

Proceedings

4th International Symposium on the Trade in Bear Parts

Edited by: D. Williamson

**PROCEEDINGS
of the
FOURTH INTERNATIONAL SYMPOSIUM ON THE
TRADE IN BEAR PARTS**

**Nagano, Japan
October 4th, 2006**

Douglas F. Williamson, Editor

Symposium organized by:

TRAFFIC East Asia – Japan

With support from

**WWF Japan
WWF International Global Species Programme
IUCN/SSC Bear Specialist Group
Animals Asia Foundation**

TRAFFIC East Asia – Japan

**Published by TRAFFIC East Asia-Japan, 6th Fl. Nihonseimei Akabanebashi Bldg.,
3-1-14, Shiba, Minato-ku, 105-0014 Tokyo, Japan.**

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Suggested citation:

Williamson, Douglas F. (ed.). 2007. Proceedings of the Fourth International Symposium on Trade of Bear Parts, 4 October, 2006, Nagano, Japan. TRAFFIC East Asia-Japan, Tokyo.

ISBN 978-4-915613-17-3

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AGENDA

The Fourth International Symposium on Trade in Bear Parts – Asia Bear Trade –

4 October, 2006

08:30 ~ 09:00 Registration
09:00 ~ 09:10 The Ministry of Environment
Welcome Speech
09:10 ~ 09:20 TRAFFIC East Asia
Opening Remarks

Facilitator of the sections: **Douglas Williamson**

Section 1: GLOBAL OVERVIEW

09:20 ~ 9:40 **David L. Garshelis** (IUCN/SSC Bear Specialist Group)
Assessing the Status of the World's Bears— What Can We Tell from the Trade in Bear Parts?

Section 2: TRADE, ENFORCEMENT, AND ASIAN BEAR POPULATIONS
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9:40 ~ 10:00 **Chris Shepherd** (TRAFFIC Southeast)
Bear Trade in Southeast Asia: The Status of Protection for Southeast Asia's Bears
10:00 ~ 10:20 **Nobuo Ishii** (Tokyo Woman's Christian University)
Management of Bears and Utilization of Bear Bile in Japan

10:20 ~ 10:40 **COFFEE BREAK**

10:40 ~ 11:10 **Huang Haikui** (CITES Management Authority of Kunming, China)
Bear Farming and Bear Conservation in China
11:10 ~ 11:30 **Brij Kishor Gupta**
(Central Zoo Authority (Ministry of Environment & Forests, India))
Trade in Bears and Their Parts in India: Threats to Conservation of Bears
11:30 ~ 11:50 **Nguyen Xuan Dang** (Scientific Authority of Vietnam)
Bear Parts Trade in Vietnam and Measures for Its Control

11:50 ~ 12:10 **Jill Robinson** (Animals Asia Foundation)
Discussion Regarding the Impacts of Bear Bile Farming on Wild Bears in China and Vietnam

12:10 ~ 13:30 **LUNCH**

<p>Section 3: DISCUSSION - Does Trade Information Tell Us Anything About Wild Population -</p>
--

13:30 ~ 15:30 **All Participants**

15:30 ~ 16:00 **COFFEE BREAK**

<p>Section 4: CONCLUSION AND RECOMMENDATION</p>
--

16:00 ~ 17:00 **All Participants**

<p>Section 5: CLOSING REMARKS</p>
--

17:00 ~ 17:30 IUCN/SSC Bear Specialist Group/TRAFFIC
Next steps and closing remarks

ACKNOWLEDGMENTS

TRAFFIC East Asia-Japan would like to thank the following for their financial contributions, which made the symposium possible: WWF-Japan, WWF International's Global Species Programme and the Animals Asia Foundation.

TRAFFIC East Asia-Japan wishes to thank the organizing committee members, including Akiko Ishihara, Joyce Wu, and Sean Lam from TRAFFIC East Asia and Chris Shepherd from TRAFFIC Southeast Asia for all their help in planning and organizing the symposium. The organizing committee thanks Dr. Chris Servheen for his advice in planning the symposium. Special thanks go to Tsugumi Saito, Reiko Matsumiya, and Kahoru Kanari for their assistance and endless efforts in organizing and coordinating the logistics of the symposium. We would like to thank WWF-Japan's Conservation and Communication Divisions, particularly Hidenori Kusakari, Mouri Aiko, and Hisashi Okura, for their on-site assistance; and Nobuyuki Hatori and Haruko Ozaki for web design and financial expertise. Without their tremendous help, the symposium would never have been such a smooth event and great success.

TRAFFIC East Asia-Japan extends special thanks to the following speakers for their contributions to the roundtable discussion and proceedings: Nguyen Xuan Dang, David Garshelis, Brij Kishor Gupta, Huang Haikui, Nobuo Ishii, Jill Robinson, Chris Shepherd, and Douglas Williamson.

TRAFFIC thanks the following organizations for their assistance in placing symposium announcements on their websites: the International Association for Bear Research and Management (IBA), the World Conservation Union (IUCN), and WWF.

TRAFFIC East Asia-Japan wishes to express its gratitude for the support of the TRAFFIC Network, particularly Steven Broad from TRAFFIC International, Craig Kirkpatrick from TRAFFIC East Asia, James Compton from TRAFFIC Southeast Asia, and Crawford Allan from TRAFFIC North America.

INTRODUCTION

Of the eight species of bears in the world, four are endemic to Asia: the Asiatic Black Bear *Ursus thibetanus*, Sun Bear *Ursus malayanus*, Sloth Bear *Melursus ursinus*, and Giant Panda *Ailuopoda melanoleuca*. Two others, the Brown Bear *Ursus arctos* and Polar Bear *Ursus maritimus* also occur in Asia (the Polar Bear only in the Arctic region of Siberia), as well as in Europe and North America. Only the American Black Bear *Ursus americanus* and Andean (Spectacled) Bear *Tremarctos ornatus* do not occur in Asia.

Most Asian bear species face conservation threats, including the threat posed by ongoing trade in bear parts. Unfortunately, there is a lack of reliable data concerning Asia's bear populations and the challenges facing them. With this in mind, TRAFFIC, the joint wildlife trade program of WWF and the World Conservation Union (IUCN), took the lead in organizing the Fourth International Symposium on the Trade in Bear Parts, held on October 4th 2007 in Karuizawa, Japan. With support from WWF-Japan, the WWF International Global Species Programme, the IUCN/SSC Bear Specialist Group, and the Animals Asia Foundation, the symposium brought together representative from wildlife management authorities, conservation groups, animal welfare organizations, as well as academics, researchers, and members of the Traditional Medicine community. Approximately 90 people attended, most from Asian countries.

Earlier symposia in this series have focused on broad global issues such as the status of bear species and populations on the various continents they inhabit, the effectiveness of trade regulations and law enforcement in combating illegal trade in bear parts, the use of bear bile in traditional medicine and pharmaceutical alternatives to it, and related topics. These symposia were held in Seattle in 1994 and 1997, and in Seoul in 1999.

The current symposium was designed to focus specifically on issues related to the conservation and trade in Asian bear species and populations. After a presentation on the global status of bears (Garshelis), speakers addressed trade-related and other challenges to bears in Southeast Asia (Shepherd), Japan (Ishii), India (Singh and colleagues), and Viet Nam (Nguyen Xuan Dang). Two presentations then provided very different perspectives on the issue of bear farming in China, with one strongly defending bear farms as a way to produce bile needed for medicine while promoting *in-situ* conservation of wild bear populations (Huang and Li), and the other opposing the practice on the grounds that it is inhumane and unnecessary (Robinson and colleagues). The papers presented at the symposium are included in these proceedings.

These proceedings also include edited transcripts of two discussion sessions that were held towards the end of the symposium. Several inter-related points regarding these discussions stood out and should be noted here. First, as at the previous symposium there was again a repeated emphasis on the lack of reliable data regarding Asian bear species and populations. Very little is known for certain about bear population trends at the regional or country level in Asia, or even in defined areas within Asian range States. To what extent the trade in bear parts is having an effect on particular Asian bear populations is another question that remains to be answered definitively.

Second, although there appear to be many people in the region working on bear conservation and trade issues, effective regional communication and coordination remain lacking. Much of the discussion and several of the recommendations included in these proceedings are devoted to finding ways for regional governments, non-governmental organizations (NGOs) and individual researchers, project personnel, and others to better share data and ideas. TRAFFIC notes that the discussion sessions and some of the papers cover ongoing or new initiatives to increase regional communication

and coordination regarding bear conservation and trade at the various relevant levels. We hope these types of ideas will be pursued.

Third, it was noted that this lack of communication and coordination may be complicating funding prospects for bear conservation and trade work. There are clearly a number of ongoing individual projects in various sub-regions and countries, which are likely producing a lot of bits of valuable data. However, without a broader strategic framework it is difficult to assess which work and what approaches are most promising. Better communication and coordination may in turn make it easier to produce coherent regional or sub-regional bear conservation plans to take to potential funders.

The three previous TRAFFIC symposiums produced valuable recommendations on a global “macro” scale, for example pointing out the need for improved law enforcement to combat illegal trade, enhanced public education and awareness initiatives, enhanced capacity for wildlife agencies, greater funding for bear conservation programs, etc. The Fourth International Symposium on the Trade in Bear Parts took a different approach by focusing at a regional “micro” level on concrete, immediate actions that symposium participants and their affiliated organizations or networks can take to address conservation and trade issues regarding Asian bear species and populations. Symposium participants produced 12 recommendations for such actions in the afternoon discussion sessions. These are summarized on the next page and again at the end of the proceedings. TRAFFIC did not attempt to rank or prioritize among these recommendations, but rather lists them in the order that they were proposed. Section III of these proceedings is a summary of the discussions and debate that produced these recommendations, so that they can be understood in their full context.

TRAFFIC hopes and believes that this symposium helped to produce momentum for further dialogue and action on behalf of Asia’s bear species. Our purpose was to facilitate a dialogue among numerous stakeholders. We have found wide-ranging discussions to be the most productive. Although this sometimes leads to conflicting views, such contradictions can best be resolved by open and honest communication. The wide-ranging discussion of the current symposium is seen clearly in the papers included in this volume. Needless to say, these papers represent the views of their authors, and not necessarily the views of TRAFFIC, WWF, or IUCN.

We encourage participants and others interested in bear conservation and trade issues to follow up on any papers or ideas in these proceedings that are of particular interest, especially regarding the recommendations made. Ultimately, it will be the involvement and commitment of those who pursue such ideas that will determine future progress in addressing the serious challenges posed to Asia’s bears by trade and other threats.

Akiko Ishihara
Douglas F. Williamson
Tokyo, April 2007

SUMMARY OF MAIN CONCLUSIONS AND RECOMMENDATIONS

- Consider developing some form of communications network, perhaps a listservs under the aegis of the bear trade expert group or another entity, to facilitate communication and dissemination of information (reports, new or current papers, media pieces, emerging data, etc.) between people and groups working on or interested in bear trade and conservation issues in Asia. Models for such an initiative might be found in similar networks established by the IUCN/SSC Cat and Freshwater Turtle Specialist Groups. It was noted that the IUCN/SSC Bear Specialist Group has identified as a priority developing an interactive website for people to not just download information, but also to communicate back information about bears that the group does not have.
- Develop a matrix and compile a database of different issues related to bear conservation and trade, in order to create a country-by-country picture of the status of bear conservation in the region. For example, categories could include the status of law enforcement, the known state of bear populations and conservation efforts, political will to act, capacity of implementing agencies, possible NGO and government partners, identified trade routes, etc. Each country representative could be surveyed with such questions, with particular input from the expert teams on the Asiatic Black Bear, Sun Bear, and trade. The existing template for Asian Elephants *Loxodonta africana* could be a model.
- The bear farming industry in Viet Nam and (especially) China should be opened up to greater scrutiny. Both countries should invite delegations of experts to the bear farms in their countries so that workshops can be held and panels subsequently formed.
- NGOs that have bear experts on the ground in different Asian countries should produce more reports on their work, have the reports consolidated so that work is not duplicated, and provide help and funding to promising field researchers and projects. It was recommended that TRAFFIC in particular produce and disseminate more reports.
- TRAFFIC or other NGOs should conduct meetings or workshops at a more local regional level, in host countries, to sensitize government officials (policy-makers, politicians, etc.) on the importance of bear conservation at a smaller regional level. It is easier to talk about specific strategies in such sessions. If TRAFFIC or another NGO cannot conduct the actual workshops because of lack of personnel and resources, they should at least take some initiative to start a dialogue with governments and add a little bit of pressure, and then let the governments or other NGOs take over. Perhaps a working group should be established to pursue this idea.
- For countries with low capacity of government experts in wildlife or CITES, expertise often resides in universities and research organizations. NGOs should support these facilities, particularly by providing, free-of-cost, hard copies of reports, bulletins, etc. on critical bear conservation and trade issues. TRAFFIC in particular should disseminate such information to university libraries for students studying environment and biodiversity.
- There should also be a centralized online library with informational resources that governments and NGOs can use to increase public awareness in local communities critical to bear conservation. Whenever possible, relevant materials should be published in local languages or available for translation.

- There should be an effort to find trouble spots—places where bears have been recently extirpated or are in imminent danger of extirpation—that could be used to help wake the world to the fact that bear populations really are in trouble and are actually disappearing from a lot of places. There is also an importance to tying that to the bear trade where this is the case to make the direct connection.
- The IUCN/SSC Bear Specialist Group will write a letter to stakeholders stating that it is a fact that the bear trade is having a negative impact on bear populations in a large part of southern and southeastern Asia, because when there is a population that is already declining, and bears are taken out of that population, there is a negative effect. The letter could be published in the *International Bear News*, put on the proposed website, and eventually expanded through corroborating information people might contribute, especially regarding bear trade hotspots.
- A workshop should be held in the very near future at which a panel of TCM or other traditional medicine doctors from various countries involved would set the record straight about how essential bear bile is in the industry, whether it can be replaced, and what the cost would be to actually replace it if that is an option.
- Because much of the bear trade crosses international borders, especially land borders, countries in the region have to commit to stop cross-border trade. Efforts to date to curb or combat wildlife smuggling have not been effective or successful, with corruption a likely cause in some countries. The notion of finding an independent, reliable agency that can be present along these international borders to combat corruption and ensure effective border enforcement should be considered.
- To reduce the illegal wildlife trade in Southeast Asia, including bear parts, there is an urgent need for trans-boundary or border agreements between neighbouring countries. China should take the lead, because it is not only a big market for bear parts, but it also has an influential position economically and socially with Southeast Asian countries. If China's market and trade can be stopped or reduced, the trade from Southeast Asian countries can automatically be reduced. A good start would be to get trans-boundary or border agreements between two or three countries to reduce the illegal wildlife trade, including bear parts. Perhaps this is something that will be addressed by ASEAN-WEN.

I. GLOBAL OVERVIEW

ASSESSING THE STATUS OF THE WORLD'S BEARS — WHAT CAN WE TELL FROM THE TRADE IN BEAR PARTS?

David Garshelis
Minnesota Department of Natural Resources
and
Co-chair IUCN/SSC Bear Specialist Group

Abstract: Among the eight species of bears, rigorous population estimates have been obtained for only three: American Black Bears, and North American and European populations of Brown and Polar bears. In Asia and South America, population assessments have been more loosely based, with estimates of bear abundance often being derived from casual observations, questionnaires, interviews, sign surveys, or extrapolations from other species. Poor population estimates (“guesstimates” and extrapolations of crude data) are of little value in directing or appraising conservation actions, and in fact may hamper monitoring efforts because they establish an unreliable benchmark against which future estimates may be measured.

Assessments of population trend are especially important in areas affected by the trade in bear parts. It is tempting to use the trade data itself (i.e., confiscation records) as a monitoring tool, much like statistics from a sport harvest. However, trade data represent only a partial and sometimes flawed tally of bear mortalities. Moreover, even if the data were more accurate, they are difficult to interpret. A downward trend in confiscations could represent a plunging bear population, declining rates of poaching due to better enforcement, or, conversely, poorer enforcement (poachers less prone to being caught). A better approach to population monitoring, suggested here and already employed in some areas, is to assess changes in area of occupancy. This entails simple presence/absence data. Matching changes in occupancy to geo-referenced data on the trade in bear parts would be helpful in ascertaining population level effects of poaching.

INTRODUCTION

Reliable information on the status of bears is important for: (1) assessing conservation needs; (2) evaluating population responses to conservation actions; and (3) making formal designations of protection, such as IUCN red-listing and national regulations. Populations of bears are difficult to estimate because in forested environments they are rarely seen, and in many areas their densities are so low that even mark-recapture may be untenable. Ironically, the places where population monitoring is most crucial because populations are small are also the most difficult to monitor for this same reason. Small bear populations are small because of limited habitat and/or direct human exploitation. Where habitat is abundant, many North American and European populations of bears are large enough to sustain annual, managed sport harvests. Most small populations on these two continents are isolated remnants that are no longer exploited but continue to suffer from past events that reduced population size and connectivity. Present efforts focus on restoring these populations through habitat restoration, stringent protection from killing, and augmentation with bears from elsewhere (McLellan 1998; Swenson *et al.* 2000). In most of South America and Asia, the status of bear populations is far less clear, and few efforts have been made to understand the current situation, much less to improve it.

In legally hunted populations, the hunting data themselves provide some indication of population status. Whereas interpretation of such data is more an art than a science, and may lead to some short-term errors both in understanding and in management, the process is, in the long-term, somewhat self-correcting (a process referred to as adaptive management). Eventually, severely over-

harvested populations will show signs of such, and the level of hunting can be corrected by closing or restricting seasons. By contrast, unmanaged exploitation, such as the killing of nuisance bears or the poaching of bears for their parts provides little useable data to assess population size or trend. The uncertainty stemming from this killing is what makes it so insidious.

This paper briefly reviews methods of population assessment employed for each of the eight species of bears. The current status of the world's bears is summarized in **Table 1**. The paper concludes with a discussion of the issue of population assessment and monitoring using data obtained from the trade in bear parts, and presents recommendations for future trend monitoring.

Table 1. Worldwide Status of the Eight Species of Bears

Species	IUCN category	CITES appendix	Rangewide population estimate ^a	No. countries inhabited	Annual sport harvest
American black	Not threatened	II	~900,000 ^b	3	40–50,000
Brown/grizzly	Not threatened	I ^c , II	>200,000	46	8,000
Polar	Vulnerable ^d	II	20–25,000	5	800 ^e
Andean	Vulnerable	I	—	6 ^f	0
Giant panda	Endangered	I	~2,000	1	0
Sloth	Vulnerable	I	—	5 ^g	0
Sun	DD → Vul ^h	I	—	11	0
Asiatic black	Vulnerable	I	—	18	600 ⁱ

^a Values shown only for species where estimates have been produced for most of the range (references in text).

^b Approximately 750,000 American black bears inhabit Canada and the U.S., excluding Alaska; value here assumes 150,000 black bears inhabit Alaska, although no reliable estimate exists.

^c Only selected central Asian populations are listed in Appendix I.

^d Reclassified as Vulnerable in 2006 due to melting of Arctic ice.

^e Principally a subsistence harvest by indigenous people.

^f Includes Argentina, where recent sightings have occurred, but not Panama, where evidence of occurrence is sketchy.

^g Includes Bangladesh, where existence is uncertain.

^h Will be reclassified in 2007 from Data Deficient to Vulnerable due to diminishing tropical forests.

ⁱ Sport harvests occur only in Japan and Russia. The nuisance kill in Japan and illegal kill in Russia both far exceed the sport harvest.

AMERICAN BLACK BEAR

American Black Bears *Ursus americanus* exist in Canada, the USA, and Mexico. From the time of European settlement until well into the 20th century, these bears were widely and purposefully over-hunted with the goal of eliminating or at least severely reducing populations in order to reduce damage to crops and livestock (Cardoza 1976). Governments paid a bounty for killing black bears. Population recovery occurred only after states and provinces across North America recognized a need to protect black bears as a big game species (Miller 1990a). As such, the number killed was regulated, and moreover an infrastructure of agency personnel and hunters policed illegal take. Consequently, for the past two decades, most populations have grown both numerically and geographically (Williamson 2002; Garshelis and Hristienko 2006).

Assessments of state or provincial populations of American Black Bears are often based on mark-recapture population estimates, either extrapolated from small areas to larger areas, or in a few cases obtained directly for large areas (Garshelis and Visser 1997; Diefenbach *et al.* 2004). Population estimates are generally insufficient in themselves to discern population trend (Garshelis and Hristienko 2006), so management agencies also rely on indices such as hunting statistics, bait-station visitation, nuisance activity, and sightings (Garshelis 1991). None of these provide reliable indications of short-term changes in population size. Nevertheless, agencies seem to have been sufficiently conservative in their management as to safeguard against errors of imprecision. As a result, North American black bear numbers appear to be increasing by about two per cent per year, and more than 60% of individual states and provinces report increasing populations (Garshelis and Hristienko 2006). With a total population estimated at about 900,000, this species is more than twice as abundant as all other species of bears combined, even though it exists in only three countries (**Table 1**). An estimated 40 000–50 000 American black bears are harvested annually by sport hunters in the USA and Canada (Williamson 2002).

The American Black Bear is not listed in the IUCN red list, but is listed on Appendix II of the Convention on International Trade in Endangered Species (CITES) because its gallbladder, a valued commodity in eastern Asia, cannot be readily distinguished from that of threatened Asian bears. The Appendix II listing requires the tagging of all gallbladders that are transported for sale in Asia so as to identify them as being legally obtained American black bears. However, most jurisdictions in North America prohibit hunters from selling the gallbladder of their bear (Williamson 2002).

BROWN/GRIZZLY BEAR

Brown/Grizzly Bears *Ursus arctos* face a highly diverse set of circumstances both in terms of habitat and human exploitation within their expansive range across North America, Europe, and Asia. In much of North America and Europe they were intentionally extirpated (or nearly extirpated), mainly in an attempt to protect livestock but also for fear of human injury (Brown 1985; Swenson *et al.* 1995, 2000). A history of prolonged over-exploitation in Europe stretching back centuries resulted in their elimination from many countries. In North America, Grizzly Bears were subjected to a combination of guns, traps, and poison, resulting in their extermination in just a few decades from the entire southern half of their range, with the last known individual being purposefully killed in the southwestern USA in 1935 and in Mexico in 1960 (Brown 1985; Mattson and Merrill 2002). In Asia, records are much poorer. During the 20th century, brown bears seem to have been eliminated from Syria (Talbot 1960), and possibly Bhutan, but the dates of these extirpations are unclear. Very small numbers of brown bears still seem to be hanging on in Iraq and Nepal (Gurung 2004; Ridings 2006).

In states and provinces of the USA and Canada, and in some parts of Europe, rigorous estimates of brown bear numbers have been produced through various modifications of mark-recapture, including mark-resight (Mace *et al.* 1994; Miller *et al.* 1997), DNA hair-snaring

(Boulanger *et al.* 2002), and DNA extracted from feces (Bellemain *et al.* 2005). Where populations are especially small, nearly every individual may be known from previous capture, sightings, and DNA from collected hair and scats (Taberlet *et al.* 1997; Lorenzini *et al.* 2004). Aerial line transects are also being used in some open habitats of North America (Becker 2001). In contrast, estimates of Brown Bear populations in Asia have generally been derived from less rigorous methods, including aerial or ground counts without sightability corrections (Chestin 1994; Gordienko *et al.* 2006), track counts (Vaisfeld and Chestin 1993; Chestin 1994), and extrapolation of guesstimates (expert opinions) of density to habitable area (Sathyakumar 2006a). Summing various national and regional estimates yields a total world population of over 200 000 brown bears (Servheen *et al.* 1999; Swenson *et al.* 2000; Japan Bear Network 2006).

Russia has the largest number of brown bears, with estimates exceeding 100 000 (Chestin 1999). Brown bears are hunted in Russia, several former Soviet Republics, Japan (Hokkaido Island), North America (Canada and Alaska, USA), and several European countries. By contrast, several other European countries have populations of fewer than 50 bears. Brown bear populations in central Asia are also sparse and fragmented. Bears from the Great Gobi in Mongolia through western China and into the Himalayas of Pakistan, India, Nepal, and Bhutan are listed on Appendix I of CITES; all other brown bear populations are on Appendix II. The IUCN Red Listing of brown bears considers only the species as a whole, so as such it is not considered threatened. Future efforts by the Bear Specialist Group will focus on delineating small, isolated and hence threatened populations for IUCN listing.

POLAR BEAR

Polar Bears *Ursus maritimus* exist in Arctic regions of five countries — Canada, the USA (Alaska), Russia, Norway (Svalbard), and Denmark (Greenland); occasional vagrants also reach Iceland. The five range countries signed treaties for the co-management of polar bear populations, which include limitations on take, methods of population estimation and monitoring, and recommendations for research. Nineteen populations have been identified, with a total world population estimated at 20 000–25 000 (IUCN Polar Bear Specialist Group). Intensive mark–recapture work has been conducted in several populations to obtain estimates of survival and population size (Amstrup *et al.* 2001; Taylor *et al.* 2002). Additionally, experiments have been conducted to test aerial line transects as a means of obtaining population estimates (Evans *et al.* 2003). Some scientists have also employed traditional knowledge of native people in their assessments of population status (Taylor *et al.* 2001).

Many Polar Bear populations are harvested (by indigenous people). These harvests tend to be closely regulated, with quotas based both on feedback from hunters as well as rigorous research data (Taylor *et al.* 2006). Conversely, polar bear populations have been adversely impacted by pollutants and now by global warming. Projections related to global warming indicate a retraction of the area of sea ice (necessary for polar bears to hunt seals) by more than 30% over the next 50 years (IUCN Polar Bear Specialist Group <http://pbsg.npolar.no/>). This prompted a change in their IUCN listing from not threatened to Vulnerable in May, 2006 as well as a Threatened designation (proposed in 2007) on the USA Endangered Species list.

ANDEAN (SPECTACLED) BEAR

The Andean Bear *Tremarctos ornatus*, like the Polar Bear, also exists mainly in five countries (Venezuela, Colombia, Ecuador, Peru, and Bolivia), but with recent sightings (a range extension) in Argentina (Del Moral and Bracho S. 2005). Compared to polar bears, however, far less work has been conducted to coordinate management and conservation among these range countries (but see: Rodríguez *et al.* 2003), and very little effort has been directed at assessing population status. In the

late 1990s, a range map was produced and an approximate area of occupancy estimated (260 000 km²). Applying minimum and median density estimates from American black bears to this area yielded a rough rangewide population estimate of more than 20 000 Andean Bears (Peyton *et al.* 1998). It is generally recognized that estimates so obtained are not especially credible and would be of little value in monitoring population trend (Rodríguez *et al.* 2003).

No rigorous population estimates have been obtained anywhere in the range of this species. However, extensive sign surveys have been conducted in some areas, mainly to investigate habitat use, but also to achieve better documentation of occupied area and to identify priority areas for conservation (Cuesta *et al.* 2003; Rios-Uzeda *et al.* 2005). Such information would also be useful for monitoring population trends (presence/absence and relative abundance).

It appears that the greatest threat to Andean bears is land conversion to agriculture, which leads to increased bear damage to crops and livestock, eventually resulting in the killing of bears by local farmers. It is possible that the level of killing is sustainable in many areas, but significant uncertainty regarding population trend, combined with an apparent shrinkage of the range, was sufficient to list this species as Vulnerable by the IUCN and on Appendix I of CITES.

GIANT PANDA

The Giant Panda *Ailuropoda melanoleuca* has the most restrictive range of any species of bear. Existing only in China, it is not considered a bear by many Chinese scientists, although a preponderance of evidence indicates its close affiliation with the Ursidae (Bininda-Emonds 2004). A large portion of the current range is now contained within designated Nature Reserves, of which there are nearly 60. Chinese programs to prevent soil erosion (initiated after problems with extensive flooding and loss of life and property in the late 1990s) mandated the abandonment of croplands on steep slopes and conversion of these lands to forest. This action seems to be benefiting pandas, as evidence exists that their range and abundance has increased, reversing a decline in habitat quality that had previously been a growing concern (Loucks *et al.* 2001). Nevertheless, pandas are the only ursid considered Endangered by the IUCN, because of their small total population size.

