten the liver and antipyretic ability work together for vision improving.

14. According to Zhu (1989), Chinese ready-to-be-taken or prepared medicines are intended as supplemental therapy, or for specialized or emergency cases. In general, they are chosen by patients themselves for self or family care. Non-prescription drugs, such as vitamin and nutritional supplements, are the Western equivalents of Chinese prepared medicines.
15. In addition to CITES requirements, legislation in Hong Kong goes one step further to regulate the possession of scheduled bear species and their parts.
16. The Ordinance follows closely the principles of the CITES and provides a list of "scheduled" or "protected" bear species. It is administered by the Agriculture and Fisheries Department. Enforcement of this Ordinance is provided jointly by the Customs and Excise Department and Department of Agriculture and Fisheries.
17. Two other potential permit issuing departments for bears were identified and checked. The Trade Department (Import and Export Permit Section) confirmed that no permit is required from uncontrolled bear species. However, a medicine permit may be required for bear parts which are considered as medicine (Wong, Trade Department, telephone inquiries). The Medical and Health Department (Medicine's Import and Export Section) had cleared the above doubt by indicating that no permit is required for importing bear parts with medical applications unless they have been processed into medicine. Dried bear gall bladder is not considered as a processed medicine (Lau, Medical and Health Department, telephone inquiries).
18. Glutinous rice is an excellent moisture absorbent and insect repellent.
19. The researcher suspects that some respondents may not be honest in providing the origins of their stocks due to security reason. Unfortunately, the researcher has to accept their claims of origin since there is no way to confirm or dismiss their claims.
20. One drop of genuine dried bile will give a line in the water which does not spread. Drawn across a pool of ink, the ink should retreat from the tract (Read 1976, Cui 1989, Cheung, Confidential Informant A and C, pers. comm.). However, testing methods indicated above are not reliable since most animal gall bladders produce similar testing results (Cui 1989). Cui contended that bear bile can be distinguished from other animal bile by observing its rate of dissolution, amount of dissolved pigment, and amount of undissolved particles left behind. Differences can be obtained by dissolving the genuine article of different animal bile simultaneously with bear bile. He stressed that further research is required to study and confirm this method of differentiation.

21. Comparing with bear gall, bear paw is more difficult to smuggle into Hong Kong since it is bulky, perishable, and more readily recognizable by species. All these factors have made bear paw more difficult to escape detection and prosecution than gall bladder.
22. Figure includes sales from two merchants only since one merchant declined to provide the data.
23. According to Cui (1989), bile pigment is the prime determinant for the color of crystalized or pasty bile. The amount of bile pigment is closely related to the daily activities (eating and movement) of bear. Essentially, bile pigment is sparse when the bear eats and moves a lot. As a result, the color of the bear bile is mostly golden yellow to slightly brown in the summer months. Bile pigment accumulates when the bear is not active. Hence, the color turns black in the winter months. Confidential Informant B also reinforced this point by contending that there is a color difference between bear gall bladders picked in winter (mostly black) and summer (mostly golden yellow to slightly brown). Further research is required to study and confirm this observation.
24. Ming Pao is one of the renowned newspapers in Hong Kong.
25. No reference was made in the newspaper regarding the exact scale of operation.
26. Unless otherwise specified, all recommendations are applicable to both the producer and consumer country.

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Appendix A

CITES Permit Requirements In Canada

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement which regulates trade in a number of species of animals and plants, their parts and derivatives, and any articles made from them. The Convention is applied in Canada in accordance with a General Export Permit and a General Import Permit made under the Export Regulations and the Import Regulations, respectively, of the Export and Import Permits Act. Three Appendices which vary in degree of control and permit requirements can be found in CITES.

Appendix I's species are rare or endangered and trade will not be permitted for primarily commercial purposes. Before trade is commenced, the importer must be in possession of a Convention export permit issued by the government of the exporting nation and a CITES import permit issued by the government of the importing nation.

Appendix II's species are not currently rare or endangered but could become so if trade is not regulated. The species being traded must be covered by an appropriate Convention export permit issued by the government of the exporting nation before entry to or export from Canada will be allowed.

Appendix III's species are not necessarily endangered but are managed within the listing nation. Permit requirements for Appendix III are as for Appendix II species, and are applicable between Canada and listing nations. Appendix III species listed by Canada require permits for all shipments into or from Canada.

Note:

1. A species includes the living animal or plant as well as their parts and derivatives.
2. Species being traded must be listed on permits by their scientific names. In accordance with Customs Act, the importer must correctly identify goods being imported or exported, and this is best done by the use of scientific names. **Identification problem arises since gall bladders of bear are indistinguishable by species.**
3. Canadian applications for permits to export regulated species may be obtained from the Canadian Wildlife Service in Hull or any provincial or territorial Wildlife Branch headquarters. Canadian applications for permit to import regulated species may be obtained only from the Canadian Wildlife Service, Hull, Quebec.