Three rangewide surveys of panda sign have been conducted to assess the extent of the panda's geographic range, and also to estimate numbers. Methods used in these surveys have evolved over time, making the estimates difficult to compare. The mid-1970s estimate was about 1000, the mid-1980s estimate was 900–1400, and the most recent survey in 2000–2002 produced an estimate of about 1600. The perceived increase, though, may be attributed in part to a larger search area and a change in methodology.

The most recent survey involved teams searching for scats along more than 11 000 transects in rugged mountainous terrain. Fresh scats were defined as being from different individuals if the lengths of the bamboo fragments within the scats differed (indicating different bite sizes), or if the scats were separated by a distance considered too large for a panda to roam in a few days. This method relies on two principal assumptions: (1) fresh scats from all individuals were found (there is no correction for undetected individuals); and (2) the bite size and spatial distance criteria are reliable for differentiating individuals. Genetic data obtained from scats in one reserve suggest that these criteria may not be reliable, prompting recommendations to use genetic information to differentiate individuals in future surveys of this species (Zhan *et al.* 2006).

SLOTH BEAR

Sloth Bears *Melursus ursinus* are endemic to the Indian subcontinent, from the lowlands (terai) of Nepal and Bhutan, south through India, to Sri Lanka. Their continued existence in

Bangladesh remains uncertain, as virtually all suitable lowland habitat in that country has been destroyed.

Few population estimates for this species are well supported. One rigorous estimate was obtained in a national park in Nepal during the early 1990s, based on mark–resight with radiocollared animals (Garshelis *et al.* 1999a). Several rangewide estimates have been attempted. In the late 1990s, density guesstimates provided by officials in various protected areas (PAs) in India were applied to an estimate of range area obtained from presence/absence information and forest cover maps to yield estimates of total sloth bear numbers (Garshelis *et al.* 1999b). A wide span of possible estimates arose, due to considerable uncertainty regarding Sloth Bear densities and inhabited area, especially outside protected areas. Since then, a more refined estimate of the total occupied range in India has been obtained from an extensive survey of forest managers, researchers and naturalists. Estimates of abundance provided by these survey respondents were graded on a four-level scale (rare, occasional, frequent, abundant), which was later converted to density, and then applied across the range to generate an estimate of 6000–11 000 bears in India (Yoganand *et al.* 2006). The unverifiable conversion process used to obtain this value limits its usefulness. Another recent estimate, patterned after the earlier approach of using numerical estimates of abundance (rather than relative or scaled abundance) in individual PAs and separate abundance estimates outside PAs yielded an estimate of approximately 20 000 sloth bears in India.

Sloth bears were reported to exist in 260 distinct forest patches in India (Yoganand *et al.* 2006), of which 174 were PAs, including 46 National Parks and 128 Wildlife Sanctuaries (Chauhan 2006). Populations appear to be reasonably well protected inside these PAs, but faced with deteriorating habitat conditions outside PAs. Reduced cover and food resources outside PAs (Akhtar *et al.* 2004) have led to increased bear–human conflicts, including frequent mauulings (Bargali *et al.* 2005). It is estimated that half to two-thirds of the Sloth Bears in India live outside PAs. No estimates of rangewide abundance are available outside India. However, in Sri Lanka, where an extensive survey of the range was conducted in 2004, it was found that about half the occupied range lies within PAs (Ratnayeke *et al.* 2006). Threats to Sloth Bears outside PAs were largely responsible for their listing as Vulnerable by the IUCN.

SUN BEAR

Sun Bears *Helarctos malayanus* inhabit eight countries of Southeast Asia (Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia, Indonesia, and Brunei) as well as eastern India, Bangladesh, and southern China (where their status has not been recently confirmed). They face escalating threats from deforestation and poaching, the former being easier to document (Meijaard 1999; Wong 2006). Unlike the situation with Sloth Bears, significant threats from deforestation occur both within and outside many PAs in Southeast Asia (Fuller *et al.* 2004).

As a way of signaling alarm over the rapid rate of deforestation, Meijaard (2001) attempted to estimate the number of Sun Bears impacted within the Indonesian portion of Borneo (Kalimantan). Using estimates of forest cover loss, he estimated that 14 000–28 000 Sun Bears would die during the decade 2000–2010. The underlying basis of this estimate of mortality was a crude density estimate of one bear per four square kilometres posed by Davies and Payne (1981), based on sightings of two bears and nine observations of bear sign (most of which was old) in Sabah (Malaysian Borneo). If this estimate of density is extrapolated throughout the range of this species, Sun Bears would rival brown bears as the second-most common species in the world (**Table 1**), totaling well over 200,000 (Garshelis 2002)—an order of magnitude higher than the current rough estimates for Sloth Bears and Andean Bears. Such an estimate seems highly improbable, and highlights the dangers of extrapolating crude density estimates to large areas.

Sun Bears were listed as Data Deficient (DD) by the IUCN in 1996, in part because of a lack of biological and ecological information. Although such information is less available for this bear species than the other seven, that is not especially relevant in terms of the species red-listing. Information on population size and/or rate of change is all that is needed to assess whether a species should be red-listed (2001 IUCN Red List Categories and Criteria: http://www.iucnredlist.org/info/categories_criteria2001). Given the Sun Bear's obvious affinity for forested areas and known rates of deforestation in Southeast Asia, the DD listing is unwarranted (and was probably unwarranted at the time it was so-listed). As such, this species will be listed as Vulnerable in 2007.

ASIATIC BLACK BEAR

The Asiatic Black Bear *Ursus thibetanus*, the Asian ecological equivalent of the American Black Bear, occurs in 18 Asian countries, from Iran eastward to Vietnam, and northward to the Russian Far East, plus Japan and Taiwan. The range is broken by gaps in habitat, the largest being in eastern China. The range of Asiatic Black Bears broadly overlaps that of sun bears in Southeast Asia, although it does not extend into Malaysia. Like the Brown Bear, Asiatic Black Bears are legally hunted in Japan and Russia; elsewhere in its range this species is protected, with exceptions for removal of bears that damage crops, kill livestock, or attack people.

No rigorous population estimates exist for this species. Japan formerly posed estimates ranging from 8000–14 000 Asiatic Black Bears on Honshu Island, but these are no longer considered valid. A total of 5000–6000 Asiatic Black Bears in the Russian Far East was derived from various density estimates, but the methodological basis for these estimates is unclear (Aramilev, 2006). Likewise, rough density estimates, without corroborating methodology or data, have been extrapolated country-wide to produce estimates of 7000–9000 Asiatic black bears in India (Sathyakumar, 2006b) and 1000 in Pakistan (Sheikh, 2006). A host of recent countrywide estimates have been posed for Asiatic Black Bears in China, ranging from 15 000–46 000 (summarized by Garshelis, 2002; Gong and Harris, 2006), with an official government estimate (in 2003) of about 28 000. None of these estimates has been substantiated with actual data.

Three principal threats have been identified for this species: habitat loss, capture (for pets or shows), and direct killing (for parts or to protect crops, livestock, or human well-being). There is no consensus as to which factor has the single greatest impact on bear numbers because types and extent of threats vary regionally (Garshelis and Steinmetz, 2005). In China, the country with undoubtedly the largest number of Asiatic Black Bears, poaching for the commercial trade in bear parts—mainly paws and gallbladders—is of paramount concern. An increasing number of PAs are being established in China, India, and other countries within the range of Asiatic Black Bears (Chape *et al.* 2003), mainly to protect other species, but serving as well to increase protection for bears. Nevertheless, the enormity of the threats and lack of hard data on population sizes and trends are reasons for IUCN listing this species as Vulnerable.

POPULATION ASSESSMENTS BASED ON DATA FROM THE TRADE IN BEAR PARTS

The commercial trade in bear parts represents an obvious detriment to the status of bears in Asia. In one sense this offtake can be viewed like a harvest (Sutherland, 2001). If it is small enough to be sustainable it might not have an adverse impact on population viability, even if the actual take is unknown, unregulated, and illegal (Garshelis, 2002). On the other hand, any take of small populations, even if seemingly sustainable in terms of *average* population size and rates of recruitment, may, because of demographic stochasticity, increase the likelihood of extirpation in the

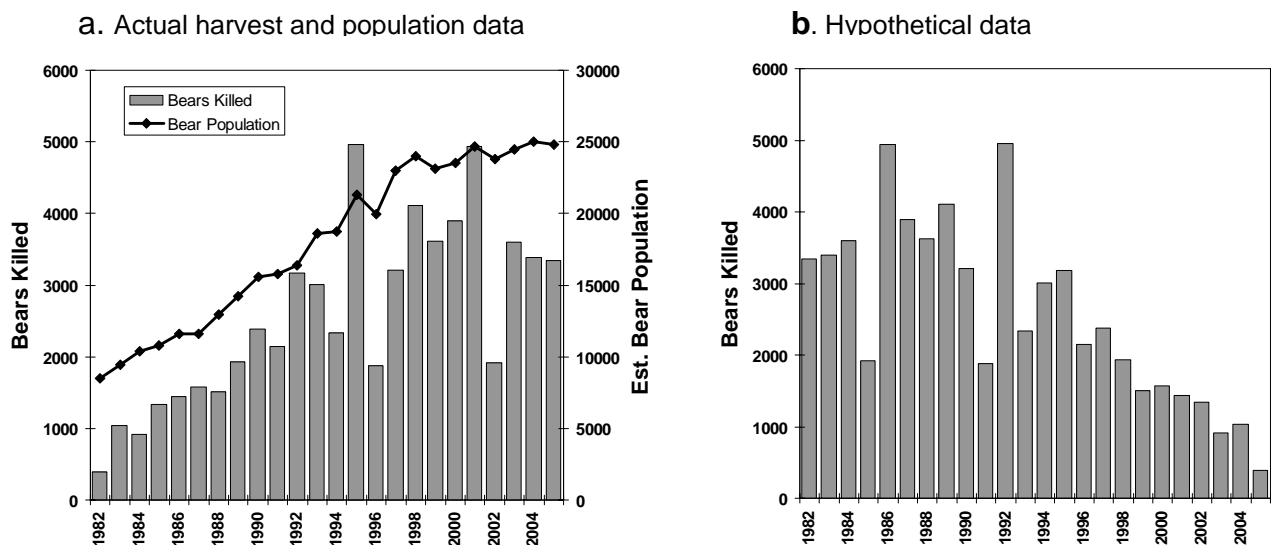
long term (Boyce *et al.* 2006). That is, normal year-to-year changes in vital rates can cause appreciable swings in the size of small populations, which, combined with human-caused mortality may remove the last female.

A major question regarding the trade in bear parts is not only what impact it has on populations, but also whether the meager data obtained (confiscation records) can themselves be used to assess population status and trend, akin to the use of statistics from sport hunting. Unlike hunting statistics, confiscations of bear parts provide no indication of sex and age. Most importantly, though, confiscation records differ from harvest records in representing just a small, unknown fraction of the dead bears. Changes in regulations and enforcement, and also sheer serendipity, affect how many bear parts are intercepted and confiscated each year.

Bile confiscation records may be a particularly poor index of the extent of human-induced bear mortality because much of the confiscated bile is likely either counterfeit (pig or other animal bile passed off as bear) or from farmed bears (Servheen, 1999). Thus, converting the mass of confiscated bile to purported dead bears may be grossly misleading (Garshelis, 2002).

Presuming, though, that one could distinguish fake and farmed bile to derive a minimum estimate of the number of dead bears, data interpretation still remains problematic. Governmental agencies interpreting statistics from managed, legal hunts often assume that a steadily growing annual harvest reflects a growing population; that is, with greater numbers of animals, hunting success and/or sales of hunting licenses increase, yielding higher harvests (**Figure 1**). If this were not true, and instead hunters took a steadily increasing proportion of the population (due to greater efficiency or more effort), then at some point the harvest would cause the population to decline, leading to an eventual collapse in the harvest. This logic, however, does not necessarily hold for illegal, especially commercially-motivated hunting. Here, regulations, enforcement, economic conditions, and availability of traps, guns, poisons, and explosives all contribute to the incentive to hunt and sell parts. Another contributing factor is the extent of crop and livestock damage caused by all species of wildlife: for example, farmers protecting their crops from a growing problem with Wild Boar *Sus scrofa* may set out snares and poison that inadvertently kill bears, the parts of which are then sold. Given all these confounding variables, it would be difficult to interpret population trend from trends in known, illegal bear kills. A rising trend in confiscations would seem to be an obvious reason for concern; conversely, a declining trend in confiscations may be symptomatic of severely reduced numbers of living bears, and no change in numbers of confiscations may be indicative of a significant, continuing problem despite efforts to boost enforcement (see **Figure 1**).

Figure 1. Relationship Between Bear Harvests and Population Size*



* Agencies managing sport hunting generally expect a positive relationship between bear harvests and population size, because hunters tend to be more successful or more hunting licenses are sold as bear numbers increase (panel a: actual data for American Black Bears from Minnesota Department of Natural Resources). Conversely, declining harvests suggest a declining population (panel b: hypothetical data from the mirror image of panel a). If the same data were from confiscation records of illegally-killed bears (e.g., CITES records from the trade in bear parts), they might be interpreted differently. In that case, an increasing trend in numbers of dead bears (panel a) might suggest a growing poaching problem causing a declining bear population, whereas decreasing numbers of dead bears (or bear parts; panel b) might reflect better enforcement and less poaching, with a more positive outlook for the population. On the other hand, a decreasing trend in confiscated bears could also stem from poorer enforcement (poachers less prone to being caught), or, like the harvest situation, a declining population of bears, making them harder to poach. The point is that such records are open to widely varying interpretations.

RECOMMENDATIONS FOR FUTURE BEAR POPULATION ASSESSMENTS

In most parts of the world, rigorous bear population estimates are neither practical (financially or logistically) nor necessary. Moreover, even with a sequential series of robust estimates, population trends are rarely obvious, except over the long-term (Diefenbach *et al.* 2004) or in cases of sharp increase or decline (Miller, 1990b; Garshelis and Noyce, 2006). Inaccurate or imprecise estimates, as posed for Asian and South American bears, are more apt to hamper than help monitoring efforts because they establish an unreliable baseline against which future estimates may be measured.

Methods for ascertaining population trends that do not require actual population estimates are likely to be more useful. Japan, for example, has moved away from population estimation and toward trend assessments based mainly on changes in occupied area (Mano, 2006; Oi and Yamazaki, 2006). Simple presence-absence information in designated grid cells, obtained from questionnaires given to hunters and other local people, indicate changes in the area occupied by bears. Sign surveys and camera trapping may be helpful for corroborating the opinions of local people, or obtaining presence/absence information in remote areas. Over time, such information would highlight areas of

local extirpation or reoccupation, which would be indicative of failures and successes, respectively, in bear conservation. Geo-referenced data regarding the trade in bear parts matched to these localities would be far more informative than trade data not corresponding to any information on bear abundance.

An example of a situation where tallies of dead bears were linked to demographic information may be instructive. In western Canada, Benn and Herrero (2002) collected data on known Grizzly Bear mortalities from human-related causes. These data showed a clear declining trend concurrent with changes in bear management that specifically strove to reduce mortalities (related to nuisance activity and highway crossings). These results suggested a positive outlook for the population, yet the possibility remained that even the lower mortality rate was still unsustainable. Only after matching these data to a study of the population growth rate was it concluded that the improved management was indeed effective in promoting an increase in the population (Garshelis *et al.* 2005).

In terms of bears killed for the trade in bear parts, no matching demographic information is available, and moreover the mortality data are incomplete and inaccurate because they stem from an illicit activity. This is not to say that the collection and examination of such data are unimportant, only that, in the absence of other information, these data are highly subject to misinterpretation. There is good reason to be concerned, even alarmed, over the continuing trade in bear parts, but there is, unfortunately, very little substantive evidence of its true impacts on wild bear populations. Having said that, there is no question that reducing the trade in bear parts, and hence the number of human-caused bear mortalities, could only be beneficial for sustaining the many small, isolated bear populations that exist today.

REFERENCES

- Akhtar, N., H. S. Bargali, and N. P. S. Chauhan. 2004. Sloth bear habitat use in disturbed and unprotected areas of Madhya Pradesh, India. *Ursus* 15:203-211.
- Amstrup, S. C., T. L. McDonald, and I. Stirling. 2001. Polar bears in the Beaufort Sea: a 30-year mark-recapture case history. *Journal of Agricultural, Biological, and Environmental Statistics* 6:221-234.
- Aramilev, V. V. 2006. The conservation status of Asiatic black bears in the Russian Far East. *In* Understanding Asian bears to secure their future. Japan Bear Network, Ibaraki, Japan, p. 86-89.
- Bargali, H. S., N. Akhtar, and N. P. S. Chauhan. 2005. Characteristics of sloth bear attacks and human casualties in North Balispur Forest Division, Chhattisgarh, India. *Ursus* 16:263-267.
- Becker, E. F. 2001. Brown bear line transect technique development. W-27-3, Study 4.30, Alaska Department of Fish and Game, Juneau, AK.
- Bellemain, E., J. E. Swenson, D. Tallmon, S. Brunberg, and P. Taberlet. 2005. Estimating population size of elusive animals with DNA from hunter-collected feces: four methods for brown bears. *Conservation Biology* 19:150-161.
- Benn, B., and S. Herrero. 2002. Grizzly bear mortality and human access in Banff and Yoho National Parks, 1971-98. *Ursus* 13:213-221.
- Bininda-Emonds, O. R. P. 2004. Phylogenetic position of the giant panda. *In* Giant pandas: Biology and conservation, D. Lindburg and K. Baragona, (eds). University of California Press, Berkeley, California, p. 11-35.
- Boulanger, J., G. C. White, B. N. McLellan, J. Woods, M. Proctor, and S. Himmer. 2002. A meta-analysis of grizzly bear DNA mark-recapture projects in British Columbia, Canada. *Ursus* 13:137-152.
- Boyce, M. S., C. V. Haridas, C. T. Lee, and NCEAS Stochastic Demography Working Group. 2006. Demography in an increasingly variable world. *Trends in Ecology and Evolution* 21:141-148.
- Brown, D. E. 1985. The grizzly in the southwest. Documentary of an extinction. University of Oklahoma Press, Norman, Oklahoma.
- Cardoza, J. E. 1976. The history and status of the black bear in Massachusetts and adjacent New England states. Research Bulletin 18, Massachusetts Division of Fisheries and Wildlife, Westborough, Massachusetts.
- Chape, S., S. Blyth, L. Fish, P. Fox, and M. Spalding. 2003. 2003 United Nations List of Protected Areas. IUCN - The World Conservation Union & UNEP World Conservation Monitoring Center, Gland, Switzerland and Cambridge, U.K. (available at: http://www.unep-wcmc.org/wdpa/unlist/2003_UN_LIST.pdf).

- Chauhan, N. S. 2006. The status of sloth bears in India. *In* Understanding Asian bears to secure their future. Japan Bear Network, Ibaraki, Japan, p. 26-34.
- Chestin, I. E. 1994. Some comments on different methods of counting brown bear, *Ursus arctos* L., 1758, populations used in the former USSR. *International Conference on Bear Research and Management* 9(1):295-299.
- Chestin, I. E. 1999. Status and management of the brown bear in Russia. *In* Bears. Status survey and conservation action plan, C. Servheen, S. Herrero, and B. Peyton (eds.). IUCN/SSC Bear and Polar Bear Specialist Groups, Gland, Switzerland and Cambridge, U.K., p. 136-143.
- Cuesta, F., M. F. Peralvo, and F. T. van Manen. 2003. Andean bear habitat use in the Oyacachi River Basin, Ecuador. *Ursus* 14:198-209.
- Davies, G., and J. Payne. 1981. A faunal survey of Sabah. Project 1692, World Wildlife Fund, Malaysia, Kuala Lumpur, Malaysia.
- Del Moral, J. F., and M. V. A. E. Bracho S. 2005. Evidence of Andean bear in northwest Argentina. *International Bear News* 14(4):30-32.
- Diefenbach, D. R., J. L. Laake, and G. L. Alt. 2004. Spatio-temporal and demographic variation in the harvest of black bears: implications for population estimation. *Journal of Wildlife Management* 68:947-959.
- Evans, T. J., A. Fischbach, S. Schliebe, B. Manly, S. Kalxdorff, and G. York. 2003. Polar bear aerial survey in the Eastern Chukchi Sea: a pilot study. *Arctic* 56:359-366.
- Fuller, D. O., T. C. Jessup, and A. Salim. 2004. Loss of forest cover in Kalimantan, Indonesia, since the 1997-1998 El Niño. *Conservation Biology* 18:249-254.
- Garshelis, D. L. 1991. Monitoring effects of harvest on black bear populations in North America: a review and evaluation of techniques. *Eastern Workshop on Black Bear Research and Management* 10:120-144.
- Garshelis, D. L. 2002. Misconceptions, ironies, and uncertainties regarding trends in bear populations. *Ursus* 13:321-334.
- Garshelis, D. L., M. L. Gibeau, and S. Herrero. 2005. Grizzly bear demographics in and around Banff National Park and Kananaskis Country, Alberta. *Journal of Wildlife Management* 69:277-297.
- Garshelis, D. L., and H. Hristienko. 2006. State and provincial estimates of American black bear numbers versus assessments of population trend. *Ursus* 17:1-7.
- Garshelis, D. L., A. R. Joshi, and J. L. D. Smith. 1999a. Estimating density and relative abundance of sloth bears. *Ursus* 11:87-98.
- Garshelis, D. L., A. R. Joshi, J. L. D. Smith, and C. G. Rice. 1999b. Sloth bear conservation action plan. *In* Bears: status survey and conservation action plan, C. Servheen, S. Herrero, and B. Peyton, (eds.). IUCN/SSC Bear and Polar Bear Specialist Groups, Gland, Switzerland and Cambridge, U.K.

- Garshelis, D. L., and K. V. Noyce. 2006. Discerning biases in a large scale mark-recapture population estimate for black bears. *Journal of Wildlife Management* 70:1634-1643.
- Garshelis, D. L., and R. Steinmetz. 2005. Issues and conservation priorities from the Asiatic black bear expert team. *International Bear News* 14(2):9-12.
- Garshelis, D. L., and L. G. Visser. 1997. Enumerating megapopulations of wild bears with an ingested biomarker. *Journal of Wildlife Management* 61:466-480.
- Gong, J., and R. Harris. 2006. The status of bears in China. *In Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, Japan, p. 96-101.
- Gordienko, V. N., T. A. Gordienko, and V. E. Kirichenko. 2006. A summary of the aerial census of the brown bear of Kamchatka. *In Kamchatka brown bear: ecology, conservation, and sustainable use*, I. V. Seryodkin, J. Paczkowski, V. P. Shuntov, and G. R. Raygorodetsky (eds.). Wildlife Conservation Society, Vladivostok, Russia (in Russian), p. 56-64.
- Gurung, M. K. 2004. Brown bear observation in Damodar Kunda Valley, Mustang District, Nepal. *International Bear News* 13(4):12-14.
- Japan Bear Network (compiler). 2006. *Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, Japan.
- Lorenzini, R., M. Posillico, S. Lovari, and A. Petrella. 2004. Non-invasive genotyping of the endangered Apennine brown bear: a case not to let one's hair down. *Animal Conservation* 7:199-209.
- Loucks, C. J., Z. Lü, E. Dinerstein, H. Wang, D. M. Olson, C. Zhu, and D. Wang. 2001. Giant pandas in a changing landscape. *Science* 294:1465.
- Mace, R. D., S. C. Minta, T. L. Manley, and K. E. Aune. 1994. Estimating grizzly bear population size using camera resightings. *Wildlife Society Bulletin* 22:74-83.
- Mano, T. 2006. The status of brown bears in Japan. *In Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, Japan, p. 111-121.
- Mattson, D. J., and T. Merrill. 2002. Extirpations of grizzly bears in the contiguous United States, 1850-2000. *Conservation Biology* 16:1123-1136.
- McLellan, B. N. 1998. Maintaining viability of brown bears along the southern fringe of their distribution. *Ursus* 10:607-611.
- Meijaard, E. 1999. Human-imposed threats to sun bears in Borneo. *Ursus*:185-192.
- Meijaard, E. 2001. Conservation and trade of sun bears in Kalimantan. *In Proceedings of the third international symposium on the trade in bear parts*, D. F. Williamson and M. J. Phipps (eds). TRAFFIC East Asia, Hong Kong, p. 26-37.
- Miller, S. D. 1990a. Population management of bears in North America. *International Conference on Bear Research and Management* 8:357-373.

- Miller, S. D. 1990b. Detection of differences in brown bear density and population composition caused by hunting. *International Conference on Bear Research and Management* 8:393-404.
- Miller, S. D., G. C. White, R. A. Sellers, H. V. Reynolds, J. W. Schoen, K. Titus, V. G. Barnes, Jr., R. B. Smith, R. R. Nelson, W. Ballard, B., and C. C. Schwartz. 1997. Brown and black bear density estimation in Alaska using radiotelemetry and replicated mark-resight techniques. *Wildlife Monographs* 133.
- Oi, T., and K. Yamazaki. 2006. The status of Asiatic black bears in Japan. *In Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, Japan, p. 122-133.
- Peyton, B., E. Yerena, D. I. Rumiz, J. Jorgenson, and J. Orejuela. 1998. Status of wild Andean bears and policies for their management. *Ursus* 10:87-100.
- Ratnayake, S., S. Wijeyamohan, and C. Santiapillai. 2006. The status of sloth bears in Sri Lanka. *In Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, Japan, p. 35-40.
- Ridings, C. 2006. Green bear in the desert. *International Bear News* 15(2):12-13.
- Rios-Uzeda, B., H. Gómez, and R. B. Wallace. 2005. Habitat preferences of the Andean bear (*Tremarctos ornatus*) in the Bolivian Andes. *Journal of Zoology* 268:271-278.
- Rodríguez, D., F. Cuesta, I. Goldstein, L. G. Naranjo, O. L. Hernández, and A. E. Bracho. 2003. Ecoregional strategy for the conservation of the spectacled bear (*Tremarctos ornatus*) in the northern Andes. World Wildlife Fund, Fundación Wui, EcoCiencia, Wildlife Conservation Society (available at: http://www.wwf.org.co/colombia/biblioteca/publicaciones/3_2_2.pdf).
- Sathyakumar, S. 2006a. The status of brown bears in India. *In Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, p. 7-11.
- Sathyakumar, S. 2006b. The status of Asiatic black bears in India. *In Understanding Asian bears to secure their future*. Japan Bear Network, Ibaraki, Japan, p. 12-19.
- Servheen, C. 1999. The trade in bears and bear parts. *In Bears. Status survey and conservation action plan*, C. Servheen, S. Herrero, and B. Peyton (eds.). IUCN/SSC Bear and Polar Bear Specialist Groups, Gland, Switzerland and Cambridge, U.K., p. 33-38.
- Servheen, C., S. Herrero, and B. Peyton (compilers). 1999. Bears. Status survey and conservation action plan. IUCN/SSC Bear and Polar Bear Specialist Groups, Gland, Switzerland and Cambridge, U.K.
- Sheikh, K. M. 2006. The status and conservation of bears in Pakistan. *In Understanding Asian bears to secure their future*, Ibaraki, Japan, p. 1-6.
- Sutherland, W. J. 2001. Sustainable exploitation: a review of principles and methods. *Wildlife Biology* 7:131-140.
- Swenson, J. E., N. Gerstl, B. Dahle, and A. Zedrosser. 2000. Action plan for the conservation of the brown bear (*Ursus arctos*) in Europe. Council of Europe, Strasbourg, France.

- Swenson, J. E., P. Wabakken, F. Sandegren, A. Bjärvall, R. Franzén, and A. Söderberg. 1995. The near extinction and recovery of brown bears in Scandinavia in relation to the bear management policies of Norway and Sweden. *Wildlife Biology* 1:11-25.
- Taberlet, P., J. J. Camarra, S. Griffin, E. Uhres, O. Hanotte, L. P. Waits, C. Dubois-Paganon, T. Burke, and J. Bouvet. 1997. Noninvasive genetic tracking of the endangered Pyrenean brown bear population. *Molecular Ecology* 6:869-876.
- Talbot, L. M. 1960. A look at threatened species. A report on some animals of the Middle East and Southern Asia which are threatened with extermination. IUCN, Gland, Switzerland.
- Taylor, M. K., S. Akeeagok, D. Andriashek, W. Barbour, E. W. Born, W. Calvert, H. D. Cluff, S. Ferguson, J. L. Laake, A. Rosing-Asvid, I. Stirling, and F. Messier. 2001. Delineating Canadian and Greenland polar bear (*Ursus maritimus*) populations by cluster analysis of movements. *Canadian Journal of Zoology* 79:690-709.
- Taylor, M. K., J. L. Laake, H. D. Cluff, M. Ramsay, and F. Messier. 2002. Managing the risk from hunting for the Viscount Melville Sound polar bear population. *Ursus* 13:185-202.
- Taylor, M. K., J. Laake, P. D. McLoughlin, H. D. Cluff, and F. Messier. 2006. Demographic parameters and harvest-explicit population viability analysis for polar bears in M'Clintock Channel, Nunavut, Canada. *Journal of Wildlife Management* 70:1667-1673.
- Vaisfeld, M. A., and I. E. Chestin, editors. 1993. Bears: Brown bear, polar bear, Asian black bear. Distribution, ecology, use and protection. Nauka, Moscow, Russia (in Russian with English summaries).
- Williamson, D. F. 2002. In the black. Status, management, and trade of the American black bear (*Ursus americanus*) in North America. TRAFFIC North America, World Wildlife Fund, Washington, D.C.
- Wong, S. T. 2006. The status of Malayan sun bears in Malaysia. *In* Understanding Asian bears to secure their future. Japan Bear Network, Ibaraki, Japan, p. 66-72.
- Yoganand, K., C. G. Rice, A. J. T. Johnsingh, and J. Seidensticker. 2006. Is the sloth bear in India secure? A preliminary report on distribution, threats and conservation requirements. *Journal of the Bombay Natural History Society*: in press.
- Zhan, X. J., M. Li, Z. J. Zhang, B. Goossens, Y. P. Chen, H. Wang, M. W. Bruford, and F. Wei. 2006. Molecular censusing doubles giant panda population estimate in a key nature reserve. *Current Biology* 16:R451-R452.

II. TRADE, ENFORCEMENT, AND ASIAN BEAR POPULATIONS

BEAR TRADE IN SOUTHEAST ASIA: THE STATUS OF PROTECTION FOR SOUTHEAST ASIA'S BEARS

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TRAFFIC Southeast Asia

Abstract: Of the eight bear species in the world, two are native to Southeast Asia: the Sun Bear *Helarctos malayanus* and the Asiatic Black Bear *Ursus thibetanus*. Although these species occur throughout most of Southeast Asia, there is very little knowledge of their status in the wild. It is known, however, that the populations of both species are in decline.

Illegal killing and trade are among the greatest threats to the conservation of bears in Southeast Asia. Inadequate legislation and insufficient enforcement allow the illegal trade to continue, often across international borders.

Countries belonging to the Association of Southeast Asian Nations (ASEAN) have committed to stopping the commercial international trade in live Sun Bears and Asiatic Black Bears, and their parts and derivatives, by becoming Party to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). In some countries, national legislation is also in place to protect bears from over-exploitation. Despite these legislative measures, illegal trade in bears, and their parts and derivatives, continues to be widespread and is often carried out openly.

ASEAN countries have recently come together to form the ASEAN Wildlife Enforcement Network (ASEAN-WEN). However, until national legislation and levels of enforcement are raised, the full potential of CITES and the ASEAN-WEN cannot be realized.

INTRODUCTION

Two species of bears occur in Southeast Asia¹, the Sun Bear *Helarctos malayanus* and the Asiatic Black Bear *Ursus thibetanus*, found in all countries with the exception of the Philippines, Singapore and Timor Leste. Of these range States, only Malaysia and Indonesia do not have Asiatic Black Bears. There is very little information on bear populations in Southeast Asia, but it is known that the populations of both species are in serious decline in the region.

The two greatest global threats to the conservation of bears in the wild are habitat loss and killing by humans for a variety of reasons (Servheen, 2001). Among the reasons for killing bears, especially in Southeast Asia, the primary motivation is the use of body parts as ingredients in traditional medicines, with the gallbladder being particularly targeted. Of the world's eight bear species, only the Giant Panda is not specifically hunted for its gallbladder (Holden, 1998).

BEAR-RELATED LEGISLATION IN SOUTHEAST ASIA

All range States in Southeast Asia have legislation protecting bears, and as a general rule, bears are totally protected in all of these countries. There are a few exceptions, such as in Sarawak (East Malaysia) where Sun Bears are classified as Protected but can be hunted under license, and Myanmar, where Asiatic Black Bears are classified as Protected but can be hunted under a permit. Sun Bears, however, are totally protected in Myanmar.

¹ The Southeast Asian region includes 11 countries: Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor Leste and Vietnam.

Ten countries in the region belong to the Association of Southeast Asian Nations (ASEAN): Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, The Philippines, Singapore, Thailand, and Vietnam. All of these nations have committed to stopping the international trade in Sun Bears and Asiatic Black Bears—and in their parts and derivatives—through accession to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Both species of bears native to Southeast Asia are listed on Appendix I of CITES, and therefore international commercial trade is prohibited. Although international trade of these two species is prohibited, domestic legislation protecting bears within Southeast Asian countries varies. Gaps in the legislative coverage of many countries continue to undermine the efforts of CITES to protect these species. As Parties to CITES, these countries are obligated to adequately implement and enforce the requirements of the Convention through national legislation. However, many countries are not fulfilling this obligation and do not as yet have legislation that sufficiently allows for CITES to be effective. All Parties to CITES have been categorized under the CITES National Legislation Project, based on the ability of their national legislation to implement and enforce CITES. The criteria for categorization are as follows:

Category 1 – legislation that is believed to generally meet the requirements for the implementation of CITES.

Category 2 – legislation that is believed to generally not meet all requirements for the implementation of CITES.

Category 3 – legislation that is believed to generally not meet the requirements for the implementation of CITES.

As Table 1 shows, only four of the 10 ASEAN countries are rated as Category 1: Indonesia, Singapore, Thailand and Vietnam.

Table 1. CITES National Legislation Project Ratings for ASEAN Countries

Country	Joined CITES	CITES National Legislation Category
Brunei	1990	3
Cambodia	1997	3
Indonesia	1979	1
Lao PDR	2004	3
Malaysia	1978	2
Myanmar	1997	3
The Philippines	1981	2
Singapore	1987	1
Thailand	1983	1
Vietnam	1994	1

Source: National Laws for Implementation of the Convention – CITES Standing Committee SC53 Doc 31 [http://www.cites.org/eng/com/SC/53/E53-31.pdf], July 2005

* Note that Cambodia passed CITES-enabling legislation on 5/5/2006, but has not yet submitted a version in the three working languages of the Convention (English, French or Spanish) to the CITES Secretariat.

BEAR TRADE IN SOUTHEAST ASIA

Live bears and their parts and derivatives continue to be sold openly in markets, traditional medicine shops, privately through dealers, from bear "farms", and through other sources. Open trade in many countries where bears are totally protected highlights the fact that enforcement and/or legislation to control the trade is inadequate.

Bear parts frequently observed in trade include gallbladders, paws, claws, canine teeth, skulls and, to a lesser extent, skins. Some parts, such as gallbladders (and extracted bile) and paws are traded for their purported medicinal values, while other parts, such as skulls and canine teeth, are traded for ornamental value. In many cases, the trade is carried out across international borders, violating CITES as well as national legislation.

Responding to large-scale illegal trade of wildlife in the region, and in order to better combat illegal international wildlife trade, the ASEAN countries formed the ASEAN Wildlife Enforcement Network (ASEAN-WEN) in December 2005 to facilitate better intelligence-sharing between national counterparts, increased collaboration, and cross-border cooperation. Until national legislation is raised to the required standards under CITES, however, the full potential of ASEAN-WEN to combat illegal trade in species such as bears cannot be realized.

Recent seizures in Peninsular Malaysia, for example, have largely been of bear parts intended to be sold locally in restaurants. There have not been any seizures of packaged medicines claiming to contain bear parts at the points of entry or exit (airports, ports or land-crossings). The packaged products offered for sale in pharmacies and other types of medicinal shops in Peninsular Malaysia state on the packaging that they are manufactured in China. Because there is no legislation in Peninsular Malaysia prohibiting the trade of “derivatives” (in this case, medicines claiming to contain parts of bears), the trade continues. Medicines and other products claiming to contain bear bile are also readily available in many locations other throughout Southeast Asia, including Singapore and Vietnam (WSPA, 2002).

Illegal extraction of bear bile continues to be a problem in Southeast Asia, despite laws prohibiting it. Numerous bears continue to be held in bile extraction farms in Vietnam, for example, oblivious to national legislation outlawing them. According to Nguyen Xuan Dang of the Institute of Ecology and Biological Resources in Vietnam, there are as many as 4000 bears (mostly Asiatic Black Bears) held in these farms for bile extraction (Nguyen Xuan Dang 2007 – these Proceedings). While many of these bears have been taken from the wild in Vietnam, it is suspected that many originated in neighboring countries (Nguyen Xuan Dang 2007 – these Proceedings).

Trade in bear parts also continues to be widespread. In early 2006, TRAFFIC surveyed four wildlife markets in Myanmar, three of which are situated along international borders (two on the Myanmar-Thailand border and one on the Myanmar-China border).

- Tachilek (Myanmar–Thailand border)
- Three Pagoda Pass (Myanmar–Thailand border)
- Mong La (Myanmar–China border)
- Golden Rock (inside Myanmar)

Bear parts were observed for sale openly in all of these markets. Of those parts that could be identified to a species level, only two paws were of the Sun Bear, while the remaining parts were from the Asiatic Black Bear. During this survey, parts from at least 150 bears were observed in these four markets (Table 2). Parts observed were to be sold for medicinal and ornamental purposes. According to traders interviewed, the majority of the buyers were not from Myanmar, but were instead mostly from Thailand and China.

Table 2. Bear Parts Observed in Myanmar Markets, 2006*

Market	Carcass	Skull	Canine	Paws	Claws	Whole skin	Skin piece	Min. # bears
Tachilek	0 (0)**	14 (14)	446 (112)	9 (3)	265 (27)	0 (0)	21 (1)	127
Golden Rock	0 (0)	7 (7)	0 (0)	22 (6)	5 (1)	0 (0)	0 (0)	7
Mong La	1 (1)	12 (12)	0 (0)	9 (3)	19 (2)	0 (0)	0 (0)	13
Three Pagoda Pass	0 (0)	3 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	3

* Source: Shepherd and Nijman, in press.

** Figures in parentheses denote the minimum number of bears needed to produce the number of parts indicated.

Buying these products is a violation of Myanmar's laws. Taking them across international borders is a violation of both national legislation and CITES. However, as was observed during this survey, the trade is carried out openly on the borders, and buyers move these items from one country to the next with few or no problems. The very fact that these markets operate in such an open fashion signifies a lack of enforcement attention.

Traders in Myanmar stated that it was becoming increasingly difficult to obtain bears in the wilderness near the markets, and that they therefore have to travel further to hunt bears. They stated that this situation was attributable to over-hunting and habitat loss.

CONCLUSION

As these observations in Myanmar attest, trade in bear parts remains prevalent in Southeast Asia. While in some countries the trade is carried out in less open fashion, it persists. Open markets, restaurants, traditional medicine shops, and live animal markets are all examples of venues for trade in Southeast Asian bears these species, regardless of legislation in place to protect these species.

For conservation efforts in Southeast Asia to be effective and the decline in bear populations to be stopped and eventually reversed, existing regulations must be enforced. Countries that have inadequate laws to enforce CITES, and to therefore effectively prevent the illegal international trade in bears and their parts and derivatives, must not only amend legislation. They must also dedicate additional resources to effectively enforce such laws to prevent the illegal trade in both live bears and in their parts and derivatives.

REFERENCES

- Holden, J. 1998. By hook or by crook: A reference manual on illegal wildlife trade and prosecutions in the United Kingdom. The Royal Society for the Protection of Birds. UK.
- Servheen, C. 2001. The status of the bears of the world with emphasis on Asia. *In* Proceedings of the Third International Symposium on the Trade in Bear Parts, 26-28 October, 1999, Seoul, Republic of Korea, D.F. Williamson and M. Phipps, M. (eds.). TRAFFIC East Asia.
- Shepherd, C. R. and Nijman, V. (in press). The trade in bear parts from Myanmar: An illustration of the ineffectiveness of enforcement of international wildlife trade regulations. Biodiversity and Conservation.
- WSPA. 2002. The bear bile business. World Society for Protection of Animals, UK.

MANAGEMENT OF BEARS AND UTILIZATION OF BEAR BILE IN JAPAN

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Abstract: Two bear species occur in Japan: the Brown Bear *Ursus arctos* and the Asiatic Black Bear *Ursus thibetanus*. Although some isolated populations are endangered, the national population is considered to be stable. They are designated as game species under the *Wildlife Protection and Hunting Law*, and can be taken as game or under a nuisance control scheme to reduce crop damage and human casualties. In recent years, the total number of bears taken annually is around 300 for Brown Bears and 1800 for Asiatic Black Bears. Bear skins can be traded under the *Law for Conservation of Endangered Species of Wild Fauna and Flora*, but there is no regulation for trade in other parts including gallbladders because of the difficulty of identifying species.

Japan has a long tradition of medicinal use of bear bile, which is consumed in processed and unprocessed forms. In general, bear galls originating in Japan are not utilized by medicinal companies because of the high price and the lack of a legal supply system. These galls are mostly used personally and sometimes appear in the market in unprocessed forms. To produce medicines Japan imported a large amount of bear bile for many years. However, since 1992, when all bear species were listed in the CITES appendices, such imports have been reduced dramatically. Currently medicinal companies seem to be using the stock they built up before 1992, but changes in the quantity of the stock possessed by the companies cannot be explained considering the annual consumption level. The additional amount may be provided from unrecorded stock, domestically hunted animals, or illegal sources, but the situation is unclear. In any case the stock is decreasing and will be used up in the future, since there is and will be very little legal supply from other countries. The medical sector should consider using bear galls produced in Japan if they wish to continue the usage. A new domestic control scheme for trade in bear bile may have to be introduced without delay for effective conservation of bears and their proper utilization as a valuable natural resource.

BIOLOGICAL STATUS AND MANAGEMENT OF BEARS IN JAPAN

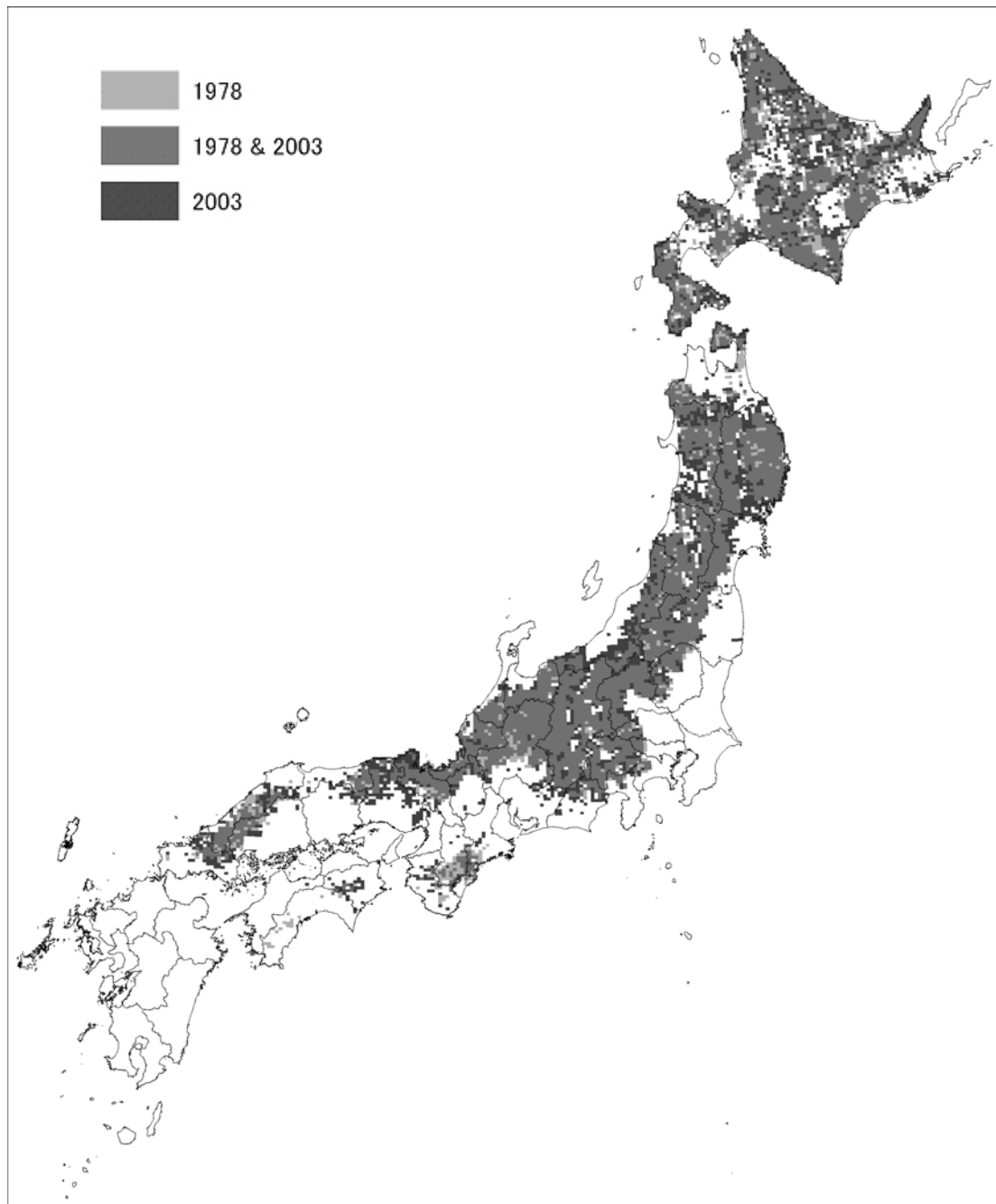
Two bear species inhabit Japan: the Brown Bear *Ursus arctos* on Hokkaido Island (78 000km²), and the Asiatic Black Bear *U. thibetanus* on the islands of Honshu (227 900km²), Shikoku (36 700km²), and Kyushu (18 300km²). Internationally, Japan's Brown Bear population is listed on CITES Appendix II, and as a whole species the Asiatic Black Bear is listed on CITES Appendix I, and on the IUCN Red List as Vulnerable.

On the Japanese Red List, compiled by the Ministry of the Environment (2002), the Brown Bear population of the west side of Hokkaido's Ishikari Depression is classified as an Endangered Local Population (ELP). In Honshu, isolated local populations of the Asiatic Black Bear on the Shimokita and Kii peninsulas, and in the eastern and western Chugoku District are classified as ELPs, with less than a few hundred bears in each. The population on Shikoku Island is estimated at less than 20 bears, and that on Kyushu Island is probably extinct. These two populations are also classified as ELPs.

However, the national populations of both species as a whole are considered to be stable. For example, judging from changes in bear distributions surveyed in the Japanese fiscal years (FY) of 1978 and 2003² (**Figure 1**), the data from 2003 show that Brown Bears occur in more than 50% of Hokkaido, and Black Bears occur in more than 40% of the total area of Honshu and Shikoku (Ministry of the Environment 2004). The distribution of both species has expanded from 1978 to 2003, although they have disappeared (or are simply unrecorded) from some areas (**Figure 2**).

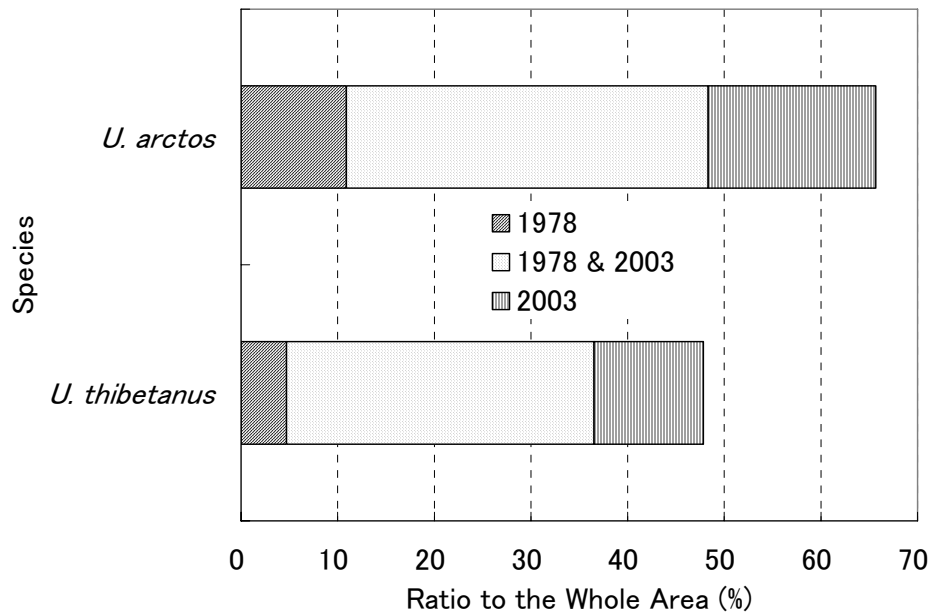
² Japanese fiscal years run from April 1 to March 31 of the next year.

**Figure 1. Distribution of the Two Bear Species in Japan, Showing the Changes
Between 1978 and 2003***



* **Key:** 1978 = the area where occurrence was confirmed in 1978 but not in 2003; 1978 & 2003 = occurrence confirmed both in 1978 and 2003; 2003 = occurrence not confirmed in 1978 but observed in 2003.

Figure 2. Ratio of the Distribution Area to the Whole Region



Key: “1978”, “1978 & 2003” and “2003” mean the ratio of the three kinds of distribution area shown in Figure 1.

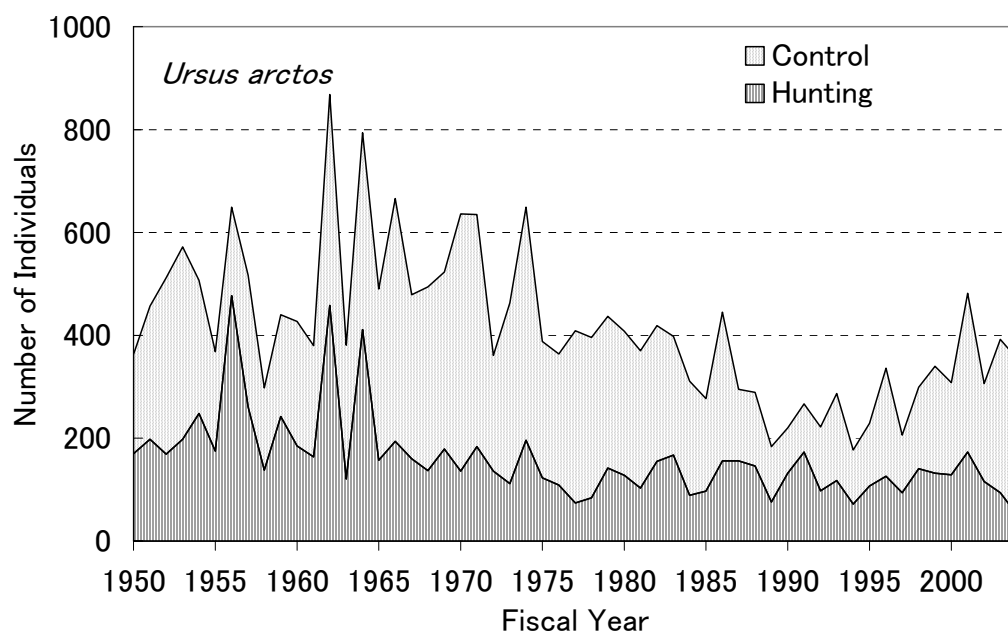
Japan’s total Brown Bear population is estimated roughly at a few thousand (Mano, 2006), and the nation’s Black Bear population at around ten thousand (Oi and Yamazaki, 2006). There are no data suggesting a decrease of the population of either species. Although these estimates are not very reliable, the biological status of the two bear species in Japan does not meet the criteria for designation as Threatened on the IUCN Red List, or for listing on CITES Appendix I.

Japan’s two bear species are designated as game under the country’s *Wildlife Protection and Hunting Law*. They may be taken during the hunting period (for Asiatic Black Bears from November 15 to February 15, and for Brown Bears from October 1 to January 31), except for Black Bears in western Honshu, Shikoku and Kyushu (20 Prefectures) where the populations are threatened. Bears may also be taken throughout the year under a nuisance control scheme to reduce crop damage and human casualties.

To maintain bear populations, many Prefectures have established and implemented the Specified Wildlife Conservation and Control Plan according to the above law (as amended in 1999), or similar plans. However, these plans are based on inadequate data and could be improved further, for example by setting scientifically sound capture limits and a habitat management scheme.

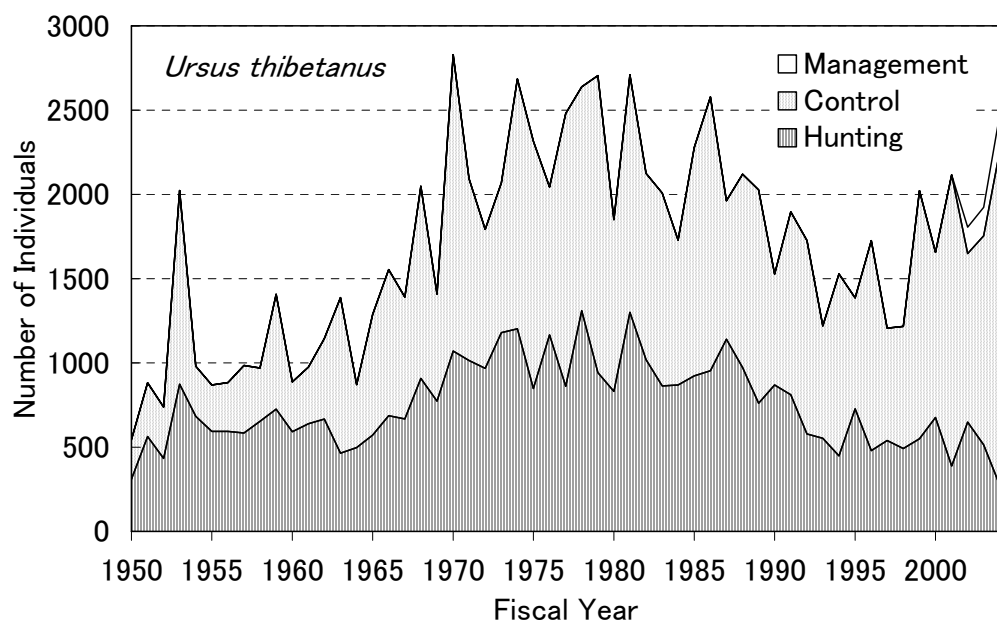
Figures 3 and 4 show changes in the number of bears killed annually. The average number of Brown Bears taken annually from FY1995 to FY2004 was 325, while the average number of Black Bears taken during the same period was 1753 (Hunting Statistics, Ministry of the Environment). These figures mean that about 40 kg bear bile could be obtained from the roughly 2000 animals captured each year, if we assume that the average dry weight of the gallbladder of each bear taken is about 20 g in dry weight.