Appendix B

Survey Of Bear Parts Trading Activity

NATURAL RESOURCES INSTITUTE
UNIVERSITY OF MANITOBA

Opinion Poll

For each question, please check or write down the appropriate answer(s).
Thank You For Your Cooperation.

Section 1: Identification Information

Name : _____

Agency : _____

Address : _____

1. What is the nature of your agency with respect to bear parts trade?

- Management
- Enforcement
- Others (Please specify)

2. How long has your agency engaged in the above activity?

- Less than 5 years
- 5 - 7 years
- 8 - 10 years
- Over 10 years

3. Is it legal to trade bear or its parts in your jurisdiction?

- Both bear and its parts are legally traded
- Only bear is traded legally but not its parts
- Only bear parts are legally traded but not bear
- Trade of bear and its parts is subjected to "control" (i.e. Permits are required for importing or exporting bear and its parts)
- Both the trade of bear and its parts are illegal

Section 2: Opinion Poll**PLEASE READ THE FOLLOWING CONCERN CAREFULLY**

With North American Black Bear *Ursus americanus* being the only bear species in North America not listed in a CITES Appendix, management and protection problems arise. Parts of the listed species can easily be taken as those of black bear since bear parts are indistinguishable by species.

1. Is the above concern a major issue in your jurisdiction?
 - Serious issue
 - Growing issue
 - Not at all a issue

 2. Do you think the "look-alike" problem of bear parts has jeopardized the protection and management efforts of the listed bear species in your jurisdiction?
 - Seriously jeopardized
 - Moderately jeopardized
 - Slightly jeopardized
 - Not at all

 3. Do you think CITES is effective in regulating and managing the trade of bear parts in your jurisdiction?
 - Extremely effective
 - Moderately effective
 - Slightly effective
 - Not at all effective

 4. Why do you think CITES is not effective in regulating and managing bear parts trade in your jurisdiction?
(Please check as many as apply)
 - Lack of government commitment
 - Ineffective management
 - Ineffective enforcement
 - Illegal trading activity is difficult to police
 - Others (Please specify)
-

5. With regards to bear parts trade, what are the major issues of concern to your jurisdiction?
(Please check as many as apply)

- Endangering or extinction of local bear populations through rising poaching activity
 Problems of regulating or managing the trade of bear parts
 Problems of maintaining bear populations without hampering the trade of bear parts
 Others (Please specify)
-

6. Do you think there is a need for managing the trade of bear parts?

- Yes
 No (Please specify the reason(s) for your answer)
-
-

7. Do you think a total ban on the trade is the best way to control the illegal trading activities of bear parts?

- Yes
 No (Please specify the reason(s) for your answer)
-
-

8. In your opinions, what is the best way to manage and regulate the trading activities of bear parts?
-
-
-

END

ONCE AGAIN, THANK YOU FOR YOUR COOPERATION.

Appendix C

List Of Organizations/Individuals Surveyed

1. Canadian Federation of Humane Societies
2. Canadian Wildlife Federation
3. CITES Scientific Authority, Canadian Wildlife Service
4. Department of Environment and Lands: Newfoundland
5. Department of Forestry, Lands and Wildlife: Alberta
6. Department of Lands and Forests: Nova Scotia
7. Department of Natural Resources: Manitoba
8. Department of Natural Resources and Energy: New Brunswick
9. Department of Renewable Resources: Northwest Territories
10. Department of Renewable Resources: Yukon
11. Division of Law Enforcement, Minnesota, U.S. Fish & Wildlife Service
12. Donald G. Reid, Department of Zoology, University of British Columbia
13. Dr. Stephen Herrero, Faculty of Environmental Design, University of Calgary
14. Dr. S. G. Moon, Department of Sociology, University of Manitoba
15. Dr. Jacek I. Romanowski, Department of Geography, University of Manitoba
16. Dr. Christopher Servheen, U.S. Fish and Wildlife Service
17. IUCN/SSC Bear Specialist Group
18. IUCN/SSC Trade Specialist Group
19. Ministère de l'énergie et des ressources: Quebec
20. Ms. Joan Gregorich, Writer/Reporter
21. Natural Resources Institute, University of Manitoba
22. Ontario Ministry of Natural Resources
23. Parks and Renewable Resources: Saskatchewan
24. The Fund for Animals (USA)
25. The Humane Society of the United States
26. The Long Branch Environmental Education Centre (USA)
27. TRAFFIC USA
28. Wildlife Branch, British Columbia
29. World Society for the Protection of Animals
30. World Wildlife Fund, Canada

Appendix D

Survey Of Bear Parts Trading Activity

NATURAL RESOURCES INSTITUTE
UNIVERSITY OF MANITOBA***Questionnaire For Hong Kong's Management/Enforcement Agency***

For each question, please check or write down the appropriate answer(s).
Thank You For Your Cooperation.

Section 1: Identification Information

Name : _____

Agency : _____

Address : _____

1. What is the nature of your agency with respect to bear parts trade?

- Management
 Enforcement
 Others (Please specify)

2. How long has your agency engaged in the above activity?

- Less than 5 years
 5 - 7 years
 8 - 10 years
 Over 10 years

Section 2: Legal Trading Activity Of Bear Parts

1. Is it legal to trade bear or its parts in Hong Kong?
 - Both bear and its parts are legally traded
 - Only bear is traded legally but not its parts
 - Only bear parts are legally traded but not bear
 - Trade of bear and its parts is subjected to "control" (i.e. Permits are required for importing and exporting bear and its parts)
 - Both the trade of bear and its parts are illegal
(Please ignore this section and proceed to Section 3)

2. What bear species is(are) legally traded in Hong Kong?

<input type="checkbox"/>	<i>Helarctos malayanus</i>	Malayan bear
<input type="checkbox"/>	<i>Melursus ursinus</i>	Sloth bear
<input type="checkbox"/>	<i>Selenarctos (Ursus) thibetanus</i>	Himalayan black bear
<input type="checkbox"/>	<i>Tremarctos ornatus</i>	Spectacled bear
<input type="checkbox"/>	<i>Ursus americanus</i>	North American black bear
<input type="checkbox"/>	<i>Ursus arctos</i>	Brown/Grizzly bear
<input type="checkbox"/>	<i>Ursus arctos isabellinus</i>	Himalayan brown bear
<input type="checkbox"/>	<i>Ursus arctos isabellinus</i>	Other brown bear population
<input type="checkbox"/>	<i>Ursus arctos</i> (Mexican population)	Mexican grizzly bear
<input type="checkbox"/>	<i>Ursus arctos pruinosus</i>	Tibetan/Central Asian brown bear
<input type="checkbox"/>	<i>Ursus (Thalarctos) maritimus</i>	Polar bear
<input type="checkbox"/>	Others (Please specify) _____	

3. What body parts are commonly traded among the above bear species? (Please check as many as apply)
 - No such data available
 - Carcass
 - Claw
 - Fur piece
 - Gall bladder
 - Garment
 - Head
 - Kidney
 - Live bear
 - Meat/Fat
 - Paw
 - Penis
 - Skin
 - Trophy
 - Others (Please specify) _____

4. Are the data on the annual legal imports of bear parts available?
- No
 Yes (Please provide the data on **Appendix AA** at the end of this questionnaire).
5. Among the legal imports, how many were imported from North America?
- No such data available
 Data available (Please specify the data on **Appendix AA**)
 Imported from sources other than North America (Please specify the sources).
-
6. Is it necessary to obtain an import permit before bear parts can be imported into Hong Kong?
- Yes
 No
7. Are the data on the annual legal exports of bear parts you have checked in Question #3 of this section available?
- No
 Yes (Please write the available data on **Appendix BB** at the end of this questionnaire)
8. Among the legal exports, how many were exported to North America?
- No such data available
 Data available (Please specify the data on **Appendix BB**)
 Exported to destinations other than North America (Please specify the countries)
-
9. Is it necessary to obtain an export permit before bear parts can be exported from Hong Kong?
- Yes
 No
10. What is(are) the other department(s) in Hong Kong responsible for the management/enforcement of trade in bear and its parts?
(Please specify)
-

11. Is Hong Kong a member of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)?

- Yes
 No

12. What were the bear items legally traded in Hong Kong 6 or 12 years ago? (Please check as many as apply)

6 Years Ago

- No such data
 Carcass
 Claw
 Fur piece
 Gall bladder
 Garment
 Head
 Kidney
 Live bear
 Meat/Fat
 Paw
 Penis
 Skin
 Trophy
 Others (Please specify)

12 Years Ago

- No such data
 Carcass
 Claw
 Fur piece
 Gall bladder
 Garment
 Head
 Kidney
 Live bear
 Meat/Fat
 Paw
 Penis
 Skin
 Trophy
 Others (Please specify)

Section 3: Illegal Trading Activity Of Bear Parts

1. According to your records of illegal seizure, what bear items are commonly traded in Hong Kong? (Please check as many as apply)

- No such data available
- Carcass
- Claw
- Fur piece
- Gall bladder
- Garment
- Head
- Kidney
- Live bear
- Meat/Fat
- Paw
- Penis
- Skin
- Trophy
- Others (Please specify) _____