Figure 3. Number of *U. arctos* Taken Annually*



* "Hunting" indicates the number of bears taken as game during the hunting season, and "Control" indicates those killed as nuisance animals.

Figure 4. Number of *U. thibetanus* Taken Annually*



* "Hunting" and "Control" are the same as in Figure 3. "Management" indicates the number of animals captured according to the Specified Wildlife Conservation and Management Plan.

Under Japan's *Law for Conservation of Endangered Species of Wild Fauna and Flora*, Brown and Asiatic Black Bears are designated as International Endangered Species (IES), because the species as a whole or some populations of the species are listed in CITES Appendix I. Under the law, domestic trade in IES is strictly controlled. Regarding bears, fur and skin of animals taken through legal hunting within Japan can be traded domestically by attaching a tag issued by the Ministry of the Environment, because the national populations are not endangered.

There is, however, no regulation for domestic trade in other parts—including gallbladders and meat—because of the difficulty in identifying species. Consequently, there is very little information on how the galls from animals captured in Japan are treated. There is even a possibility that the galls and other parts originating in Japan are illegally exported against CITES regulations.

MEDICINAL USE OF BEAR BILE IN JAPAN

Japan has a long tradition of medicinal use of bear bile, and it is consumed both as processed medicine and in unprocessed form (Ishihara, 2006). According to a questionnaire survey on the use of traditional medicine by the Japan Wildlife Research Center (1998), more than 10% of Japanese people have purchased or acquired bear bile products.

In 1994, 1997 and 1998, TRAFFIC East Asia-Japan studied the availability of bear bile and its derivatives in the Japanese market and found that about one-third of shops specializing in traditional medicine sold the products (Ishihara, 2005). However, the information on the origin of the material was very scarce.

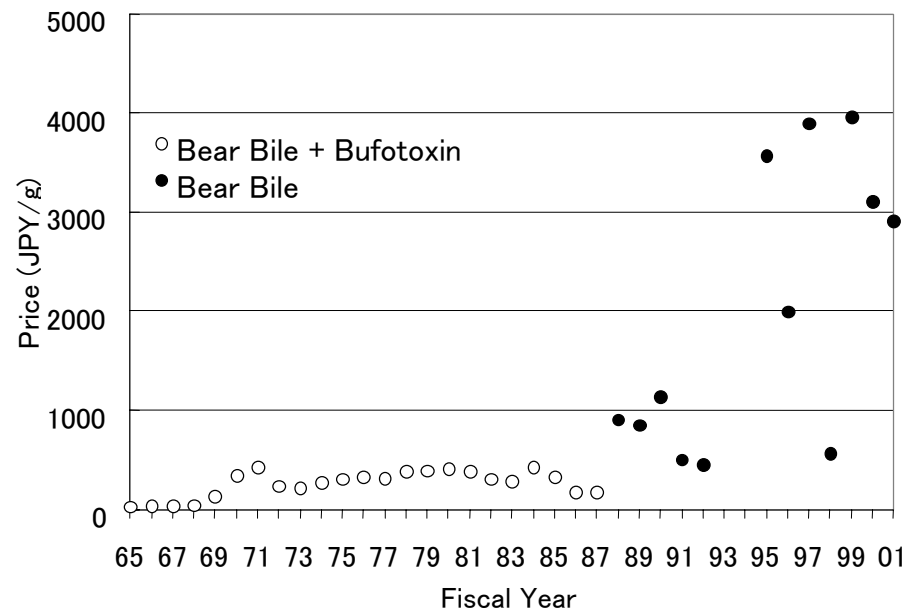
As directed by the Ministry of the Environment, in FY2001 and FY2002 the Japan Wildlife Research Center conducted a survey on the trade in bear parts and products (Japan Wildlife Research Center, 2003). As part of the survey a total of 79 hunters were interviewed in two areas of Hokkaido and in seven areas in northern Honshu where bear hunting is relatively active. Regarding bear galls, most hunters said that it has recently become difficult to find a buyer for the galls. They also said that gallbladders of good size and quality were rare from bears taken because of nuisance control in non-hunting season (from late spring to early autumn), and that such galls were not marketable. (However, according to the Federation of Pharmaceutical Manufacturers' Association of Japan (FPMJA), even such galls are usable as a material to produce medicine.) It seems that most bear galls originating in Japan are used personally or sometimes appear at the retail level in unprocessed form, but the actual situation is unclear. (It is against the *Pharmaceutical Affairs Law* to trade in bear gall as a medicine for persons or organizations unauthorized by the Ministry of Health and Labor.) FPMJA stated that, in general, they had not utilized bear galls originating in Japan because of the high price of about JPY10 000/g compared to the price of imported ones (**Figure 5**) and lack of a system to supply legally obtained galls (Japan Wildlife Research Center, 2003).

According to trade statistics compiled by the Ministry of Finance, Japan imported large amounts of bear bile in the past—nearly 1500 kg in some years—mainly from China. This continued even after 1980 when Japan joined CITES (**Figure 6**). However, after 1992, when all bear species were listed on the CITES Appendices, the annual import of bear bile declined dramatically to less than 10 kg at most, and only from Canada, Russia and Hong Kong.

The amount of bear bile imported is obscured by the fact that until 1987 the figures indicated the weight of bear bile and bufotoxin (secretion of toads) together. These two items had not been classified in the trade records until that time. Therefore, the exact amount of bear bile imported during this period is not certain. As **Figure 5** shows, the price of bear bile apparently soared after 1992 when all bear species were listed in the CITES Appendices. At present, medicinal companies

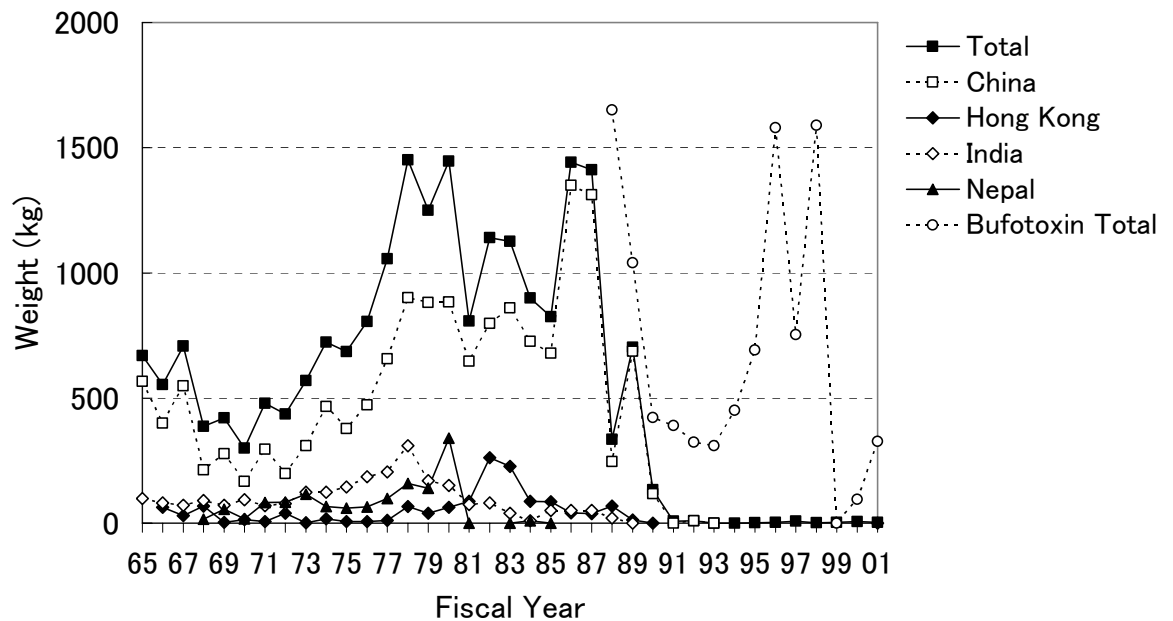
seem to be using the stock built up before 1992, in addition to a small amount of legally imported bear gall.

Figure 5. Average Price of Bear Bile Imported by Japan*



* Price until 1987 is calculated by including bufotoxin.

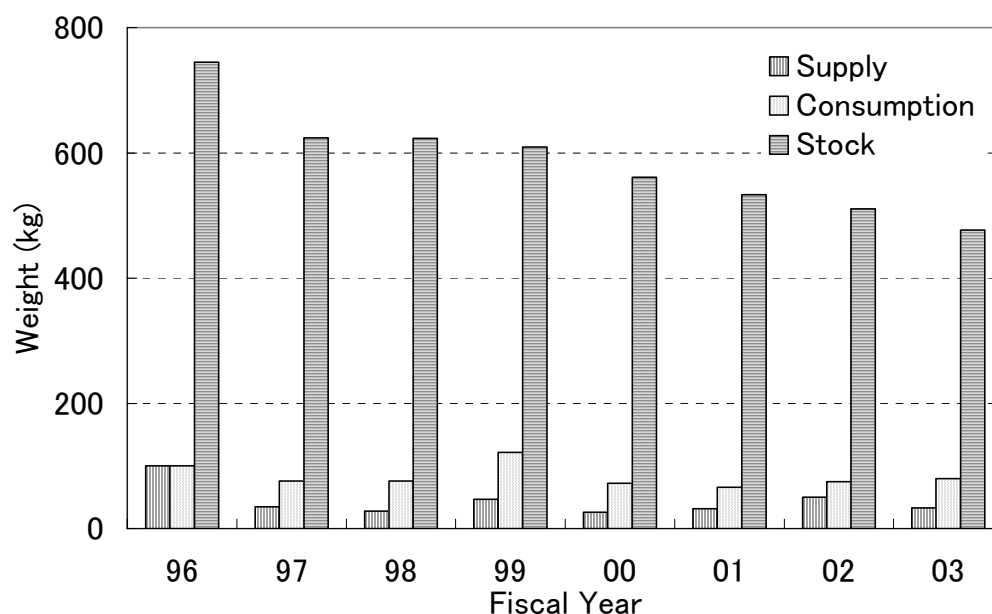
Figure 6. Weight of Bear Bile Imported by Japan*



* Weight until 1987 includes that of bufotoxin.

The Ministry of Health, Labor and Welfare compiled records on stock and consumption for medicinal companies that used bear bile to produce medicine in the period 1996 to 2003. According to the published records, such companies consumed about 80 kg of bear bile annually, but obtained only some 40 kg of new supply each year (**Figure 7**). As a result, the stock size is decreasing, and may be used up within ten years.

Figure 7. Bear Bile Stock of, Supply to, and Consumption by Medicinal Companies in Japan



Changes in the stock size possessed by Japanese companies thus cannot be explained if we assume very little legal import as the only supply source. We have to consider where the average annual supply of 40 kg bear bile comes from. There are three possible sources:

1. *Unrecorded stock.* The above-mentioned records were obtained only from those companies currently producing medicine, and do not involve all companies which possess bear bile stock. There may be unrecorded stock.

2. *Domestically hunted animals.* As previously mentioned, bears taken in Japan could supply about 40 kg of galls annually, although it is unlikely that a significant amount of bear bile is supplied from these animals because of the lack of an established supply system.

3. *Illegal sources.* There may be illegal sources such as imports that violate CITES regulations, as well as bears hunted illegally in Japan. Seizures of bear bile products by Japanese customs have been reported (Ishihara, 2005). Between 1995 and 2004, there were 647 cases of illegal imports, with 14 537 items seized, mostly products from China (including Hong Kong). However, these items were mainly processed medicines containing bear bile rather than unprocessed bear gall. Within Japan, cases of illegal hunting of bears exist (Ishihara, 2005), but it is unlikely that such activity could produce a significant amount of bear bile.

At present we have very little information about these three sources, and also on the trade in bear bile at the retail level. We therefore need further investigation.

CONCLUSIONS

It seems that in Japan over-harvesting of bears for gallbladders does not occur and is not a factor threatening the two bear species, although many aspects of management should be improved. For example, habitat destruction is one of the principal factors threatening Japanese bear populations, especially in western Honshu and Shikoku, and the level of take is too high in some areas such as in western Chugoku District and on the Shimokita Peninsula (Ministry of the Environment, 2003).

However, many points regarding bear bile consumption by the Japanese market and its impact on bear populations remain unclear, not only in Japan but also as they pertain to other countries. We should examine further the current situation of bear bile utilization in Japan. To do so, we need a system to gather necessary and precise information.

The medical sector should consider using bear galls from animals legally taken in Japan if they wish to continue to use bear bile, because there is and will be very little legal supply from overseas countries in the foreseeable future.

A new domestic scheme to control and monitor the trade in bear galls originating in Japan may have to be introduced without delay for effective conservation of bears and the proper utilization of bear bile as a valuable natural resource. In my opinion, such a system may not necessarily be an official one established by law. However, it should be operated in close cooperation with central and local governments if it is to be effective enough to control the trade and provide the necessary information. Fortunately, Japan's two bear species as a whole are not threatened by extinction at present, and we can practice conscientious trial and error to find an appropriate scheme. I hope such a scheme would provide additional funds and incentives for communities living with bears to promote bear conservation in Japan. It is also very important to inform the public accurately about the biological status of bears, the relationship between conservation and utilization of bears, and CITES regulations.

ACKNOWLEDGEMENTS

I thank the Ministry of the Environment for allowing me to use the distribution data, and Eri Nakajima of the Japan Wildlife Research Center for preparing **Figure 1**.

REFERENCES

- Ishihara, A. 2005. Bear gall trade in Japan. TRAFFIC East Asia-Japan, 98 p. (in Japanese and English).
- Ishihara, A. 2006. Bear gall bladder use and trade in Japan. *In: Understanding Asian bears to secure their future*, Japan Bear Network (compiler), pp. 135-137.
- Japan Wildlife Research Center. 1998. FY1997 Survey report on the use of traditional medicine containing endangered species. Japan Wildlife Research Center (in Japanese).
- Japan Wildlife Research Center. 2003. FY2002 Survey Report on the use and trade in bear parts and products. Japan Wildlife Research Center (in Japanese).
- Mano, T. (ed.). 2006. The status of brown bears in Japan. *In: Understanding Asian bears to secure their future*, Japan Bear Network (Compiler), pp. 111-121.
- Ministry of the Environment. 2002. Threatened wildlife of Japan – Red Data Book, 2nd ed., Vol. 1, Mammalia. Japan Wildlife Research Center. (in Japanese with English summary).
- Ministry of the Environment. 2004. Report of the distribution survey of Japanese animals (mammals). Biodiversity Center of Japan. (in Japanese).
- Oi, T., and K. Yamazaki (eds.). 2006. The status of Asiatic black bears in Japan. *In: Understanding Asian bears to secure their future*, Japan Bear Network (compiler), pp. 122-133.

BEAR FARMING AND BEAR CONSERVATION IN CHINA

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Abstract: This paper reflects the various efforts made towards bear conservation and management in China, in particular by the government. Establishing a legal framework and adjusting the implementation of laws and regulations regarding wildlife conservation are the major means adopted by China in past years to improve the status of bears in captivity and promote conservation of its wild bear population.

Through laws, regulations, and administrative policies promulgated between 1988 and 2006, the general legal framework to regulate and manage captive breeding and protection for China's wild bear population has been established. Specifically, the issuance of an import and export ban on bears, bear parts, or products (1992); an administrative regulation on guns and bullets to hunt game; and a temporary rule on management and techniques for bear farming (1993) have greatly affected the conservation of bears in China. After a series of adjustments based on provisions of the above mentioned laws, regulations and policies, the bear farming industry has been consolidated and the trade of bear products has been effectively controlled. Also, the population of wild bears, especially Asiatic Black Bears, has stabilized and started to increase. This trend is confirmed by data from field surveys and increasing reports of conflicts between humans and wildlife. The number of bear farms has dropped significantly from 480 to 68, mainly because of an industry restructuring under policies which raise the bar on the captive environment, bile collection techniques, and breeding capacity.

China has practiced bear farming and bear conservation for more than 20 years. The wild population has already clearly recovered to some extent, and the consequent challenge posed by this positive change is increasing conflict between local human populations and wild bears. How to make full use of the positive advantages of bear farming towards the conservation of wild bear populations, and how to balance local communities' development needs against the need to expand wild bear populations, are challenges that Chinese wildlife authorities need to answer. Trade management is also a critical sector that will lead to the success of sustainable use and conservation. Limiting the use of bear bile to medicine only is another step that will help bear farming and bear conservation co-exist.

Key words: bear farming, *in-situ* conservation, status and challenges

INTRODUCTION

Bears are widely distributed in China. Bear bile has been used in Traditional Chinese Medicine (TCM) for some 2000 years, and China is a country which still produces and consumes bear products with a serious attitude towards satisfying the needs of both human health and wild bear conservation. Therefore, the sustainable use of bears in China is a matter of great concern. With the increase of China's human population and dramatic developments in the TCM industry, the need for bear bile is also growing very fast. To prevent the loss of wild bears, and produce an easy and steady supply of bear bile, bear farming appeared in China in the early 1980s.

The Asiatic Black Bear *Ursus thibetanus*, Brown Bear *Ursus arctos*, and Malayan Sun Bear *Helarctos malayanus* all occur in China and are listed as nationally protected wildlife according to the Wild Animal Protection Law (WAPL), enacted in 1989. All three species are subject to Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) management in terms

of any proposal for international trade. During the past 20 years, the Chinese government has been constantly adjusting its regulatory system and policies regarding bear farming, to make the industry sustainable. This paper intends to illustrate the steps taken by the relevant Chinese authorities, and to explain the relationship between bear farming and *in-situ* bear conservation.

THE CONSERVATION, UTILIZATION AND MANAGEMENT OF ASIATIC BLACK BEARS IN CHINA

Although all three bear species extant in China can be kept in captivity and used for bile collection, the Asiatic Black Bear is the major species kept in bear farms, given its legal status as a Category II nationally protected species under the WAPL and various factors such as animal size, nature, and productivity. When bear farming activities first appeared in China, they attracted a lot of criticism and quite a number of questions about this potential conservation option. Questions have been raised constantly at all possible conservation-related occasions. It seems that the Chinese government did not pay enough attention to this eventuality. However, from the following facts and timetable, any body really concerned about serious bear conservation and the difficulty of wildlife management in China—a country with a vast area, gigantic human population, and an economy developing at very unbalanced levels—could tell that conservation, utilization and management represent a series of factors which will lead to successful wildlife survival only when they are thoroughly integrated.

Legislation

Beginning in 1980, constant changes regarding legislation on wildlife management and protection came into force at various levels. The topics of bear farming and conservation were therefore unavoidably considered under this evolving legislative process to make the public understand the developing events and official position, and the measures taken to address the problems and challenges involved. The timetable of laws, regulations, administrative policies, and relevant governmental instructions demonstrate the evolution in official decision-making systems towards bear conservation.

A summary of relevant laws, regulations, and policies, and their dates of enactment, include:

Laws and Regulations (4)

- *The Management Regulation on Protection of Wild Chinese Medicinal Resources* (enacted October 30, 1987);
- *The Wild Animal Protection Law* (March 1, 1989);
- *The Enforcement Regulation on Terrestrial Wild Animal Protection* (March 1, 1992);
- *The Management Regulation on Import and Export of Endangered Wild Animals and Plants* (September 1, 2006).

Administrative policies (6)

- *The Ordinance on Strictly Protecting the Precious and Rare Wild Animals by the State Council* (April 13, 1983);

- The Administrative Method on Nature Reserves and the Type of Forests and Wildlife (July 6, 1985);
- The Administrative Method on the License for the Raising and Breeding of Nationally Protected Animals (April 1, 1991);
- The Administrative Regulation on Hunting Guns and Ammunition (October 27, 1993)
- The Jurisdiction and Standard to Commit Criminal Case on the Terrestrial Wildlife, jointly by the Ministry of Forestry and the Ministry of Public Security (March 9, 1994);
- The Temporary Rule of Procedures for the Breeding and Utilization Techniques of Black Bears, by the Ministry of Forestry (1997).

Official Instruction Documents

To better address problems involved with bear farming activities, in accordance with relevant laws, regulations and above-mentioned administrative policies, the relevant departments of the Chinese government issued several official instruction documents to guide the development of bear farming and wild bear conservation. These efforts involved several different departments, including the Ministry of Foreign Trade and Economy, Customs Administration, Ministry of Justice, Ministry of Public Security, Ministry of Forestry (MOF), Ministry of Agriculture (MOA), General Administration for Commerce and Industry, and Ministry of Transportation. Details regarding management and law enforcement instructions are as follows:

Management instructions (7)

- The notice on strengthening management of the import and export of endangered wild poultry, venison and ornamental wild birds, by the MOF, MOA, Economic and Trade Ministry, General Customs Administration, National Commerce Quality Inspection Bureau, and China CITES Management Authority (December 24, 1990);
- The notice on further enhancing the management of trade of wildlife and their products in markets, by the General Administration for Commerce and Industry (May 7, 1991);
- The urgent notice on the requirement to register and strictly regulate bear farms (August 13, 1993);
- The notice on enhancing management of bear farming, by the MOF (1996);
- The notice on registering wildlife producing enterprises and starting a demonstration program to use the wildlife labeling system, by the State Forestry Administration (SFA) and General Administration for Commerce and Industry (GACI) (2003);
- The urgent notice to strictly control the activities of trade, utilization, raising and breeding of wildlife, by SFA & GACI (April 29, 2003);
- The notice on preventing illegal hunting and trade in terrestrial wildlife, by SFA, the Supreme People's Procuratorate (highest prosecutors office), Ministry of Public Security, Ministry of Railways, Ministry of Communications, Ministry of Information Industry, Ministry of Commerce Affairs, Ministry of Sanitation, Headquarter of Customs, National Business Administration General Bureau, National General Bureau of Supervision, Inspection and Quarantine of Quality, and General Bureau of China Civil Aviation (2003).

Law enforcement instructions (4)

- The announcement of a strict prohibition of purchasing and dealing in rare and precious wildlife and its products, by the Ministry of Commerce (March 17, 1986);
- The urgent announcement of a thorough prohibition of illegal hunting, trade and contraband of rare and precious wildlife by the national government (October 15, 1987);
- The announcement of strict enforcement against illegal hunting, or purchase and sale, of contraband wildlife, by the Supreme People's Court, Supreme People's Procuratorate, MOF, Ministry of Public Security, and National Business Administration General Bureau (December 15, 1990);
- The urgent announcement of enhanced wildlife protection and strict enforcement against criminal activities regarding wildlife by the national government (January 8, 1991).

In-situ Conservation and Wild Population Management

Recent years have seen several reports on population estimates for Chinese bears. According to surveys in northeast, northwest, southwest, and central and south China, Ma (1998) estimated that there were 18 600 Black Bears, 6500 Brown Bears and 145 Sun Bears (Zhang and Xu, 2003). A more recent estimate showed that there were 27 500 Black Bears (Jia and Yan, 2003). This information clearly shows the wild population's restoration, although the trend cannot be scientifically demonstrated for a longer time period because of the lack of baseline information for the 1950's and before. From the perspective of population management, an increase in encounters with bears as reported in the media could be proof to support the 2003 analysis of population trends, echoing the numbers estimated by Chinese scientists.

Ecological restoration has been a major concern for the Chinese government in past years. A series of national projects regarding habitat conservation and development of nature reserves have been conducted, and continue to develop. Efforts concerning the management of wildlife populations have included controls on hunting gear, international trade limitations, and public awareness campaigns. During the past 26 years, law enforcement has been truly strengthened to the benefit of wild bear populations.

For example, in 1998 the Chinese government started a project of primary forest conservation in the Yangtze River and Yellow River regions to protect watershed forests, which cover about 1 million km². During the period of the project, cutting in all primary forests has been forbidden, and the forest has recovered gradually. A major habitat for bears and other wildlife benefits from this project.

More specifically, to better protect wildlife and their natural habitats, a project to conserve fauna and flora conservation and develop nature reserves started in the year 2000. It covers all different types of nature reserves, including forest, wetlands, wildlife, and others. A total of 2194 nature reserves were established in China from 1958 to 2004, covering 1 480 000 km² and accounting for 14.8% of China's land area. Asiatic Black Bears inhabit some 300 nature reserves (Fan, 2006a). Both of the above-mentioned projects played an important role in restoring the habitat and wild populations of bears.

Management and Law Enforcement

Step by step, as bears' legal status becomes clearer, the official policy of China towards species management is becoming more specific and effective. The international trade in bears and their products has been fully prohibited since the species was listed on Appendix I of CITES in 1992. Their domestic trade has also come under stricter control since the WAPL came into force in 1989.

To further strengthen the protection of bears and other wildlife species, in accordance with provisions of the enforcement regulation on terrestrial wild animal protection and the management regulation on hunting guns and ammunition, all hunting in areas adjacent to nature reserves has been fully stopped since 1988. This trend was again strengthened when the law on management of guns came into force. Management authorities have confiscated all hunting guns or prohibited their use by local people.

Since 1990, law enforcement coordination has improved dramatically. The Conservation Department, Customs Administration, Forestry Police, and the Management Authority for Commerce and Industry have jointly conducted several big events, including anti-poaching, actions against illegal trade (internationally and domestically), public awareness activities, and other measures. These activities have significantly enhanced public recognition of the importance of bear conservation, and have made the public more clearly aware of their legal requirements and obligations if they encounter bear products.

The Network of Wildlife Rescue Centers

Sixteen wildlife rescue centers have been established in China since 1990. The major task of these centers is to rescue wounded, suffering, ill, or disabled wild animals, including animals confiscated from illegal transportation and rearing operations. Bears are commonly rescued by several rescue centers. These centers also conduct to build another 310 branch of wildlife rescue stations. Bears definitely benefit from the relevant assistance provided by this network of rescue centers throughout China.

The Status of Bear Farming

After 17 years of effort to strengthen the administration and management of China's bear farming industry, many small farms with low-level techniques and poor operational conditions were shut down, with bears reallocated to more suitable places like other qualified farms, rescue centers, and wildlife parks. At the same time, some small-scale bear farms also reformed or integrated into big and qualified farms. To date, the number of bear farms has decreased from 480 to 68 in China. All bear farms currently operating in China must meet the minimum requirements set by the national standard for bear farming, and pay attention to the development of breeding technology and the necessary welfare of bears kept in captivity.

Based on a 2005 survey, all recognized bear farms have re-registered and obtained licenses for wildlife raising and breeding. The license allows these farms to produce bear products. Most of them already get the recognition of Good Management Practice (GMP) by the Food and Drug Administration for bear bile medicinal production.

No-tube bile collection is a new technique that uses the tissue of the bear itself to get a tube-like muscle to create a controllable channel for bile collection. Use of this technology has already become a major part of official requirements for all bear farms. Bear farms must also meet other requirements such as the size of cages, provision of recreation grounds, development of a reproduction program, and establishment of a veterinary section.

Distribution of Bear Farms in China

Bear farming was introduced in China in 1984. Because of drastic and uncontrolled development at the early stages, almost 480 bear farms opened, distributed in 14 different provinces. Since the above-mentioned laws, regulations and administrative policies came into force, and relevant technical standards were promulgated, a restructuring of the industry happened. First, the bear farms in Xinjiang Autonomous Region, Ningxia Autonomous Region, Qinghai Province and Guizhou Province shut down in 1990, and bear farms in Beijing and Inner Mongolia were also closed. Now, bear farms can be found only in the provinces of Shaan'xi, Jilin, Liaoning, Heilongjiang, Shandong, Zhejiang, Fujian, Guangdong, Sichuan and Yunnan, as well as Guangxi Autonomous Region. Large-scale bear farms are mainly located in the provinces of Jilin, Liaoning, Heilongjian, Sichuan, and Yunnan (Figure 1).

Figure 1. The Distribution of Bear Farms in China



Source: State Bureau of Surveying and Mapping , <http://219.238.166.215:8088/mcp/index.asp>

For example, Sichuan once had many bear farms and captive bears. But the number of bear farms was reduced from 103 to 25 farms in the year 2004, with the number of bears in captivity dropping from 3000 individuals to 2600. Presently, there are about 2370 bears kept in 18 different bear farms in Sichuan.

Breeding and Reproduction

Captive breeding of Asiatic Black Bears became successful in the early 1990s. By 1999, the third generation of Asiatic Black Bears was born. There are a cumulative 4226 bears born in the farms, with a first generation (F1) of 3614 individuals, a second generation (F2) of 474 individuals, and a third generation (F3) of 138 individuals. The survival rate is about 75.2% on average, including 77.1% for F1, 75.2% for F2, and 45% for F3. Today, breeding bears account for 34% of bears kept in different farms. The average survival rate of cubs has gradually increased nationwide, from 76% in 1998, to 80% in 1999, 82% in 2000, and 86% in 2001 (Fan and Song, 2003).

Standardized Management of Bear Farms

When the WAPL came into force in 1989, the period of bear farm development without necessary wildlife administration ended. All proposed bear farms needed to obey the provisions and requirements of the law, subject to control of licenses for wildlife raising and breeding. In 1993, the urgent notice on the requirement to register and strictly regulate bear farms promulgated by the MOF requested a halt to any bears originating from wild capture, and new bear farm licenses were subject to very specific conditions. Subsequently, those farms which had been unable to meet necessary conditions set by the national standard for keeping bears in their facilities were shut down.

With the further notice regarding enhanced management of bear farming by the MOF in 1996, all administrative departments were requested to pay more attention to *in-situ* bear conservation, to strengthen management of the bear farming industry, and to promote improved conditions in captive bear facilities. This ended the abuse of bears. All farms confirmed as not suitable for keeping bears are now forced to comply and, if they fail again, will be shutdown. In addition to these requirements, all farms are encouraged to cooperate and share experiences and technology to provide the industry with a solid and predictable future. The forced upgrade of technical parameters for bear farms, together with serious anti-poaching and anti-smuggling efforts, should crack down on illicit trafficking and illegal trade. It should also stop the advertisement and promotion of bear products, reduce problems for both wild bears and bear farming activities, and provide necessary time and space to continue conceptual efforts to use captive breeding to satisfy market demand while protecting wild populations and maintaining the species' ecological function in the ecosystem.

The temporary rule of procedures for the breeding and utilization techniques of black bear, produced by the MOF in 1997, set up rules on bear farm sizes, cage dimensions, recreation grounds, origin of bears, raising and breeding technology, surgical operation for bile collection, and scientific management. Under the requirements of this rule of procedures, the Sichuan provincial forestry department set a good example. Among all bear farms in the province, eight farms hold more than 100 bears, accounting for 79.1% of the total number of bears kept in captivity. Six other farms hold fewer than 50 bears, accounting for only 5.4% of the total number of captive bears. However, no matter what the scale of the farm, all of them have built the recreation grounds, and most already have captive breeding programs, with enough rearing areas and veterinary rooms. Sichuan has promoted bear farming on a large scale, and standardized the whole industry in the province.

Improvement in the Technology of Bile Collection

The no-tube bile collection technique was successfully developed in 1996. Under this technique, a veterinarian can create a tube-like bile collection fistula through a surgical operation. Using a soft and thin catheter inserted into this fistula in the abdomen, bile can be collected very easily. Following the operation, the bear will back to normal after about one month without any side effects, and there is proof that the operation does not obstruct the reproduction of these bears. This technique not only improves the living condition of the bears but also simplifies the bile collection process and minimizes dangers to both animals and staff. A survey recently conducted by the

Mammalogy Society showed that almost all bear farms are using the fistula technique to collect bile. The application of this technique makes management of the captive population more effective, and breeding bears and bile producing bears no longer need to be separated. According to some sources, the quality of bile has also improved.

Impacts of These Developments on Bear Farming

Statistics on bear farming in China in 1992, 1996, 1998 and 2001 showed that the number of bear farms decreased significantly—about 72%—during those 10 years. However, the captive bear population increased at a steady rate, as more individuals from the captive population reproduced. Based on a survey in 2005, the number of qualified and reasonably large bear farms has been adjusted to 37. The progress of this consolidation has been difficult but solid, and clearly demonstrates that government policies have been fully and seriously implemented.

As bears for bile collection can now also be used as breeding stock, a fairly large breeding population has become available, thus the ratio of captive bred bears increased from 1.63% in 1992 to 34.65% in 2001, with F1, F2 and F3 offspring accounting for a large part of this shift (Fan, 2006b).

PROBLEMS AND ANALYSES

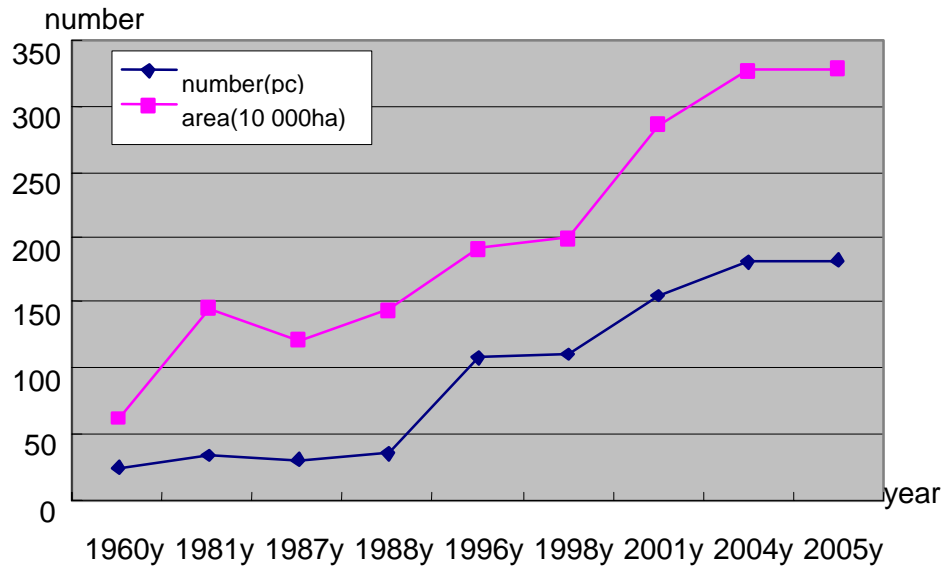
As the bear farming industry has developed, the pressure on wild populations evident at its early stages has disappeared, and long-term positive effects on *in-situ* conservation have been demonstrated. However, the recovery of wild bear populations is now often causing new problems. For example, conflict between bears and local residents has been frequently reported by various media. These events most often happen in remote and poor mountainous areas, with the livelihood of local people sometimes severely affected by efforts to protect wild animals. Bear damage to the crops of local people, and even direct threats to their lives and safety, are a major challenge now facing the administrative authorities. How to balance local community development and wildlife protection is a difficult question that both local government and wildlife conservation authorities must handle responsibly. The policy to address this issue is still not clear at the provincial and subordinate levels.

Conservation, Sustainable Utilization, and the Recovery and Increase of Wild Bears

The implementation of WAPL and the regulation on the management of forest and wildlife nature reserves established protection for bear habitat, and also gradually improved public awareness about bear conservation. Take the example of Yunnan province, where there were only 24 natural reserves in 1960. That number increased to 183 nature reserves as of 2005. The area covered by these nature reserves expanded from 625 000 ha in 1960 to 3 292 400 ha in 2005 (**Figure 2**). Even if direct census data on the wild bear population in recent years are not available, the increasing number of reported cases of damage caused by wildlife, in particular by wild bears, suggests a convincing trend of population increase in Yunnan.

According to a provision of the WAPL, nobody can hunt wild animals without a hunting permit or special hunting permit. Local residents also have no right to carry out any hunting activities to protect their crops, livestock or property except in case of emergency, for example when a wild animal places human life in danger. This situation has become a major hurdle to securing continued and dedicated efforts on behalf of wildlife conservation from local communities. Based on our experience, without the necessary recognition and participation of these local communities, any conservation initiative can only be expected to fail.

Figure 2. The Development of Nature Reserves in Yunnan



To better address this issue, in 1998 the provincial government of Yunnan province started to compensate local residents for damage caused by wildlife. This is a pioneering action for China. A compensation fund of about one or two million yuan was formally established in 2001; the size of the fund increased to 4.5 million yuan after 2003, and reached eight million yuan in 2005 (the Conservation Office of Yunnan Province Forest Department, 2006). Even with this fund, however, local residents could get only about three per cent of the loss caused by wildlife damage covered before 2003, 8–10% after 2003, and 15% in 2005 (**Figure 3**). In other words, the issue of damage to local people caused by wildlife still has not been solved in Yunnan, although the province is one of the best in terms of having a mechanism to make compensation happen to some degree. The local people can still get only a minor part of their losses covered, and this does not include anything for spiritual loss in cases where animals hurt or kill them or their relatives.

The data in **Figure 3** demonstrate an increase of damage and loss caused by wildlife. The total damage increased from 30.07 million yuan in 2001 to 50.05 million yuan in 2005. The average damage by black bears during this period accounted for about 20% of this, and reached 25% in 2005 (**Table 1**). The total damage by wildlife in Yongde County, Lincang Prefecture was 857 000 yuan, of which 714 000 yuan was caused by Black Bears, accounting for 83.3% of the total. Black bears also caused the deaths of two persons, six persons were wounded severely enough to become crippled, and 16 other persons got hurt in these five years.

Figure 3. Compensation for Damage Caused by Wildlife in Yunnan Province, 2001–2005

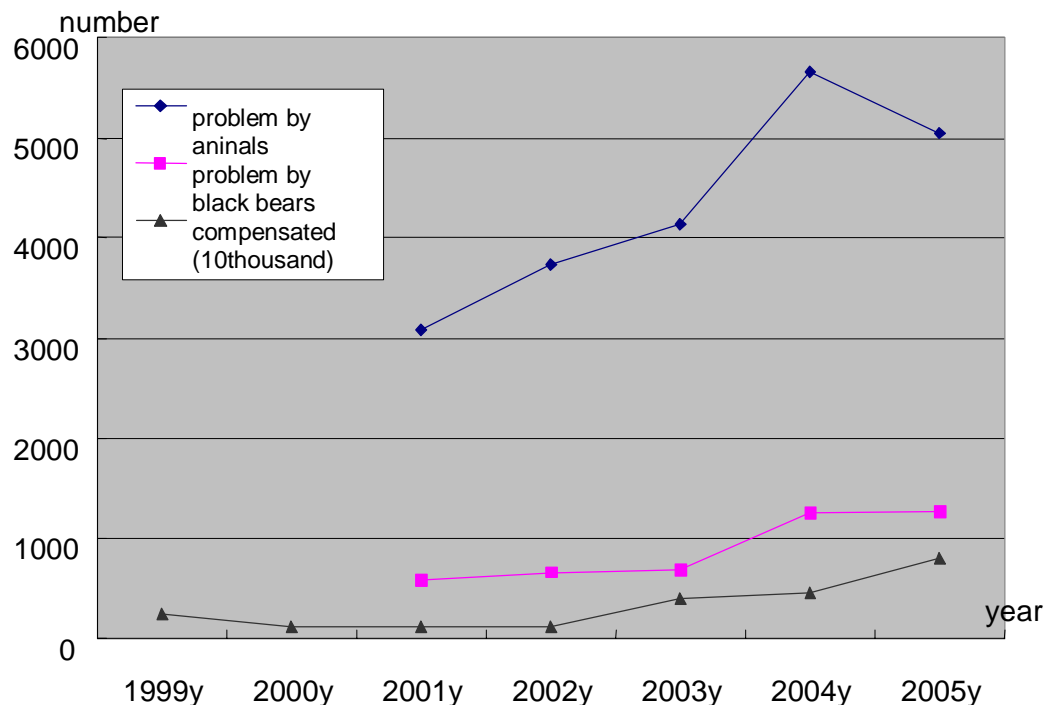


Table 1. Damage by Wildlife and Black Bears in Yunnan Province, 2001–2005

Year	Black bear*	Wildlife*	Rate of damage by black bear
2001	580.16	3076.9	18.85%
2002	672.44	3731.8	18.02%
2003	687.62	4130.1	16.65%
2004	1244.08	5658	21.99%
2005	1266.71	5049.7	25.08%

* unit=10 thousand Yuan

This situation has imposed great pressures on *in-situ* conservation of wildlife, including bears. Local residents constantly complain, arguing “who should get the priority, wild animal or human being?” and “human is lower than wildlife”. This is creating new problems for future conservation work in China. Linking conservation with promotion and development of the local economy could be the solution; therefore, pure protection of wildlife should be adjusted to adapt to this new situation. The idea of using management skills to balance expansion of local wildlife populations and generation of some amount of funding for local communities will need serious consideration. Generally, the nature of problem facing wildlife conservation authorities is to change one-way

conservation-oriented activities to two-way management and development-oriented activities. This means a substantial increase in the work load.

The Contribution to Wildlife Conservation and Dilemma Faced the Bear Farming Industry

Bear bile was used in TCM at least two thousand years ago, as was clearly recorded in *Materia Medica of the Tang Dynasty* (TANG BEN CAO), and the *Compendium of Materia Medica Literature* (BEN CAO GANG MU). It has become an irreplaceable element of TCM (Jia and Yan 2003). Demand for this precious medicinal material is therefore very strong.

The bear bile used to meet this demand came from the killing of wild bears until bear farming started in China in 1984. According to the investigation of Kunming Zoological Institute of Chinese Academy of Science for the bear farming of SiChuan province in 2005, one kilogramme of the bile is equivalent to the killing of 118 wild bears. This significantly solved the issue of supply of bear bile to the medicinal industry. If we take 5000 kg as the average annual consumption of bear bile in China, that means that if the bile was not available from bear farms, nearly 110 000 or 125 000 wild bears would need to be slaughtered to meet the demand, an unaffordable nightmare for any *in-situ* bear conservation programs.

In the early stages of the industry, the collection of wild bears to supply bear farms imposed great pressures on wild populations. Rough techniques in operating on the bears and maintaining them daily led to a high death rate, adding further difficulties to *in-situ* conservation efforts. Along with changes in the legal environment, as more thorough maintenance techniques and breeding skills became mature (especially the no-tube fistula bile collection technique), each captive bear could produce about 2947 g of bile annually. That means that 66–76 wild bears could survive. These numbers clearly show the positive effects that bear farming has created for *in-situ* conservation. Conversely, they show that if bear farms were to be shut down in China, for whatever reason, all bears in the wild throughout the world would face substantial poaching pressure.

As was discussed in the last section, legislation in this area has already sharply restructured the bear farming industry. This has enabled bear farms to develop into larger sizes, obey legal provisions, care for bears more scientifically, and improve bile production and breeding. The efforts made in this direction show positive trends in this industry; however, the industry is still one of most controversial programs in the world. Animal right groups always make the bear farms a target, neglect their positive effects, and still use pictures taken during the early stages to describe the industry as evil. Because of differences in culture and different levels of economic development, most western countries do not accept the concept of bear farming. Therefore, hopes or plans to register the captive population for commercial international trade are still pending.

The Importance of Bear Gallbladder to Chinese Medicine

TCM values bear gallbladder as gold to some extent. According to the records *Compendium of Materia Medica Literature*, edited by Li Shizhen in the Ming Dynasty, bear gallbladder is of bitter taste and cold nature, and can be used in many ancient prescriptions. It has become an indispensable element of TCM. Modern research shows that bear bile can be used to treat a variety of conditions, including detoxifying and removing heat from the liver, improving vision, and easing pain (Jia and Yan 2003). The reason is that bear bile contains ursodeoxycholic acid (UDCA), which is found only in bear species and to date cannot be replaced by other animals (Jia and Yan, 2003).

That bear gall has remained an important raw material for TCM for two thousand years also shows that its special function cannot be superseded (Jia and Yan, 2003). At present, there are about 123 Chinese medicines containing bear bile; many patients take these medicines for recovery. And 183 Chinese medicine manufacturers depend on bear bile powder to produce medicines. Therefore,

the destiny of bear farming is directly tied to the development of TCM, and the health of those people who use TCM. As was discussed above, the future of wild bear populations and *in situ* conservation is also closely tied to the development of bear farming activities.

CONCLUSION AND SUGGESTIONS

- The development of Chinese bear farming has fundamentally abandoned the ways of killing the goose that lays the golden eggs, and eventually solved the problem of balancing demand for bear bile in TCM with the sustainable utilization of bear resources. Therefore, efforts to understand the bear farming industry should focus on the relationship between how to satisfy the substantial need for bear bile for TCM industry and its positive impact on *in-situ* conservation. To pay more attention to the welfare of captive bears in farms is another point that requires balancing the attitudes of people from different cultures and customs. To proceed, CITES policy should make these farming activities fully registered, and allow international trade of bear products to grow the industry and enable it to make more contributions to bear protection in the wild throughout the world.
- More than 20 years of practicing bear farming in China provides a solid basis to demonstrate the positive effects of this activity. The progress achieved in the areas of medicinal manufacturing and bear conservation, along with improvements in the management of farms, reflect the efforts of various competent authorities. However, the increase of wild bear populations has brought a new challenge—how to resolve increasing conflicts between humans and bears. This has become a problem that should be addressed. Key will be how to maintain the interest of local communities in *in-situ* conservation. Compensation for damage caused by wild bears should be fully paid, and innovate ways to establish compensation funds should be considered, including collecting a tax from the most profitable parts of bear rearing and medicinal manufacturing.
- Scientific and technological progress, along with constant investment, have made bear farming a great success in captive population management, preventing the killing of wild bears and satisfying the demand for bear bile from the medicinal industry. The achievements made by this great practice represent a remarkable symbol of success for both captive breeding and *in-situ* conservation. The model of this kind of practice should be respected and disseminated as broadly as possible. A decent understanding of this approach will enable this model to work for the protection of other species, and could lead to a new era in resolving problems caused as human needs increase and wildlife habitat shrinks.

ACKNOWLEDGEMENTS

I would like to express very sincere thanks to the experts from Kunming Zoological Institute of Chinese Academy of Science for their comments and suggestions on bear farming and *in-situ* conservation. Many thanks also to Mr. Chen Dezhao and Mr. Wu Long, who provided major help in the part about human and wildlife conflicts and nature reserve management from the perspective of government staff at the provincial level in the Conservation Office of the Yunnan Forestry Department. Thanks also to my colleagues in the CITES office based in Beijing for their contribution to the legal and international trade issues. And lastly, I should also show my appreciation for the invitation by the conference organizer through its China program.

REFERENCES

- Fan ZY, and Y. L. Song. 2003. The problem analysis of Chinese bear breeding development. Strategy study on the conservation of endangered wild species as medicine in China. Strategy study on the conservation of endangered wild species as medicine in China. Chinese Science and Technology Information Institute, Beijing.
- Fan ZY. 2006a. The analysis and consideration on the problem of bear breeding. The Science and Technology of Tian Jin Agriculture 189(1): 4-10.
- Fan, ZY. 2006b. Chinese bears and bear breeding status. Species (3): 6-7.
- Jia Q., and J. P. Yan. 2003. An example of the conservation and utilization for bear breeding. Published on Internet. Chinese Science and Technology Information Institute, Beijing.
- Ma ,Y. Q. 1998. Asia black bears. *In*: Red book of Chinese endangered animals, mammals, Wang Song, (ed.). The Press of Science, Beijing, pp. 177-179.
- Zhang L.F. and H. F. Xu. 2003. The conservation of bears as medicine animals. *In*: The conservation and sustainable utilization of wildlife resources as Chinese medicine. The Press of Huandong Teacher College, Shanghai, pp. 119-125.
- the Conservation Office of Yunnan Province Forest Department. 2006. the Report of Survey and Study on the Status of Local Residents for Damage Caused by Wildlife and the Mechanism of the compensation in Yunnan. Unpublished. p. 29

TRADE IN BEARS AND THEIR PARTS IN INDIA: THREATS TO CONSERVATION OF BEARS

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Abstract: India occupies a land mass of 3.287 million km², 2.44% of the world's land area. Forest cover, in which most of the nation's wild natural resource base exists, is 0.637 million km², 19.39% of India's total land area. There are 586 national parks and wildlife sanctuaries, including 28 tiger reserves and 25 elephant reserves covering 4.75% of the country's land area. These protected areas represent 24.5% of the total forest cover of the country that have been demarcated for *in-situ* conservation of wildlife and biodiversity.

There is no denying that a brisk illegal trade in all species of bears in India and their products goes on despite a legal ban on such activity, fetching a fabulous return for the smugglers and traders involved in it. The future of bear species in India is precarious given a lack of information on the nation's bear species and ongoing illegal trade.

It is interesting to note that most of the bears being poached in India feed markets outside its borders. Primary consumers are China (including Hong Kong and Tibet), Taiwan, Malaysia, South Korea, and even Japan, where wildlife products are used in traditional oriental medicine. The extent and potential impact of the killing of Sloth Bears and possibly other species for sale of parts or for bear bile, which is used in medicine for joint pain, is uncertain. There are reports that dried Sloth Bear gallbladders have been imported into Japan from India.

Enforcing laws protecting wildlife is often difficult because of the low capacity of enforcement authorities as well as ineffective and problematic enforcement policies and strategies. The problem is compounded by the general public's low awareness and involvement in conservation. Over the past decade wildlife crime in the country has been taken more serious by the courts and other enforcement agencies, and good international cooperation has been shown by Southeast Asian nations in seizing illegal wildlife. The Indian Wildlife Protection Act of 1972, as amended, provides a clear-cut basis for legal protection of all bear species. Despite its flaws, it is still undoubtedly one of the strongest laws regarding wildlife protection in the world. A Recent National Wildlife Action Plan has also identified priority areas, recommended strengthening enforcement machinery, and called for securing the country's borders with consumer countries. The government has also announced plans for a Wildlife Crime Cell, whose primary purpose will be to provide security and safety for wildlife, as well as monitoring wildlife crime.

This presentation summarizes information collected from 2001 to 2006 with regard to illegal trade, primarily pertaining Sloth Bears in central India. The presentation will include various case studies of bear seizures and trade routes, and will also detail the current policy of India's government towards conservation of wildlife and bears.

INTRODUCTION

India occupies a land mass of 3.287 million km² and represents 2.4% of the world's land area. In 2006, forest cover stood at 0.637 million km², 19.39% of India's total land area. India has 586 national parks and wildlife sanctuaries, including 28 tiger reserves and 25 elephant reserves, covering 4.75% of the country's land area. Some 24.5% of the total forest cover of the country has been demarcated for *in-situ* conservation of wildlife and biodiversity.

Two bear species inhabit India, the Sloth Bear *Melursus ursinus* and the Asiatic Black Bear *Ursus thibetanus*. There is no denying the fact that illegal trade in bears and their products is ongoing, despite the fact that both species are listed on Schedule I in the *Wildlife Protection Act (1972)*, which confers the highest degree of protection to these animals. Both species are also listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Yet smugglers and others involved in this trade continue to use loopholes in the law because of the high returns these wildlife products produce. The domestic market is minimal, and the main consumer countries are China (including Hong Kong and Tibet), Taiwan, Malaysia, South Korea, and Japan. In these countries wildlife products are used in traditional oriental medicine, and their markets for these products command the most lucrative prices.

The extent and potential impact of the killing of Sloth Bears and Asiatic Black Bears¹ for sale of their parts is alarmingly high for wild populations. Bears are poached for several reasons (**Figure 1**). Poaching to secure gallbladders used in medicine/treatment for rheumatism and joint pain is a contributing factor. There is also trade in bear cubs for bear paw soup (the paws of bear cubs are a delicacy in several Southeast Asian countries (Gupta, 2000; Govind and Ho, 2001).) Sloth Bear cubs are further poached across India for use as "dancing bears". Approximately 600-800 dancing bears are still with the Qalandars (Gypsies) in India (Satyanarayan and Seshamani, 1997; Singh and Satyanarayan, 2006). Both Sloth and Black Bear cubs are poached and smuggled across the border to the Northwest Frontier Province of Pakistan for a blood sport called "bear baiting", in which pit bull terriers torment and kill bears. Large sums of money are bet on this sport.

Enforcing laws that protect wildlife is often difficult because of severe limitations on the part of enforcement authorities, as well as ineffective and problematic enforcement policies and strategies. These problems are compounded by a low level of awareness amongst the public, lack of public involvement in conservation, and vote bank politics. Over the last decade wildlife crime in India has gained importance, with the Honorable Courts and other enforcement agencies taking wildlife offenses seriously, and even taking action against some celebrities. Added to this is well-balanced international cooperation shown by Southeast Asian countries in seizing wildlife products and sharing information and trade data.

The Indian Wildlife Protection Act, as amended, provides a clear-cut legal basis for protection of all bear species. Despite its flaws, it is still undoubtedly one of the strongest laws on wildlife protection in the world. A recent National Wildlife Action Plan has also identified priority areas, and calls for strengthening enforcement capacity and securing India's borders with neighbouring wildlife consuming countries. India's government has also announced its intention to create a Wildlife Crime Cell, proposed during a meeting of the National Board for Wildlife (NBW) convened by the Prime Minister in March of 2006. The primary purpose of the cell will be to provide security and safety for wildlife, as well as monitoring wildlife crime.

¹ Asiatic Black Bears are also sometimes referred to as Himalayan Black Bears in India.

Figure 1. Reasons for Bear Poaching In India

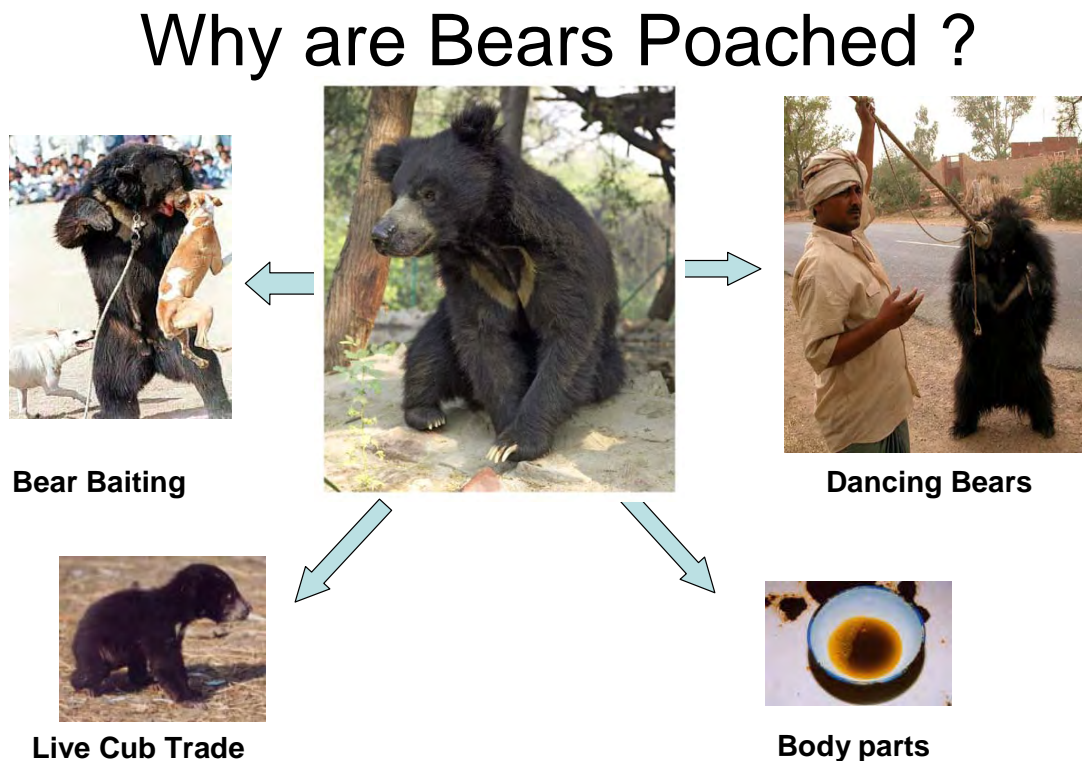


Photo credits: (clockwise from live cub trade): Kartick Satanarayan, WSPA, John Wright, Alan Knight.