2. Do you have records on the total annual seizure of bear parts which were illegally imported into Hong Kong?

- No
- Yes (Please specify the data on **Appendix CC** at the end of this questionnaire)

3. Among the seizure, how many were imported from North America?

- No such data available
 - Data available (Please specify the data on **Appendix CC**)
 - Imported from sources other than North America
(Please specify the sources)
-

4. Do you have records on the total annual seizure of bear parts which were illegally exported from Hong Kong?

- No
- Yes (Please specify the data on **Appendix DD** at the end of this questionnaire)

5. Among the seizure, how many were attempting to export to North America?

- No such data available
 - Data available (Please specify the data on **Appendix DD**)
 - Exported to destinations other than North America
(Please specify the destinations)
-

Section 4: Opinion Poll**PLEASE READ THE FOLLOWING CONCERN CAREFULLY**

With North American Black Bear *Ursus americanus* being the only bear species in North America not listed in a CITES Appendix, management and protection problems arise. Parts of the listed species can easily be taken as those of black bear since bear parts are indistinguishable by species.

1. Is the above concern a major issue in your jurisdiction?
 - Serious issue
 - Growing issue
 - Not at all a issue

2. Do you think the "look-alike" problem of bear parts has jeopardized the protection and management efforts of the listed bear species in your jurisdiction?
 - Seriously jeopardized
 - Moderately jeopardized
 - Slightly jeopardized
 - Not at all

3. Do you think CITES is effective in regulating and managing the trade of bear parts in your jurisdiction?
 - Extremely effective
 - Moderately effective
 - Slightly effective
 - Not at all effective

4. Why do you think CITES is not effective in regulating and managing bear parts trade in your jurisdiction?
(Please check as many as apply)
 - Lack of government commitment
 - Ineffective management
 - Ineffective enforcement
 - Illegal trading activity is difficult to police
 - Others (Please specify)

5. With regards to bear parts trade, what are the major issues of concern to your jurisdiction?
(Please check as many as apply)

- Endangering or extinction of local bear populations through rising poaching activity
- Problems of regulating or managing the trade of bear parts
- Problems of maintaining bear populations without hampering the trade of bear parts
- Others (Please specify)

6. Do you think there is a need for managing the trade of bear parts?

- Yes
- No (Please specify the reason(s) for your answer)

7. Do you think a total ban on the trade is the best way to control the illegal trading activities of bear parts?

- Yes
- No (Please specify the reason(s) for your answer)

8. In your opinions, what is the best way to manage and regulate the trading activities of bear parts?

END

ONCE AGAIN, THANK YOU FOR YOUR COOPERATION.

Appendix E

Prepared Medicine With Bear Gall Bladder

Name Of Prepared Medicine (Origin)	Applications Through The Combined Effects Of Various Ingredients
Musk-Bear's Bile Rheumatic Oil (China)	Dispelling wind and cold, promoting blood circulation and removing blood stasis, removing swellings and eliminating dampness suppressing inflammation and killing pains.
Ta Huo Lo Yeow (China)	Various kinds of bone fractures, dislocations of joints and sprains, rheumatic pain shoulder and neck stiffness, muscular tension and pain due to over-exercise.
Hsiung Tan Tien Ta Wan (China)	Treatment of bruises and sprains.
Musk Xiong Dan Hemorrhoid Pills (China)	Aids in detoxification, relieves anal pain and bleeding.
Excellent Pills Hiya Kiogan Gold (Japan)	Reduces fever and has a tranquilizing and relieving effect on gastrointestinal disorders as well as stengthening effect on digestive organs. Nervousness, peevishness, convulsion, babies' night crying, common colds fevers from colds chills caught in sleep, diarrhea, vomiting, dyspepsia, loss of appetite and gastrointestinal malfunction.
Laryngitis Pills (China)	Antiphlogistic, antidotal, analgetic. For tonsillitis, pharyngitis, furuncles, carbuncle, abscess, infantile acute and chronic convulsions and other inflammation and swelling.
Nasal Allergy Pills (China)	Expels wind, eliminates inflammation, relieves headache due to the invasion of exogenous wind, and reduces allergy-induced asthma. Clear heat and resolve fire toxin.
Musk & Bear Gall Hemorrhoid Paste (China)	Clears heat, resolves fire toxin, reduces inflammation, reduces pain and control bleeding.
Hua Zhi Ling Wan (China)	Clears heat, cools blood, reduces swelling and relieves pain.
Extra Strength Hemorrhoidal (China)	Clears heat, relieves pain, and controls bleeding.

Source: Zhu (1989), *Clinical Handbook Of Chinese Prepared Medicines* and AuYeung (1991), personal files.