This paper discusses common threats to both species of bear in India and the attempts of Wildlife S O S to work with tribal communities involved in the poaching and using of India's bears. It also highlights the anti-poaching network spread across several Indian states, and its surveillance and information-gathering about the Sloth Bear cub trade. The paper details the current policies of the Indian government regarding conservation of wildlife, and bears in particular. The future of India's bear species is precarious, given the lack of information combined with ongoing illegal trade.

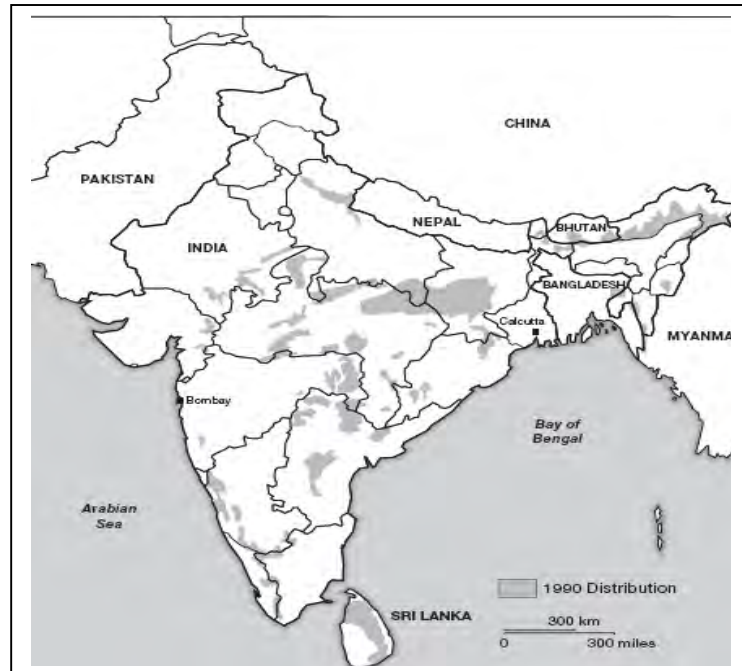
THE STATUS OF SLOTH AND ASIATIC BLACK BEARS IN INDIA

Sloth Bear *Melursus ursinus*

The Sloth Bear is protected under Schedule I of India's 1972 *Wildlife Protection Act*, and trade of Sloth Bears and their parts is illegal. Sloth Bears are classified as Vulnerable by the IUCN and are listed on CITES Appendix I.

Sloth Bears are distributed throughout forested tracts of India and Assam, from the base of the Himalayas to Sri Lanka (Prater, 1980). Their optimal habitat appears to be the tropical dry deciduous forests of central India. The total estimated number of Sloth Bears in India is approximately 8110 (Chauhan, 2006). **Figure 2** shows the distribution of Sloth Bears in India and Sri Lanka as of 1990.

Figure 2. Distribution of Sloth Bears in India and Sri Lanka, 1990



Source: Smithsonian National Zoological Park, USA

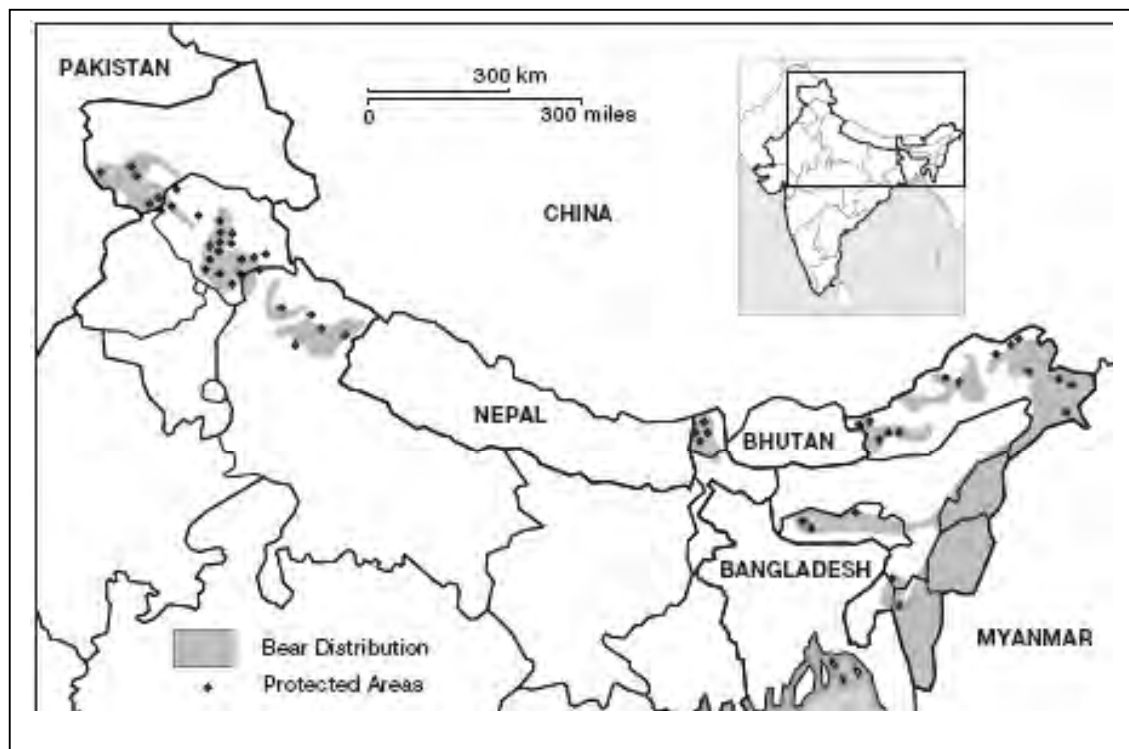
The main threats to Sloth Bears are habitat destruction and intrusion into forests by local settlements. The Sloth Bear is reported to be extirpated from many forested areas of its former range (Krishnan, 1972). Given the fact that the species occurs in heavily populated countries, there is surprisingly little accurate information available on its distribution or numbers. Bears of all species in India and Bangladesh are killed for the sale of their body parts (Khan, 1982; Singh, 2006; Gupta, 2007).

The future of Sloth Bears is precarious given the lack of information on its status, combined with ongoing, unregulated, commercially-driven harvest.

Asiatic Black Bear *Ursus thibetanus*

The Asiatic Black Bear occurs in India, Kashmir, the Himalayas, and Assam. **Figure 3** shows the species' distribution in India. Outside of India, the Asiatic Black Bear's range extends eastward into China and Japan, southward into Burma and the Malayan countries, and westward into Baluchistan (Prater, 1980; Fox *et al.* 1986).

Figure 3. Distribution of the Asiatic Black Bear *Ursus thibetanus* in India



Source: S. Sathyakumar, Status and Management of Asiatic black bear and Himalayan brown bear in India. *Ursus* 12:21-30.

The Asiatic Black Bear's status appears uncertain throughout much of its range. The marketing of bears and bear parts seems most acute with this species. It is favoured for traditional medicine and for unusual cuisine. The internal trade in China alone must be massive, although there are no precise records available. CITES records exist on the massive amount of international trade, but these records are no doubt incomplete. Without trade controls and the initiation of management strategies for harvest, it appears this species could become extinct throughout most of its range in the very near future (Govind and Ho, 2001). The Asiatic Black Bear is the species most affected by poaching for bear gallbladders (Singh, 2006).

OBJECTIVES

In 2003, Wildlife S O S initiated a survey on India's bears, with the following objectives:

- To investigate the extent of the threat to the conservation of both of India's species of bears through poaching of sloth bear cubs for the dancing bear trade, and the poaching of Asiatic Black Bears for gallbladders.
- To assess the number of traders involved, and the socio-economic pressures/factors that led them to be in this profession.
- To determine the source of Sloth Bear cubs, the process of capturing and selling the cubs, and the extent of injury, death and trauma to the animals involved. Also, to investigate methods of transportation and trade, and to establish a community initiative to sustainably rehabilitate "consumer" tribes and those who earn money through cub poaching. Wildlife S O S believes

that any successful future for conservation is possible only by working with tribal communities to persuade them to give up this trade and substitute it with alternative professions.

- To study the efficacy of state and national laws as they exist on paper and as they are actually implemented regarding the poaching of Sloth Bear cubs and the method of licensing that permits purchase, transportation and dancing of the cubs. Also, to suggest methods of controlling this profession, prevent the entry of new cubs into the market, and provide rehabilitation plans, keeping in mind the fate of the bear and its owner/trainer.
- To investigate Asiatic Black Bear–human conflicts, which have accelerated the hunting and killing of Asiatic Black Bears and indirectly contributed to the trade in bear parts.

METHODOLOGY

Between 2003 and 2006, the survey focused primarily on separate questionnaires for Sloth Bear hunters/traders and captive Sloth Bear owners/trainers. Information gathering for the black bear gallbladder trade required a different approach. This information was collected by spending adequate time with local populations. The questionnaires were administered face to face using the national and native languages. Interviews also included Adivasis Or (tribal people) actively involved in hunting and poaching bears, and also those who did the buying, selling and transporting. Wildlife S O S researchers even witnessed several transactions. Various officials connected with zoo conservation projects, India's wildlife and the forest departments, and forest rangers and guards were interviewed. Field visits were conducted to various known sources of bear cubs, and raids were carried out in conjunction with enforcement authorities.

Between May 2003 and May 2006, surveys of trade routes were conducted by Wildlife S O S in various parts of India. The focus was on studying markets and places located near India's international boundaries. The surveys were intended to assess possible trade routes, and to identify poaching spots. They focused on the availability of bear gall, bear skins, and whole bears, and involved assistance from the Qalandars as well as local tribes.

RESULTS

Sloth Bear Cub Poaching Hot Spots

Based on our survey, eight high-density Sloth Bear cub poaching areas were identified in India: Madhya Pradesh, Orissa, Chattisgarh, Uttar Pradesh, Jharkhand, Karnataka, and Andhra Pradesh. One possible reason for their prominence is that Sloth Bears are widely distributed in these eight states. Within these states, specific regions were found to be cub poaching hot spots. These are as follows:

Table 1. Sloth Bear Cub Poaching Hot Spots in India

Sl. no.	State	Sloth Bear cub poaching hot spots
1.	Uttar Pradesh	Lakhimpur Kheri, Jhansi and (areas bordering Nepal)
2.	Madhya Pradesh	Sidhi, Shivpuri, Shahdol
3.	Chattisgarh	Pindra and (Forest areas bordering Andhra Pradesh)
4.	Jharkhand	Tatanagar, Ranchi
5.	Bihar	Haweli Kharakpur
6.	Orissa	Chaibassa, Sambalpur, Rourkela, Redakol
7.	Karnataka	Hubli, Hospet (areas bordering Andhra Pradesh)
8.	Andhra Pradesh	Walihaider, Khera (Forest areas bordering Karnataka)

Number of Sloth Bear Cubs Poached From the Forest Each Year

When Wildlife S O S started the survey in 2003, the number of Sloth Bear cubs being poached annually across India was over 100 (Seshamani and Satyanarayan, 1997). During the first three years of study, Wildlife S O S confiscated more than 50 bear cubs with the help of state government enforcement authorities (**Table 2**).

Table 2. Results of a Survey on Sloth Bears Rescued, Number of Poachers Arrested May, 2003 to May, 2006

Date	District	State	Bears Rescued	Persons Arrested	Enforcement Agency Collaboration
May 06	Bellary	Karnataka	1 cub	1	Karnataka Forest Dept.
May 06	Koppal	Karnataka	1 female cub	2	Karnataka Forest Dept.
Apr. 06	Deoriya	Uttar Pradesh	1 bear cub	Escaped	Uttar Pradesh Forest Dept.
Mar. 06	Koppal	Karnataka	1 male cub	1	Karnataka Forest Dept.
Mar. 06	Bellary	Karnataka	1 bear cub	1	Karnataka Forest Dept.
Mar 06	Koppal	Karnataka	1 bear cub	Escaped	Karnataka Forest Dept.
Mar 06	Bellary	Karnataka	1 female cub	1	Karnataka Forest Dept.
Jan. 06	Chikkamagular	Karnataka	1 mother, 2 male cubs	Escaped	Karnataka Forest Dept.
Nov. 05	Gangalpad	Andhra Pradesh	6 cubs	3	A. P. Forest Dept.
Nov. 05	Mehboob Nagar	Andhra Pradesh	2 cubs	2	A. P. Forest Dept.
Oct. 05	Hyderabad	Andhra Pradesh	Bear Skin	Escaped	Wildlife S O S
Jul. 05	Pune	Maharashtra	3 cubs	3	Maharashtra Police
Apr. 05	Pilibhit	Uttar Pradesh	2 cubs (dead)	Escaped	Wildlife S O S
Mar. 05	Redakol	Orissa	4 bears	--	Wildlife S O S
Feb. 05	Hubli City	Karnataka	2 cubs	3	Karn. Police & Forest Dept.
Feb. 05	Gokak Highway	Karnataka	2 cubs	3	Karn. Police & Forest Dept.
Feb. 05	Hubli	Karnataka	1 cub	2 men	Karn. Police & Dept.
Feb. 04	Babina	Uttar Pradesh	2 cubs	2 men	Uttar Pradesh Police
Mar. 04	Guna	Madhya Pradesh	1 cub	1 man	Madhya Pradesh Police
Feb. 04	Agra	Uttar Pradesh	5 cubs	Escaped	U. P. Police & Forest Dept.
Jan. 04	Agra	Uttar Pradesh	3 cubs	5 escaped	U. P. Police
Jan. 04	Kirawali	Uttar Pradesh	2 cubs	1 man	U. P. Police
Jul. 03	Jalon	Uttar Pradesh	1 cub	1 man	U. P. Police
Aug. 03	Jhansi	Uttar Pradesh	3 cubs	2 escaped	U. P. Forest Dept.
Jul. 03	Kanpur	Uttar Pradesh	2 cubs	1 man	U. P. Forest Dept.

Trade Routes

On the basis of demand for Sloth Bear cubs, India was divided into two regions: northern India and southern India. The northern Indian Qalandars were getting cubs from Uttar Pradesh, Madhya Pradesh, Chattisgarh, Jharkhand and Bihar. The southern Indian Qalandars were procuring poached bear cubs from the states of Karnataka, Andhra Pradesh and Orissa.

Number of Traders Involved in Sloth Bear Cub Poaching

Through investigation and surveys, as well as interaction with the community, Wildlife S O S identified 21 persons in different states of India who were actively involved in Sloth Bear cub poaching and trading, in seven locations (**Table 3**). In interviews, these poachers confessed to having smuggled bear cubs across international borders to Nepal for buyers from South Korea and Southeast Asian countries.

Table 3. Locations in Which Poachers Confessed to Having Smuggled Bear Cubs

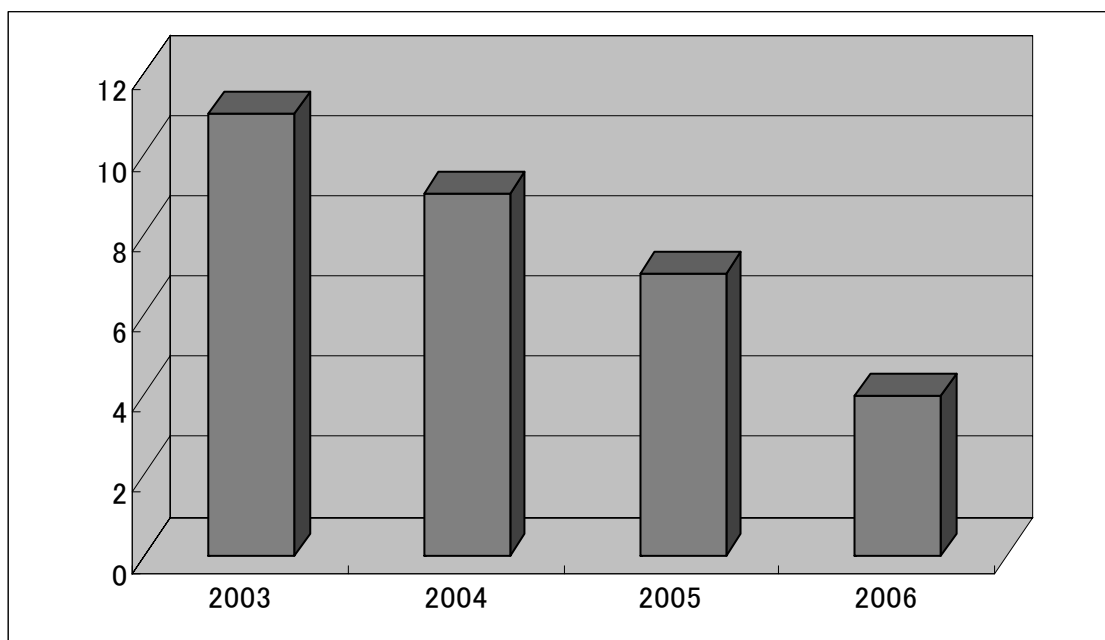
S. No.	Place/Location	State	No. of Poachers
1	Azamgarh	Uttar Pradesh (Eastern)	4
2	Oraiya	Uttar Pradesh (Eastern)	1
3	Shivpuri	Madhya Pradesh	2
4	Indapura	Maharashtra	3
5	Hubli	Karnataka	8
6	Sambalpur	Orissa	1
7	Warangal and Cumbum	Andhra Pradesh	2
Total:			21

These interviews and descriptive data clearly indicated that poachers from northern areas in India were supplying cubs to border areas. From there they would be smuggled from India into Nepal for transport to Southeast Asian countries. Poachers from southern states and Maharashtra were in turn supplying bear cubs to the northern state middlemen/traders. Maharashtra and Orissa were clearly popular trade/exchange points.

In comparing results collected from trade routes, places, sources of supply, the number of bears involved in illegal trade, and bear parts trade, the number of Sloth Bear cubs rescued during the study clearly indicates a yearly decline in poaching (**Figure 4**). This decline was attributable to vigorous anti-poaching efforts conducted primarily by Wildlife S O S and government enforcement agencies.

All interviews indicated that the smuggling of cubs across borders went on undisturbed and on a large scale until 2001–2002. After this period, all poachers (interviewed individually) confessed that strict forest department and police enforcement was making it too difficult to carry on this trade in the same manner in the border areas. Several poachers/carriers were caught and narrowly escaped punishment. In three cases the carriers abandoned sacks containing live cubs to facilitate escape when confronted by enforcement authorities.

Figure 4. Number of Cubs Rescued, Indicating a Decline in Sloth Bear Poaching



Source: Kartick Satyanarayan & Brij Kishor Gupta

Rehabilitation Facilities

To rehabilitate rescued Sloth and Asiatic Black Bears, India has established five organized rescue centers (**Table 4**).

These centers provide naturalistic, life time care facilities for the rescue and rehabilitation of bears, with well-designed environmental enrichment programs that create an opportunity for bears to exhibit species-typical behaviours and encourage an increase in physical activity. In rescue centers for Sloth Bears, Qalandars are also provided appropriate rehabilitation packages, and often employment, after signing a memorandum of understanding that they will never again get involved in the bear trade business. They must also surrender their dancing bear and licenses.

Table 4. Details of Rescue and Rehabilitation Centers Established to House Rescued Sloth and Asiatic Black Bears

S. No.	Location of the Center	State	Center Run by	Species of Bear housed
1	Centre for the Conservation and Rehabilitation of Bears/Agra Bear Rescue Facility, Agra	Uttar Pradesh	Wildlife S O S	Sloth Bear
2	Bannerghatta Biological Park, Bangalore	Karnataka	Wildlife S O S	Sloth Bear
3	Pakke Wildlife Sanctuary, Pakke	Arunachal Pradesh	Wildlife Trust of India	Asiatic Black Bear

Asiatic Black Bear Gallbladder Trade in Northern States of India

The study has revealed that an active black bear gallbladder trade is ongoing in India. Black bear poaching has been reported from the Himachal Pradesh and Uttaranchal states of India.

Trade Routes

Our study established that locally influential inhabitants are involved in poaching, using licensed or unlicensed firearms. They are also the primary links in well-oiled trading routes, following an established pattern of smuggling both banned animal products and narcotics. They do not usually pay the expected value of the animal product; in fact these middle men, with links to national and international markets, make their profit by buying the banned products very cheaply at the source. Such networks need comprehensive study to understand their magnitude and trade patterns regarding banned animal products. After passing through the primary links, wildlife products pass into the hands of intermediaries who carry them to markets like the ones situated near Shimla, Chandigarh and Delhi, where they finally enter the hands of the wildlife mafia. As a conservation strategy, we need to keep in mind the workings of such networks and focus ground efforts on field poachers/small traders, assisting them to find alternative economic sustenance to reduce their reliance on wildlife. At the higher levels in this market, one could seek substitution of banned animal products (e.g., replacing the gallbladder with a chemical substitute).

Customer Demand: The Main Reason for Supply

The survey revealed that many poachers belong to the Bhutia tribe. These tribe members were actively involved in poaching and trade in black bear gallbladders and bile products. Overall, their customers included people from Delhi, Nepal, Tibet and China. Members of the Bhutia tribe also work as porters for tourists, mountaineers and trekkers, and for those conducting business across borders. Extensive interviews with them revealed how frequently they carry wildlife products across the porous borders using land routes, and that they also supply a thriving market amongst Indian “tourists” themselves.

ACKNOWLEDGEMENTS

This study was made possible by support from the Chief Wildlife Wardens of Andhra Pradesh, Uttar Pradesh, Bihar, Jharkhand, Karnataka, Maharashtra, Orissa, Chattisgarh, Madhya Pradesh and Delhi. Concerned forest officials, police personnel, and Qalandars helped carry out the survey and data collection.

The authors are also thankful to the Ministry of Environment and Forests; the Regional Deputy Directors of Wildlife Preservation at Chennai, Kolkata, Mumbai and New Delhi; Dr. B. R. Sharma, Member Secretary, Central Zoo Authority; and Mr. P. R. Sinha, Director, Wildlife Institute of India, Dehradun, for providing advice and necessary support in carrying out the present study.

REFERENCES

- Fox, J. L., S. P. Sinha, R. S. Chundawat, and P. K. Das. 1986. A survey of snow leopard and associated species in the Himalaya of North Western India. Government of India, 51 pp.
- Govind, V. and S. Ho. 2001. Trade in bear gallbladder and bear bile in Singapore. Consumer report, WSPA.
- Gupta, B. K. 2000. Illicit trade of live animals and animal products in the Nilgiri Biosphere Reserve. Tiger Paper 27:3, pp. 1-3.
- Gupta, B. K. 2007. Wildlife in the crosshairs. Science Reporter 43:11, pp. 9-15.
- Gurung, K. K. 1983. Heart of the jungle. Andre Deutsch Limited. Kathmandu, Nepal, 197 pp.
- Jaffesan, R. C. 1975. *Melursus ursinus* survival status and conditions. R.C. Jaffesan, Washington, D.C. (Cited in Rice 1987)
- Kahn, M. A. R. 1982. Wildlife of Bangladesh. University of Dhaka, Bangladesh.
- Krishnan, M. 1972. An ecological survey of the larger mammals of peninsular India. J. Bombay Natural Hist. Soc. 69:26.
- Lekagul, B. and J. A. McNealey. 1977. Mammals of Thailand. Sahakarnbhat, Bangkok. 758 pp.
- Milliken, T. 1985. Japanese bear trade cause for concern. Report to the IUCN and CITES at the Fifth Conference of the Parties, April 1985. Unpublished, 9 pp.
- Norris, T. 1969. Ceylon sloth bear. Animals 12:300-303.
- Prater, S. H. 1980. The book of Indian animals, third edition. Bombay Natural History Society, Bombay, 324 pp.
- Rice, C. G. 1987. The ecology, behavior and conservation of the sloth bear: a proposed field study. Res. proposal. Unpublished, 5 pp.
- Roberts, T. 1977. The mammals of Pakistan. Ernst. Benn. Ltd., London, 361 pp.
- Seshamani, G. and K. Satyanarayan. 1997. Dancing bears of India. WSPA, U.K., 95 p.
- Singh, R., K. Satyanarayan, and G. Seshamani. 2006. Dancing bears of India. Funded by International Animal Rescue, U.K., One Voice France, and Free the Bear Foundation, Australia, 102 p.
- Singh, R. 2006. Trade in bear gall bladder and bear bile in Uttaranchal state. Wildlife S O S Report, funded by One Voice France, 132 p.
- Singh, R. 2007. Asiatic black bear: Conflict and its management in Jammu and Kashmir. Wildlife S O S report, funded by One Voice France and International Animal Rescue, 31 p.

BEAR PARTS TRADE IN VIETNAM AND MEASURES FOR ITS CONTROL

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Abstract: Bear parts such as gallbladders, paws, bones and teeth are widely trade and used in Vietnam for food and traditional medicines. About 4000 bears are kept illegally in captivity for bile extraction. Trade of bear parts occurs within Vietnam and extends to neighbouring countries. Bear parts for the trade come from Vietnam, Laos and Cambodia, and are illegally exported to China and other countries.

Bears are protected by law in Vietnam. Vietnam's government has also adopted a National Action Plan to Strengthen Control of Trade in Wild Fauna and Flora to 2010. Bile extraction from illegal captive bears is banned and all bears in captivity have received implanted microchips to monitor their existence and prevent addition or replacement by newly captured individuals.

Control of the bear parts trade in Vietnam is not effective because of poor enforcement capacity and low public awareness. In order to strengthen control of the bear parts trade, urgent actions are recommended:

- Strengthen law enforcement to combat bear hunting, trade, and use by increasing the capacity of enforcement forces through providing them with relevant equipment, expertise, training, and application of relevant incentives and punishments.
- Develop a nationwide campaign to stop use of bear parts and derivatives, and request that restaurants and pharmaceutical shops not advertise for or trade in bear parts and derivatives.
- Strengthen education to increase public awareness of the urgency of bear conservation and enhance knowledge of national legislation regarding bear conservation.

ILLEGAL TRADE OF BEAR PARTS TRADE IN VIETNAM

Two species of bears inhabit Vietnam: Asiatic Black Bears *Ursus thibethanus* and Malayan Sun Bears *Ursus malayanus*. Before 1970, both species were common in most of Vietnam's forested provinces. Their present distribution, however, has shrunk and fragmented significantly. Vietnamese bear numbers have also been in serious decline. The main reasons for the reduction of Vietnam's bear population are illegal hunting and habitat loss (Dang, 2006).

Bears are hunted extensively in Vietnam for meat, bear bile, traditional medicine, and trade. Bear parts such as gallbladders, paws, bones and teeth are widely traded and used in Vietnam for food and drinks, traditional medicines, and decoration. Such parts are traded both within Vietnam and through neighbouring countries. Internationally, bear parts may enter Vietnam from the Lao PDR and Cambodia, and are often then illegally exported, mainly to China. Ironically, some bear derivatives illegally produced in China also appear in the Vietnamese market (Robinson, 2006).

Many Vietnamese consider bear gall to be a powerful medicine for the treatment of cholera, epilepsy, bone pain, ecchymosis, and other ailments. Bears are also widely used to produce bear balm, a jam-like material produced through three to four days of boiling bear bones or whole carcasses. Bear balm is used for treatment of rheumatism and for general health improvement (Vo Van Chi, 1999). Some of the bear balm found in Vietnam's market is illegally imported from China (Nguyen Xuan Dang pers.obs.). Bear paws have no specific value in traditional Vietnamese belief, but are now widely used as a health tonic by steeping them in liquor for six months. This use may have been imported recently from other countries.

About 4000 bears are now kept illegally in captivity in Vietnam for bile extraction, including 3598 Asiatic Black Bears, 185 Malayan Sun Bears, and 229 bears of unknown species (VFPD 2005). These bears are hosted by households and kept in small metal cages that are about 1.5 m wide, 2.0 m long, and 1.5 m high. Bile is extracted every two to three months (subject to bear owners' decisions) using a long-needle syringe with the help of ultrasonic equipment to locate the gallbladder. Because of poor rearing conditions and excessive bile extraction, most captive bears cannot survive more than 4–5 years of exploitation, after which owners have to buy new bears caught from the wild to replace them.

Prices for bears and bear parts are extremely high in comparison with the average monthly income of rural households (about USD20–50). There is thus a strong incentive for poor people to hunt bears for sale (**Table 1**).

Table 1. Prices of Some Bear Parts in Vietnamese Markets

Bear part	Price in VND	Converted into USD
Live bear (2003)	16 – 24 million/animal	1,100 – 1,600 /animal
Bear balm (1999)	900,000 VND/100g	90 USD/kg
Bear paw (2003)	400,000 VND/kg	33.3 USD/kg
Gallbladder with bile (1999)	2,8 million VND/piece	280-500* USD/piece
Extracted bile (2003)	70,000 – 80,000 VND/ cm ³	5.8-6.7 USD/cm ³

Source: SRNC 1999, 2003; *Robinson, 2006

CONTROL OF THE BEAR PART TRADE IN VIETNAM

Bear hunting and use have been banned in Vietnam since 1992 by *Government Decree No. 18/HDBT*, and now also by *Governmental Decree No 32/2006/ND-CP*, dated March 30, 2006. However, because of low enforcement capacity (forest rangers, market inspectors, border customs, etc.) bears continue to be hunted for use and trade.

To enhance enforcement efforts, in 2004 the Vietnamese government adopted a National Action Plan to Strengthen Control of Trade in Wild Fauna and Flora to 2010 (Vietnam SR., 2004). The plan identifies 15 actions whose implementation is needed to gain effective control of wildlife trade in Vietnam. These include:

- Increase the responsibilities of governmental agencies and organizations;
- Increase awareness among businessmen, producers and consumers on wildlife products;
- Increase public awareness education;
- Revise wildlife legislation and related policy; and sharpen enforcement skills;
- Increase the capacity of national CITES authorities;
- Increase the nation's capacity for wildlife rescue and replacement;
- Adopt appropriate regulations and techniques for captive breeding and plant propagation;
- Study the possibility of producing artificial products as replacements for wildlife products (bear bile, etc.);
- Develop measures for effective management of wildlife trade markets.

A number of training courses on CITES implementation and control of wildlife trade have been offered to enforcement officers (forest rangers, police, customs and market inspectors) to increase their inspection and enforcement skills. The World Society for the Protection of Animals (WSPA) and TRAFFIC-South East Asia provide important support for these activities (**Figure 1**).

Figure 1. Training Course on CITES Implementation for Vietnamese Customs Staff *



Photo: Dao Ngoc Van – TRAFFIC South East Asia

* Jointly organized by Vietnam's Ministry of Agriculture and Rural Development (MARD) and TRAFFIC South East Asia, March 2006.

To control the illegal housing of bears for bile extraction, in 2005 all known illegal captive bears received implanted microchips to monitor their presence and prevent their replacement with newly captured individuals (**Figure 2**). This initiative received financial support from the Vietnamese government and WSPA. Bear keepers are now required to keep bears until their deaths, and are prohibited from extracting bile, replacing existing bears, or adding new ones. Local forest protection departments are responsible for monitoring this process. If owners wish to dispose of their bears, the government has offered to arrange for the transfer of unwanted bears to an appropriate captive facility (**Figure 3**). To prepare for this circumstance, Vietnam has planned to build more wildlife rescue centers, and several International NGOs such as Animals Asia Foundation (AAF) are willing to help. A program for monitoring post-implanted bear has been initiated with support from WSPA.

Figure 2. Microchip Implantation of Captive Bears for Bear Housing Control



Photo: Mr. Quan (FPD, Vietnam)

Figure 3. Confiscated Bears at Soc Son Hanoi Wildlife Rescue Centre, 2005

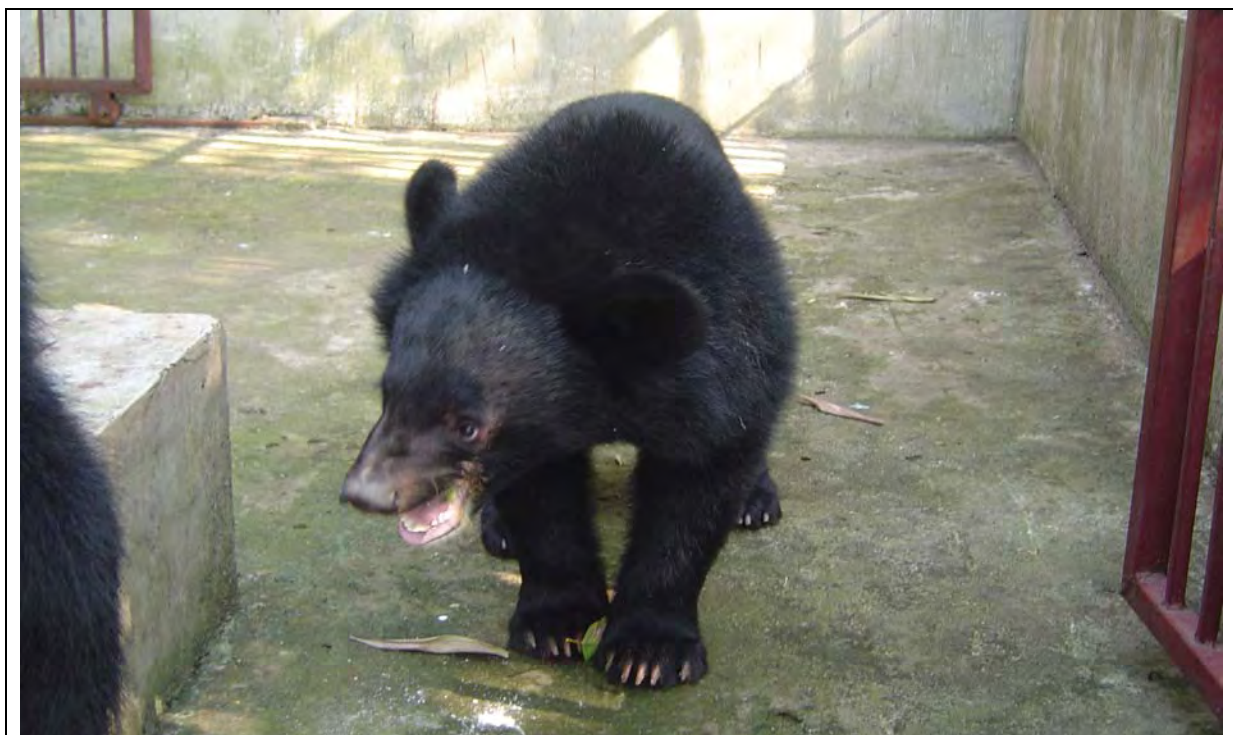


Photo: Ngo Xuan Tuong (IEBR)

RECOMMENDATIONS

To strengthen control of the bear part trade, all actions mentioned in the National Action Plan must be implemented as soon as possible, especially the following activities:

- Strengthening law enforcement to combat bear hunting, trade and use by increasing enforcement capacity through provision of relevant equipment, expertise, training, application of relevant incentives, and enhancement of the punishment system for violators;
- Developing a nationwide campaign against use of bear parts and derivatives;
- Stopping restaurants and pharmaceutical shops from advertising for or trading bear parts and derivatives;
- Strengthening education to increase public awareness of the urgency of bear conservation and knowledge about national bear conservation legislation;
- Carrying out research on the impacts and efficacy of bear bile and bear paws on human health, and on alternatives to them;
- Increasing international cooperation on control of the bear part trade, especially trans-border trade, with an emphasis on capacity-building.

REFERENCES

- Dang, N. X. 2006. The current status and conservation of bears in Vietnam. *In* Understanding Asian bears to secure their future. Japan Bear Network, Ibaraki, Japan, p. 61-66.
- Robinson J., G. Cochrane, and K. Loeffler. 2006. Discussion regarding the impacts of bear bile farming on wild bears in China and Vietnam. Report of Animals Asia Foundation in the 4-th International Symposium on Trade in bear parts, Nagano, Japan, 4 October 2006.
- SFNC. 1999. Report of analysis of trade in wild animals in Pumat NR. TRAFFIC Southeast Asia, SFNC: ALA/VIE/94/24, 45pp. (unpublished).
- SFNC. 2003. Hunting and trade in wild animals. Investigation of status of exploitation and trade in wild animals in Pumat National Park. SFNC: ALA/VIE/94/24, Vinh City, Nghe An, Vietnam, 165pp (unpublished).
- VFPD - Vietnam Forest Protection Department. 2005. Report on implementation of regulation for management of captive bears, 5 April 2004. (Cuc Kiem lam, Bo NN va PTNT: Bao cao thuc hien qui che quan ly gau nuoi, ngay 5/4/2004). (in Vietnamese).
- Vietnam S.R. 2003. Management strategy of protected areas in Vietnam until 2010, Hanoi, Vietnam, 103 pp.
- Vo Van Chi. 1999. Medicinal animals and minerals in Vietnam. Ho Chi Minh Publishing House, p. 167-170. (Dong vat va khoang vat lam thuoc o Vietnam. Nxb TP Ho Chi Minh: 167-170 (in Vietnamese)).

DISCUSSION REGARDING THE IMPACTS OF BEAR BILE FARMING ON WILD BEARS IN CHINA AND VIETNAM

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Abstract: The Animals Asia Foundation (AAF) is a non-governmental organization whose primary mission is to end the practice of farming bears for bile extraction in China and Vietnam (www.animalsasia.org).

Until 2005, the official number of bear farms China was 247, holding 7002 bears (predominantly Asiatic Black Bears). In January 2006, the Forestry Administration announced that there were 68 farms holding the same 7002 bears. In Vietnam, bear farming was outlawed in 1992, although the illegal practice was allowed to continue. The number of bears illicitly used for bile extraction rose from a few hundred to an estimated 4000 today. Evidence suggests that the majority of these bears are from the wild, as most are missing limbs as a result of being caught in snares or leg-hold traps. Fewer than 100 Asiatic Black Bears are thought to be found in the wild in Vietnam today.

Since 1993, AAF team members have conducted overt and covert investigations of more than 30 bear farms across Asia, and continue to research the industry through interviews with government officials, traditional medicine practitioners, stakeholders in the trade, and bear farmers themselves. This research suggests a sizeable illegal domestic and international trade in live bears, bear parts, and bile and bile products. Despite claims to the contrary, evidence from numerous sources suggests that bear farming has done anything but protect wild bears. Since opening a rescue center in October 2000, AAF personnel have spent thousands of hours performing surgeries and collating evidence from over 200 rescued bears that have been released from bear farms in China—many of which have clearly been caught in the wild.

Today, there exists a highly lucrative market for bear bile, including bile from wild-caught bears. Despite the existence of laws authorizing only domestic trade, there is substantial evidence that both medicines and parts from Asian bear species are finding their way into illegal markets across the world. With the commercial production of bear bile, the market has become flooded; transforming bear bile from an “essential” component of traditional medicine to one that is now found in non-essential products such as shampoos, wine, face packs and soda.

Ultimately, there remains a compelling argument for ending bear farming, based upon the ethical and humane considerations of animals confined and compromised in both physical and mental health, for a substance that is so easily and cheaply replaced by herbs and synthetics.

INTRODUCTION

This paper discusses the impacts of bear bile farming on wild bears in China and Vietnam. It further highlights the inhumanity of the practice on the grounds that it severely and unavoidably compromises the physical and psychological health of wild-caught and captive-bred bears on bile farms.

Our observations are based on more than a decade of research that includes countless interviews and meetings with bear farmers, Chinese officials, practitioners of Traditional Chinese Medicine (TCM) and vendors dealing in bear parts; lectures and discussions at conferences; and thousands of hours of working with the bears that arrive at the Animals Asia Foundation’s (AAF) Bear Centre from Chinese bear bile farms. We have also visited more than 50 bear farms throughout

China, Vietnam and South Korea. More than half of these visits were in response to official invitations from the respective governments.

An important finding of our investigations is the severe shortage of high-quality scientific data about wild bear populations in Asia. The Chinese government first adopted the Korean practice of bear bile farming in the 1980s, with the argument that it would protect wild Asiatic Black Bears by satisfying the market for bile with farmed products. The lack of reliable data on the population or distribution of Asiatic black bears in China, however, makes it difficult to evaluate whether bear farming meets the goal of preserving wild populations.

Population estimates reported in the past have suffered from inadequate methodology and great variations in results, and have therefore been unreliable. As Dr. David Garshelis, Co-chair of the IUCN Bear Specialist Group, noted in a letter to the China Daily at the beginning of 2006: “The truth is that we do not know whether bear farming saves any wild bears. We know that huge surpluses of farmed bile are produced; yet we also know that poaching of wild bears continues because wild bile is more valuable than farmed bile. The truth is that nobody really knows how many wild bears live in China, nor how many are being poached every year.”

OVERVIEW OF BEAR BILE FARMING IN CHINA AND VIETNAM

Bear bile farming is legal in China. Regulations state that only Asiatic black bears *Ursus thibetanus* may be used, but Brown Bears *Ursus arctos* are illegally kept on bear farms as well, particularly in the northeastern provinces. The official figures on the number of bear farms and bears in China were, until 2005, 247 farms holding 7002 bears. In January 2006, Wang Wei, Deputy Director-General of China’s Department of Wildlife Conservation, said that China had closed most of its bear farms and now keeps about 7000 bears in 68 licensed farms that meet new standards.

Despite a recent trend which has seen the consolidation of bear farms, the new figures are difficult to understand. Just two years ago, an official in Jilin Province reported to AAF investigators that the province’s Yien Bien district alone had at least 70 bear farms containing more than 2100 bears—with only 11 farms actually owning a license. Information obtained by AAF this year found that the number of bears on a farm range from two or three to 3000 or more. As indicated in the statement from the official in Jilin, the government figures also do not take into account the many unlicensed bear bile production units.

In Vietnam, bear farming was outlawed in 1992. Loopholes in the law and a lack of enforcement of regulations have allowed the number of bears illicitly used for bile extraction to rise to a current estimate of approximately 4000. These are primarily Asiatic Black Bears and Malayan Sun Bears *Helarctos malayanus*.

POACHING FOR THE BEAR BILE MARKET

As emphasized earlier, we need data from well-conducted scientific studies to determine the effects of the bear bile industry on wild bear populations in China and other Asian countries. There is ample circumstantial and anecdotal evidence, however, that bears are poached for their gallbladders and other parts, and for live capture to stock farms.

For example, a bear farmer in Sichuan Province admitted to AAF personnel in May 2006 that he and several other farmers pay rural villagers to trap approximately twelve wild cubs per year, which are then used to supplement his stock on the farm. AAF investigators also found that the town

of Ruili, located in Yunnan Province and bordering Burma, appears to be an important trading post for the illegal wildlife trade. Bears from Burma and Laos are smuggled into Ruili to supplement stock on the large bear farms in Yunnan.

Perhaps most significant of all is that, of the 205 bears which AAF has rescued so far, at least 20% are estimated to have been caught in the wild, as evidenced by trap injuries such as limb mutilations, amputations and scars, and by behavioural characteristics that are distinct from those of captive-bred bears. Our age estimates suggest that nearly all of these bears have been caught since 1989 when the Chinese government banned the removal of bears from the wild by hunting or live capture.

In Vietnam, both the government and NGOs agree that the majority of the estimated 4000 bears on farms have been wild-caught. Most of the eight bear farmers visited by AAF in Ha Tay Province in September 2006 admitted that all of their bears had come from the wild in Laos. Extensive AAF investigations in Vietnam have found not a single bear farm that breeds cubs, which means that all the stock for these farms must originate in the wild. The wild bear population in Vietnam is believed to be less than 100.

Laws in both China and Vietnam forbid the trade in any bear parts other than the domestic Chinese sale of farmed bear bile products. Nonetheless, in addition to the trade in live bears for bear farms, AAF and others have documented the illegal trade in parts from slaughtered bears, such as whole gallbladders, meat, paws, bile juice, bile powder and other bile products.

For example, bear meat is frequently served in restaurants in rural areas of China. In May 2006 the owner of a bear farm in Sichuan Province told AAF personnel that his restaurant at the site of the farm served bear meat and paws. Bear paw soup is also often available in restaurants associated with bear farms. A customer has only to give a half hour's notice to order the dish. A retailer of TCM products in southwestern China also stated that bear fat soaked in wine offered for sale in his pharmacy, which he termed "bear fat bones", had come from bear farms.

One owner of a TCM shop interviewed by AAF staff in Hanoi in September 2006 showed us the intact gallbladder of a bear "from the forest" for which he was asking USD500. He also presented part of a gallbladder that he maintained had originated from a wild brown bear in Russia. Some years ago I was offered the frozen hind leg of a bear cub at a restaurant in the Central Highlands of Vietnam and shown a picture of two slaughtered cubs with their gallbladders on a plate.

The enormous increase in the availability of bile from bear farming appears to have created a two-tier economic effect that spurs a higher demand for, and increased value of, wild bear gall. As a result, the economics of the illegal trade in bears and bear parts present a temptation that is too great to resist, particularly for rural people with very little income. A report in Education for Nature Vietnam (ENV) in October 2005 quoted a poacher who said that the cash from a wild bear trapped in the forest provides him income for one year: "Thus hunters rush to trap bears in forests rumoured to have bear populations." This is also the case in China, where the sale of a bear's parts can bring the equivalent of two years income to an average peasant family. People who live in areas where there are wild bears feel that enforcement of anti-poaching laws is unlikely, and that the punishment for poaching is insufficient to deter other poachers or repeat offences.

Clearly, the only way to discourage poaching is to decrease the demand for bear bile. This could be achieved by utilizing the surplus (that is theoretically available according to government figures¹) in the short-term, in conjunction with phasing out the production of farmed bile, prohibiting the trade of all bear products in China, Vietnam and elsewhere, and expanding public education initiatives to inform consumers that the use of bear bile for TCM or anything else is unethical, illegal and unnecessary. The irony is that the use of bear bile, with great respect to TCM, is entirely unnecessary.

Experienced and highly-respected practitioners of TCM in China remind us that there are more than 50 herbal products in the TCM pharmacopoeia that are indicated for the treatment of conditions for which bear bile is just one—and often not the best—alternative. Moreover, these physicians agree that bile produced on a bear farm is tainted, as it violates the fundamental principles of harmony with nature on which TCM is based. Natural harmony is destroyed when the bears suffer physical and mental illness from being used as machines, and by the pus and other potentially toxic substances extracted from the gallbladders of sick and suffering bears.

INTERNATIONAL TRADE OF BEAR BILE

As noted, China's official figures indicate that the country's bear farms produce some 3000 kg of surplus bile each year. Export of bear bile is illegal under CITES, to which China subscribes, but investigations by AAF and other organizations (e.g. TRAFFIC, WSPA, and their member societies) indicate that Chinese bear bile finds a strong market outside of the country. We have many examples that support this conclusion, including:

- AAF's recent discovery of bear bile products in TCM shops in Hanoi which originated from Chinese bear farms.
- In the farms of Yien Bien in Jilin Province, bear bile is bought by citizens of South Korea in small packages to take home as "personal gifts" for relatives and friends. Many South Koreans originated from Yien Bien and the gift of bear bile from a region where bear farming is thought to have begun is accepted as a special tribute to friends. However, to disguise the fact that bear bile is being illegally brought into South Korea, many of the products have no label. Customs officials are therefore unable to prove their contents, and believe the importers who insist that they are pig bile products instead.
- Bear bile products for sale in the northeast border provinces often have labels printed in Korean and Japanese characters, which indicate the target consumer. AAF's investigator also learned of bear bile leaving China in the luggage of Indonesian football players, who buy the products from Yunnan Province and take them home.
- It was only a few years ago that reports from both AAF and TRAFFIC identified bear bile for sale in the departure lounges of international airports in China (Sichuan and Shanghai). These products had only one way to go—as an illegal component of international export and trade.

¹ According to the statement of China CITES Representative Dr. Fan Zhiyong at TRAFFIC's Third International Symposium on the Trade in Bear Parts in 1999, approximately 7000 kg of bile is produced annually in China, of which only 4000 kg is consumed by the domestic market. Therefore, a surplus of 3000 kg of bile accumulates each year. Since 1999 this amounts to a stockpile of 21 000 kg of bile, which would satisfy domestic demand for the next five years.

- In September 2006, Animals Asia observed illegal bear bile products in Vietnamese pharmacies that originated not only from Vietnam, but also from China—primarily Sichuan Province. According to one trader, Vietnamese agents travel into China, buy the bile from the farms and shops there, and import it into Vietnam. These are regular and recent shipments; indeed one box we saw identified the bile as having been produced in May 2006, with an expiration date of April 2009.
- Somewhat ironically, imported bear bile products may be found in China as well. AAF's investigator found packaged bear bile powder imported from Burma. The label stated in Chinese and Burmese that the can contained three grammes for RMB60, and that the powder was from a biological research center in Burma.

THE EFFECTS OF BILE EXTRACTION ON BEARS

As an organization dedicated to animal welfare and the only group rescuing previously farmed bears, AAF must emphasize the inhumane and unprofessional management of licensed and fully sanctioned bear farms in China which keep both wild-caught and captive-bred bears.

Bears on bile farms are deprived of food, water and movement; suffer chronic pain, illness, and abuse; and live with a catheter or hole in their abdomen or have their gallbladders repeatedly punctured. Again, AAF makes these observations on the basis of more than ten years of data.

Chinese regulations state that bears are to be given space to move about at all times except for the brief period every day when they are in cages for bile extraction. Inspection of the outdoor enclosures on farms reveals, however, that they are rarely, if ever, utilized, and that many bears spend their entire lives in the "extraction cages" and are never let out. Bear farmers in Heilongjiang Province openly state to visitors that they keep the bears in the cages because they are much easier to manage that way. The bears are also not allowed into the enclosures, they said, because of the risk of infection in the fistula.

The only method for bile extraction that currently meets regulations is the so-called "free-dripping" method. This method was first detailed by Dr. Fan Zhiyong, China's CITES Representative, at TRAFFIC's Third International Symposium on the Trade in Bear Parts in October 1999. Dr. Fan maintained: "A new technique to make fistula for bears was developed by technicians in 1989, under which bears may not suffer from the use of rubber tubes any more because the fistula is made of materials taken from their own bodies. The opening of the gallbladder fistula is similar to the anus and can be blocked by muscle contraction."

Some have interpreted such industry statements as being deliberately misleading as farmers are known to invent new methods of bile extraction in order to convince the Government that the industry is humane. It apparently demonstrates a lack of medical understanding and the violation of ethical principles necessary to maintain the bear farming industry. More importantly, it goes against what bear farmers experience (and tell unofficial visitors), namely that the fistulas constantly develop infections and become plugged by tissue trying to heal the wound. The following cases represent typical findings in bears from licensed bear farms. Our data and observations establish beyond any doubt that the free-dripping fistula is just as damaging to the health and well-being of the bear as the other bile extraction methods.

Fourex was a bear we had to euthanize shortly after her arrival at our Rescue Centre in January 2005 because of the untreatable and extensive nature of her injuries and illness. Life on a

bear farm had left her with a crushed and badly infected front paw, a partially amputated hind paw that had been snared, a fractured jaw, a canine tooth which punctured through the jaw bone, shattered teeth, a free-dripping fistula that leaked pus and bile, skin abscesses surrounding grossly inappropriate suture material, anaemia, and, finally, bile peritonitis caused by bile having leaked into the abdominal cavity from a badly-constructed gallbladder fistula. Had Fourex remained on the bear farm, the peritonitis would have killed her after a long and very painful illness.

One of the many problems with the free-dripping fistula technique is that the opening continually tries to heal over, which makes it difficult for the farmer to extract bile. In 2005, AAF began to see a new type of fistulation that farmers are using to prevent this problem while circumventing the regulations. The farmer inserts a short Perspex catheter into the free-drip hole and gallbladder and cuts the tube flush with the surface of the abdomen just beneath the skin. Unless the bears with this method of fistulation are closely inspected, the clear plastic catheter is all but invisible and the hole in the bear's abdomen looks like a regulation free-dripping fistula.

Hope was a wild-caught bear who came to us in January 2005, typically thin and terrified of people, she had a snare wound around her neck and the joints of her limbs were stiff from disuse. A large mass measuring four centimetres in diameter and 10 cm in length, and filled with pockets of pus was found in Hope's abdomen. The mass was firmly attached to the surrounding tissues and to three lobes of her liver. A highly abnormal gallbladder was found in the center of this mass and contained a catheter of solid plastic, five centimetres long, held in place by crude cotton string and two wire flanges that had penetrated one lobe of her liver and was anchored into the surrounding flesh. Hope also had peritonitis. We euthanized Hope on the surgery table after it became obvious that, like Fourex, she would not recover. Peritonitis and cancer of the bile duct system are the two primary causes of death in bears that arrive from bile farms.

The manufacture of no other product consumed by humankind requires an animal to undergo major surgery, and then to live with permanent open wounds from that surgery, let alone under conditions of such cruelty as are found on bear bile farms.

Every gallbladder that AAF veterinarians have removed from bile farm bears shows evidence of severe and long-term disease, regardless of the method of bile extraction that has been used. Our research has shown that the free-dripping technique results in no less damage to the gallbladder and the surrounding tissues than other techniques. Also, 37% of deaths of fistulated bears at the AAF Bear Centre are due to cancer in the bile duct system. This is an extraordinary rate, and AAF's veterinarians hypothesize that the etiology of the cancer is related to the chronic inflammation, infection and trauma caused by bile extraction. Research is underway to investigate this hypothesis. What it does to people who consume bile from bears that are so ill, and that is so often mixed with pus, is unknown.

Beijing's State Forestry Director, Wang Wei, was quoted in the UK's "The Times" in January of 1996: "We have introduced painless practices for extracting bear bile. Until we can find a good substitute we cannot accept the EU [European Union] resolution that urges the elimination of bear farming."

Our research establishes that modern methods of bile extraction clearly cause pain and suffering, and that husbandry practices on bear farms continue to violate every principle of humane care of animals. We are preparing the publication of a comprehensive veterinary report that outlines the medical evidence for this argument in detail.

Moreover, the regulations for the care of bears on Chinese bile farms are substandard and, such as they are, are not enforced. Visits to farms in Jilin in November of 2005 revealed that, despite the farmers' claims of "humane raising", the bears on the farms wore metal jackets and were fistulated

with outdated latex catheters. Some of the largest farms in the country that were visited by AAF staff in 2006 flaunt regulations in the same way.

There is at least some glimmer of hope for the recovery of bear populations in Vietnam, since the government is now showing its willingness to enforce the laws which make bear farming illegal. However, no real willingness presents itself in China, where more than 25 years of legal bear farming has still failed to prove that the industry prevents poaching. Moreover, all considerations of ethics, wildlife conservation, veterinary medicine and, ultimately, economics, lead to the conclusion that bear bile farming is an unacceptable practice and must end.

AAF would like to offer our sincere gratitude and thanks to the China Wildlife Conservation Department in Beijing and the Sichuan Forestry Department in Chengdu for their invaluable help and assistance since October 2000 in rescuing 205 previously farmed bears, and in the development of the “Sichuan, Long Qiao Black Bear Rescue Centre” in Chengdu. We would also like to sincerely thank the Central Forest Protection Department in Hanoi and the Ministry of Agriculture and Rural Development for their kind assistance in the ongoing development of our new Bear Rescue Sanctuary in Vietnam.

III. DISCUSSION AND RECOMMENDATIONS

Editor's Note: The following is an edited version of transcripts from the symposium discussion sessions. It includes both the open discussion among all symposium participants and the second session that focused specifically on developing recommendations for follow up actions. Unfortunately, some speakers did not identify themselves, so the person making the remarks is not always clear. This summary has not been reviewed by all persons cited within.

FIRST SESSION: OPEN DISCUSSION

Doug Williamson, Facilitator: The topic of today's discussion session is: What do we know about trade in Asian bear species that may reflect upon what is happening with wild bear populations? This morning we handed out an admittedly unscientific questionnaire asking participants about their personal experiences and impressions regarding illegal bear trade. The goal was to find out how many of you have encountered problems with illegal trade or killing of bears, how it might have affected your work, and how you rate combating illegal trade as a priority in bear conservation projects in which you may be involved. We received 24 responses from participants representing a range of different government agencies and offices (wildlife, forestry, etc.), NGOs, researchers, and people otherwise involved in wildlife trade.

The first question we asked was: "In your work, have you encountered illegal hunting and trade of bears?" Twenty-one of you said "yes" and three said "no". Almost all the people who identified themselves as field researchers said "yes". The second question was: "Do you collect/record information on bear trade/illegal hunting?" Seventeen responses said "yes" and seven said "no". Third, based on a scale of "low", "medium", "high", or "not at all", we asked: "How does illegal hunting/trade impact upon your work?" The response to that question was interesting—10 respondents said high, eight said medium, four said low, and only two said not at all. The fourth and final question we asked, based on that same scale, was: "Where do you think that work on bear trade and hunting in Asia should rank as a priority?" We received 21 responses saying it should be a high priority, two saying it should be a medium priority, and one saying it is not a priority.

Again, I realize that this was not a scientific survey, but it does reflect a few basic facts regarding the experience of participants here on the importance of the subject. It tells us that a number of you, especially those working in the field, have personal experience with the issues of illegal hunting and trade. It tells us that this is an issue that a number of you are collecting information about. It tells us that a majority of the respondents believe that illegal hunting and trade are impacting your conservation efforts. And it tells us that almost all of those who participated in the questionnaire believe that addressing the issues of hunting and trade of bears in Asia is a priority issue.

The discussion this afternoon will address what we know about the actual impacts of trade on wild bear populations, and what do we not know. Also, given that there are things we do not know, what do we need to know? My first question to the panel is: Do the results of the questionnaire reflect actual knowledge of what is going on out there, or is it just a reflective of a sample of people here who are interested in bear conservation?

Chris Shepherd, TRAFFIC Southeast Asia: I think that we largely don't know what is going on, but it would be a good idea if we could try to figure out what we do know. From that, perhaps we can identify the major gaps in our knowledge. For example, on the question of whether we know the populations of Asian bear species, I think that maybe we do in certain localities. Perhaps we could go through each country and see where we have knowledge about wild populations or the impact of trade, and where those bits and pieces of knowledge might be. There are three regions represented here: East Asia, South Asia and Southeast Asia, with probably more than 20 countries represented. We

don't want to spend too much time on any one, but it would be extremely helpful to figure out what we do know.

Let's start with South Asia. What do we know about wild bear populations in India? To measure this, do we have good knowledge? Medium knowledge? A little bit? Or do we just have no idea?

Dr. Brij Kishor Gupta, Indian ministry of Environment and forests: Regarding wild populations of the four bear species in India, there is a lot of work ongoing through the Wildlife Institute. Two of the experts and their team members are here, Dr. Satyanarayan and Dr. M. P. S. Chauhan. For many years, they have been doing intensive field service on three species in particular—the Asiatic Black Bear, the Sloth Bear, and the Brown Bear. I have learned that they have also started survey work for the sun bear northeastern India. In a report submitted to us the day before yesterday on the status of Asian bears, they provided some details on those populations. Several PhD students have also done work on the subject. I'll request Dr. Sathya Kumar and Dr. Chauhan to shed more light and details on that work.

Dr. Sathya Kumar, Wildlife Institute of India: We have a population estimate for wild Himalayan brown bears in India of 500 to 750. For Asiatic Black Bears, we have an estimate of 6750 to 9000. This is based on GIS modeling looking at potential habitat range, and also at mean densities that may occur in the wild. I will pass the microphone to Dr. Chauhan for Sloth Bears estimates.

Dave Garshelis, Minnesota DNR and IUCN/SSC Bear Specialist Group: Can I add something? First, I guess I would probably disagree that you know the actual number of bears that closely. Nevertheless, the actual number of bears is not particularly important for this conversation. What is important is the population trend. If all you have is "500 to 750", and we don't know whether that number has gone down by 20% in the last 10 years, or it's stable or increasing, basically we don't have anything. We just have a number. For example, if we said there are X number of people in Japan, what does that number mean and how is a certain disease affecting it? You have to know the trend. So I think all comments should be about population trends, not numbers. I don't think the numbers mean anything.

Dr. Sathya Kumar: I would like to respond. We only started this kind of monitoring in 1995, so that is the baseline. For Brown Bears, we don't know of any trend between 1995 and 2005. But for black bears, there is a decline all over its range, based on personal surveys, field surveys, knowledge we have on its potential range in the area, and reports from field managers in different national parks and sanctuaries. Between 1995 and 2005, they have reported a decline throughout the range of Asiatic Black Bears. But for Brown Bears, the information we have is too little to talk of a trend.

Dr. Chauhan, Wildlife Institute of India: Regarding Sloth and Sun Bears, in India we have been doing a systematic survey of sloth bear populations, both within and outside of protected areas. We are also trying to learn about trade regarding these populations. As for the population of Sloth Bears within protected areas, the population (estimate again) is around 8000 to 10 000. If you also take into account the population outside protected areas, the total (again it is a rough estimate) comes to around 18 000 to 20 000. The topic of discussion is how much the Sloth Bear or other bear species are being exploited, and what is the impact on wild populations. In fact, what has been presented here is just a fraction of the information we have, not only in India also in other countries. If we really want to know the impacts on wild populations, and the levels of exploitation for different bear species, we have to work systematically in different countries. My colleague, Dr. Gupta, presented the threats posed by poaching and removal by the Qalandars; that is one very serious threat. In central India, another problem is exploitation of Sloth Bears for the aphrodisiac value of the parts. We do not know the level of illegal exploitation for that purpose. The same is true for other species such as Himalayan brown bears and Asiatic Black Bears. Through my students and visits to the field I know of a number

of cases of poaching, and have seen skins and body parts with people who are directly or indirectly involved with this kind of activity, but we have no precise estimates. We are collecting this kind of information.

As far as the sun bear is concerned, we do not know the exact population level. We have recently started work on the question, but had previously considered the sun bear gone from India. But we have found sun bears in one state—Manipur—and have done some distribution surveys. We cannot yet determine a population estimate. We have also started systematic surveys in other states where we are getting information about its presence. It will take time to give you estimates.

Doug Williamson: If I could suggest that if we want to keep doing this, although it is very interesting information, Chris is not asking for so much detail. The question he is asking is simply: “How much confidence do people have in the accuracy of their information about how bear hunting, poaching, and trade in parts are impacting wild bear populations?” Is there a lot of information? A little bit? If we could keep it at that level, and not go into the detail of populations, we can cover more countries.

Dave Garshelis: I would suggest that there are two pieces of information we are after. One is does anybody know for certain the population trend of any particular population, either in a whole country or some defined area. For example: “I know that such and such population has been declining for the last 10 years, or increasing, or stable.” Second, if anybody knows that the trade in bear parts is having an effect on a particular population is another distinct question. For example: “I know that the population is declining and I know that the decline is due to the trade in bear parts”. Can anybody, either on the panel or in the audience, speak on those questions to any population of Asian bears?

Naim Akhtar, Wildlife Institute of India: I would like to tell you about sloth bear populations in my study area, which I have been counting for the last eight to 10 years. In my previous studies, we had more than 300 bears in my area—not too exciting a total count. Three months ago, there was a 40% reduction in the population because of poaching and habitat destruction. And recently four or five gallbladders were seized from the study area and three persons were arrested. So you can say in this area where bear populations are at a higher risk because of poaching and hunting activities.

Dave Garshelis: What period of time are you talking about?

Naim Akhtar: The first was in 2000, the second in May and June of 2006, so six years.

Dave Garshelis: So a 40% population decline in six years.

Brij Kishor Gupta: If you look at the trend, as I have for India, our captive facilities are receiving an increasing number of bears either rescued or seized from different people, especially young cubs. When I look at the five-year trend in receiving such bears from all over the country, the numbers have increased dramatically. More and more bears have been found in our country, particularly sloth bears and Asiatic Black Bears. There’s a tremendous increase of at least 20–25% in the captive bear population.

Dave Garshelis: I understand that the number of confiscations is increasing. I don’t understand how we know what kind of effect that has had on the population.

Tarendra: One of the reasons for the high number of confiscations of gallbladders and other things is that there is an increase in awareness. Many NGOs and the government are doing public awareness drives, so that’s why the number of cases of illegal trade has increased. In India, we don’t have any practice like bear farming. That means that if there is increase in gallbladders or other parts in the

market, it is coming from killing bears in the wild, whether it is Himalayan black bear, Asiatic Black Bear, or sloth bear. This has to be taken care of.

Doug Williamson: Thank you all for that information on India. Are there other countries for which somebody here could address the two questions Dave asked? Can anybody document a decline, and convincingly document that it is tied to trade?

Nguyen Xuan Dang, Vietnam CITES Scientific Authority: I help the Vietnamese government regarding our country's bear situation. We don't have statistical data comparing the number of bears in the past to now to say anything accurate about the trend of the population. But we have other direct and indirect data and indices to show a decreasing trend of the current bear population in Vietnam. I have done many surveys throughout the country for almost 30 years, and can speak to the range and distribution of bears in the country. I know where they were before, and where they no longer are. Again, I don't have exact numbers, but I know that in areas where there were once bears there now are none, or the numbers are thoroughly reduced compared to 10 or 20 years ago when I did surveys. Also, based on interviews with local people, 100% of the people talked to say that the number of bear now is less than let's say 10 years ago. Based on this kind of information, I can say with confidence that Vietnam's bear population has been reduced. My guess is that the estimate is not less than a 50% reduction.

How many bears are left in the wild in Vietnam? That I cannot say. But based on my experience, I could guess that about 2000 to 5000 bears could still survive. Another thing I want to share is that, fortunately, Vietnam has established a network of protected areas. This is very helpful for bear conservation. I could list the name of protected areas where the bear population may be already stable, because hunting pressures have been almost eliminated. So some bears can live in these protected areas, but we don't know the size of these populations, and don't have real measures to help the population recover. We need more study on this.

What about the impact of trade on Vietnam's bear population? It is obviously very negative because so many bears have been hunted and killed, and not from captive breeding. All these bears have come from the wild. The number of bears is being reduced for two reasons: habitat loss and hunting. I think there is wild habitat range that they can live in, and forests where they have designated habitat. So without hunting, bears can survive in the forests of Vietnam. The incentive for hunting is trade. People in rural areas are very poor. If they kill one bear, they can get a great deal of money. People who live in the forests kill the bears but never use them, because they need money more than meat or medicine. So they sell them, promoting wildlife trade in the country. For now, the most direct threat to the bear population in Vietnam is trade, and trade encourages hunting.

Doug Williamson: As I understood several of the presentations this morning, a lot of the bears moving through Vietnam are coming from Cambodia and Laos. So some of the bears in trade in Vietnam might not be Vietnamese bears, and there might not be much information about the populations in the other countries. I guess a different question to ask the panel is that for countries for which there is not very good information, do we know anything about rates of decline, or how much might be caused by hunting? What kind of information are we going to need to answer those questions?

Dave Garshelis: There are really only two broad categories that cause declines in bear populations, and they are inter-related. It is really hard to separate them. One is habitat loss and the other is direct killing. With direct killing, part of it is for commercial trade in bear parts, and part of it is for subsistence or killing nuisance animals. So what Dang was talking about here is that although we have habitat loss, bears can live in degraded habitat. But the problem is that degraded habitat is near people, and people kill the bears because they are a nuisance, are perceived as a threat, or because

they want to sell the bear or its parts. So the commercial trade in bear parts is one issue having an effect. To answer the question of how you would monitor the effect, I've never been a proponent of the population estimation approach. There might be some situations like Naim talked about where you can go back to a place and get a particular population estimate, but I like what Dang talked about—you talk to people, you do interviews with people, and they say: "I've lived here for 20 or 30 years, and you know, I don't see bears anymore." That's one index. Another is to find people that say: "Back when I was a kid, bears used to live here. Now I'm 60 years old and there are no bears living here. They're gone." It is crude information but I think it is probably reasonably good information on a broad scale.

Doug Williamson: Dave, one other question for you. I understand that you are pulling a project together to do some habitat mapping. Maybe you could talk about how that project fits into the overall scheme of trying to find out where populations are, and how it fits in with some of the other priorities related to trade.

Dave Garshelis: Our project with the Bear Specialist Group is to try to get experts from different countries to map out where bears presently live. The overriding reason to do that is to monitor populations so that we can say: "Okay, here's the best information that we had in 2006." If we come back and try to do this again in 10 years, we can look at where did bears either disappear or increase. Then you can look at those particular areas where they disappeared and say: What happened in those spots? What's the situation? Do we know that it is a hot spot for trade? Do we know that it's a place where habitat has disappeared? What do we know about it? What are the places where bears have increased, or all of a sudden are appearing in new places. What's going on there? What are the good things that we should be promoting regarding bears in those areas? Chris talked in his presentation about trying to map hot spots of places where we know bears are coming into trade. This map should help us put together information for the four species of Asian bears.

Chris Shepherd: I think in order for us to move forward, we need to find out where the bears are and determine their status in those places. Then we can look at a similar map with where the trade hot spots are, what the trends are, and where these bears are being pulled out of. That way we can hopefully be able to prioritize where we should be putting more effort. Perhaps we will find some areas where things are good and we don't really have to do anything but monitor the situation. There may be other places where we urgently need to have some sort of intervention or research carried out. If we can find these priority areas, we will be able to work towards eliminating threats from trade.

John Huchko: I'm going to make a couple of comments about Russia. I'm not an Asiatic black bear expert, but I know that all the Asiatic Black Bears that are in Russia exist in small isolated pockets down in the Promemoria region, which is a small panhandle between the Sea of Japan and China. It is also a fairly recently formed free trade zone between Russia and China so there are a lot of goods and natural resources flowing across that border. In 2004, there was a raid on a shipment of about 2000 bear paws that was stopped entering China. If those were coming from that little pocket down there, and just one shipment was caught, that would have had a devastating effect on the population. If it is coming from the rest of Russia, where there are a quarter million Brown Bears, maybe it's not that alarming. Finding out which is the case will probably be helpful. I don't know if you could do it through genetics or getting samples from those seizures, to try to piece together exactly what is happening and what the flow roots are. I am hopeful that somebody is collecting samples like that, so we can answer some of those questions at least for Russia.

Chris Shepherd: We are recording seizure data for especially in Southeast Asia, and I think in East Asia as well, as part of TRAFFIC's work. When it comes to looking at the genetics, or looking to where these things come from, we haven't gotten into that. I know there's a university in Thailand that is looking at doing that, but don't know how far they've progressed. On the topic of seizure data,

it is difficult to measure trends with seizure data. It is interesting to figure out where things are coming from. But in terms of measuring trends, those of us who work on enforcement know that seizures are an absolute tip of the iceberg. If a shipment gets stopped once a year, you can bet that there were huge amounts that went through. So that one shipment of 800 bear paws—I believe it was only paws and there were 800—could have been one in a 100 that year. Who knows? It would be interesting to be able to start tracing these shipments back. Some of the universities we've been meeting with in Southeast Asia are interested in doing that. We have talked especially about trying to figure out where rhino horns we are finding in Southeast Asia are coming from. Maybe this is something we can look at further regarding bears.

Nobuo Ishii, Tokyo Women's Christian University: interpreted: Listening to the discussion, poaching and illegal trade may not be having an impact on Japan's bear population. I understand that there has been poaching in Japan, but I have never seen data regarding geographic distribution. This may be one area of research that could be of some use. Regarding the Japanese bear population, in my presentation I didn't cite any specific population numbers, but for brown bear it is believed to be several thousand, and for the Japanese black bear about 10 000. That is a very rough estimate. Nobody actually knows how accurate these data are, but the general trend of the population is that there is no data at all indicating a decrease in Japan. Distribution of bears in Japan seems to be expanding. Therefore, the population may be gradually expanding. We know only very rough figures regarding endangered bear populations in different locations, but for some areas we have very specific numbers, like 700 at this location or another location. There is no information that over-hunting for galls is decreasing the population in Japan. If anybody has different information, I am interested to know it. Regarding the habitat discussion, I have researched vegetation in Japan 20 years ago, around 1988, and again in 2000. It hasn't changed at all—there is almost no change in terms of natural forest distribution. And bear habitat is actually improving in Japan, which may reflect why the population of bears may be expanding.

Gabriella Fredriksson: I think there are many countries in Southeast Asia where it should be fairly clear that the situation has not been improving just by looking at the habitat. Japan is probably a country where the habitat is stable and the offtake of bears might not be so high, so maybe the impact isn't great. But I think for many Southeast Asian countries, the habitat loss is extremely high and bears are disappearing because they do not live outside of the forest. There are also signs of trade all over the place which indeed in some cases is very high. I am looking at a little table I have on my computer, which was made for elephants in Southeast Asia, looking at the different countries where elephants occur. It is just a little matrix online looking at the legal frameworks for protecting elephants in the different countries, which implementing agencies should be working on conservation, what resources are available, and the will of those countries to actually do something. The same thing could be done for trade.

Now the table is fairly sad, but let's say India comes out as having a strong will to do things on wildlife conservation; Sri Lanka as well. Then you see the will in Cambodia is very weak; Indonesia is very weak; Malaysia, very weak; Vietnam, very weak for elephants, but maybe things are changing now specifically on bears (this is a table for elephants). But now let's look at just the implementing agencies that will have to do things on trade. Not to be unkind, but Indonesia ranks as very weak; Laos, very weak; Cambodia, very weak. Some countries have very strong frameworks legally; others are quite weak. I think this kind of matrix has probably been done for a variety of species. I guess for tigers it has been done, and for a lot of species that are maybe more threatened than bears.

The question is how much do bears link in with work that is already being carried out for trade on ivory, or trade in tiger body parts, because I don't really see a difference. If you have an improved focus on, for example, tiger trade, how come bears just don't fall into that entire category of looking at confiscations or whatever? And how does the ASIAN-WEN project actually fall into this

framework? They don't have the resources, the manpower, or the will to really do a lot on trade specifically. On the whole issue about numbers and trends, I think there are few countries, certainly not in Southeast Asia, where you could say it's really going great for bears. Whichever way people look at it, this may be an issue of whether you can say how much these countries actually want to maintain their bears. Is it 10%? Is it 20%? I think this is a valid question specifically for countries where bears just live in forests. For example, in Vietnam I don't know how much land is still covered in forest. I think in Thailand it is something like 10%. Maybe they have bears left in that 10% and the other 90% that used to be there 400 years ago are gone. Borneo is about 50% forest-covered but I don't think that that is the plan for the future; Malaysia neither. There will be perhaps another 20% that will certainly disappear in the next 10 years, which means also that the bears living in those forest blocks are not going to move into the last patches. If you just look at these overall frameworks of which countries are actually able to do something, and which countries aren't, how does that affect trade work that is being carried out now, and how can it apply to bears specifically?

Chris Shepherd: Is that one question? I'll try to answer it in pieces. Regarding species as priorities for at least Southeast Asia and probably for some countries Asia-wide, bears are not a priority. Bears rarely come up in meetings. In most work plans and agendas, bears don't usually cut it. The main species of focus in South Asia and Southeast Asia are tiger, elephant, rhino, and sea turtles. Because of an incredibly active Specialist Group, fresh water turtles are becoming a higher priority in Southeast Asia. When we do bear work, it is usually because of enforcement work where bears just happen to be the subject. Or bears are a bi-product of another project, for example, ivory surveys on the Myanmar-Thai border. But bears are hardly a priority, and I think that's safe to say for many different organizations working on conservation issues in the region.

Gabriella Fredriksson: Does it matter? Because if you have a focus on tigers, ivory, or turtle parts, I assume that a lot of the work on trade is being done at the airports; it's being done at border crossings; it would be done around national parks to minimize poaching where you have tigers and elephants. I assume that work covers any endangered or protected species. I mean you are not going to specifically patrol for tigers and not patrol for bear poachers. The same goes if you have a shipment of ivory that is confiscated, or a bag with tiger parts. You are not going to hand over bear parts. It all falls under the same category of improved law enforcement and trade investigations I assume.

Chris Shepherd: Yes and no. In some cases, it does matter. There are certain countries that in the past enacted laws outlawing medicines containing tiger and rhino and protecting those species only because those are the ones that the conservation world and the media made the most noise about. Bear bile and musk continue to be sold. But because tiger and rhino were the focus of campaigns to clean up the illegal medicinal trade, those are the ones that got listed. There is legislation in some countries that says that medicines containing tiger and rhino is illegal, and that's it, even though two species of Southeast Asian bears and some other bear populations are listed on Appendix I along with tiger and rhino. For example, there are cases in the big Pramuka Market in Jakarta, for those of you that are familiar with the wildlife trade scene in Indonesia. You won't find the orangutan for sale in that market anymore, but it's not uncommon to find bear cubs there, even though both are covered by the same legislation and have the same degree of protection in Indonesia. You won't find a tiger openly for sale, but it's easy to find bears or bear parts in Indonesia, and that's because attention has been paid to tigers in Indonesia. Tiger and orangutan are the stars there, and again bears have been left out.

There is a lot of effort to get medicines containing tiger bone out of the markets in Singapore. To my knowledge, there's been only one seizure ever of two small vials of bear bile, which is easy to find in Singapore. It is not easy to find tiger anymore, even though the same legislation protects both tigers and bears. Bears are a low profile animal for enforcement agencies, which unfortunately focus on

what they're being pushed towards. Not all of them, of course, but if the pressure is on them to clean up the tiger trade, the tiger trade gets cleaned up. That's not always happening for bears. You asked something about ASEAN-WEN as well.

Gabriella Fredriksson: The ASEAN-WEN question is about what that project will really do regarding trade of wildlife that would automatically deal with bears?

Chris Shepherd: ASEAN-WEN is a network where all of the countries in Southeast Asia have committed to working together in shutting down wildlife trade. There has been very little discussion in any of the meetings where it's actually come down to a species-focused level yet. It is an agreement that at this time is still at a very high level. A lot of people on the ground in most countries have never heard of it. It is going to take some time to filter down. The idea behind the whole thing is that it tackles all illegal cross-border trade; there is been no mention that ASEAN-WEN is going to clean up the international trade of bears and bear parts specifically. However, the way ASEAN-WEN is being set up, it definitely has the potential to have a huge impact if all of the countries involved are really committed to making it work. That is the same as CITES. CITES is a convention for controlling international trade, and it is only as good as the countries want it to be. If countries are very serious about implementing CITES, it's a pretty good tool. If they're not, then it's a piece of paper. So it really is going to depend on the level of commitment from each country in the WEN.

Gabriella Fredriksson: One small last thing I want to add. A lot of the discussion here has been about whether countries in Asia think that they have a problem with their bears. I think there might be countries, like India or Sri Lanka, where people take their wildlife seriously. They might recognize that there is a problem, and before a population or species disappears, something is done. There are other countries such as Indonesia where I think so little has been done on bears or general knowledge on the subject that there is surprise if there is a discussion at all about bears. I think Malaysia is probably similar. They wouldn't have thought there is a problem, but that is maybe because there is only one person working in the country and he isn't invited on a weekly basis to chat with the head of the Forestry Department about bears. So I think it is a dual thing where a few people in these countries push for an agenda. For instance in Indonesia I think it would be possible to make some progress if you had a couple of discussions with these people and said that bears are really an issue. We don't know numbers, but we know that much forest has disappeared and if you go at the airport they are selling bear claws and stuff. It is really embarrassing. Then maybe they will say: "We should really clean up our act here". Maybe the same could be done for Malaysia. But I think there are quite a few countries where they are just not yet on the agenda. And that comes because the people who work in those countries haven't yet decided whether there is a problem or not, or because it is really difficult to make the point that there might be a problem.

Chris Shepherd: Thanks for that Gabriella, because that's one of the outcomes I at least would like to see. I think probably everybody would. What do we have to do to move forward? If the issue is simply building awareness among relevant government people, then let's move that way. If the issue is more research in certain areas, then we have to figure out where and how. I think that's a good point.

Chantal Elkin, Conservation International: I wonder if you could clarify this mapping project. Is it for you? You said you want to overlay it with trade hot spot areas. Is that actually going forward, and if so, is it to prioritize field sites where there should be more protection? What is the purpose of the project?

Chris Shepherd: That's up for discussion. The ongoing mapping exercise that the Specialist Group is doing is looking at where bears populations are, with population data and trends if possible. Personally I think it would be a great opportunity if we could overlay a map of trade hot spots, trade

routes, and that sort of information, and put it together to see if can come up with indications of what we should be doing, and, for people working on trade or enforcement issues, where the priorities might be. But that is what we are all here for. If people think it is a good idea, then great. If not, then let's talk about something else. It really is just an idea.

Chantal Elkin: I'm trying to think of somewhere like Cambodia, where you could get that information pretty quickly just by talking to some of the groups operating on the ground. Even though there is no baseline data on populations, those groups would know where the important bear populations are in the country. And they would probably know if the bear trade is a big threat to those populations and where.

Chris Shepherd: Has this been done?

Chantal Elkin: It's never been put together, but I think it could be quickly. Having said that, I'm not sure what the value would be. I'm thinking of Cambodia here. What sort of additional value would it have since there are already lots of conservation activities going on in those areas? I don't know if you have any thoughts on what we would do after we establish where the priority field sites are.

Chris Shepherd: We're really doing this as we go along here. If it is an area where things are being taken care of, then I wouldn't call it a priority for starting new work. If the government and NGO partners working in Cambodia have assessed the situation and found out where the problems are most serious and are dealing with it, I think that would be a great thing to share with everyone else, because that's not the case in many other countries. There might some examples or lessons to learn. And it would definitely be something that should be shared with our colleagues in neighboring countries, Vietnam especially, seeing as how a lot bears still seem to be leaking into Vietnam and also into Thailand from Cambodia. It seems to be a source country. If you thought that wasn't a priority area or it wasn't something that we need to be discussing, that would be interesting as well.

Brij Kishor Gupta: You were talking about priorities. If you look at India, the trade is one of the highest priorities, not just for bears but for all species involved. To give you an example, in the last couple of years, India has established the Laboratory for Conservation of Endangered Species (LACONES), under the umbrella of Centre for Cellular and Molecular Biology in Hyderabad, to deal with genetic analysis of trade material. The Wildlife Institute of India also has six foreign laboratories dealing with such kind of samples. Because a lot of wildlife products and fake products are in the market, we need to train people what the materials actually are. So there are two big labs that have been set up, one of which is LACONES. I'll give you a recent example. In the last two years, we have rescued star tortoises, which are imported out of India to Malaysia and Singapore in the thousands. They were confiscated in the airports and brought back to India. Then we did genetic analysis of these tortoises, found the place where they were caught, and released them back into the habitat with radio-collars and microchips. In the last month, there was one consignment that was caught in Bangladesh, but there is a lack of cooperation under CITES from different neighbouring states. From the Ministry, we wrote several letters to the Bangladesh government, because they wanted to release those star tortoises in their country, where they have never actually been distributed. But somehow the Bangladesh government wanted to release those animals rather than send them back to India. I think there should have been more emphasis on such issues, so we can deal with such situations in a much better, scientific way.

Dave 2, Last name unidentified: I've been thinking about this discussion for the last bit and wondering whether we've actually addressed or answered the original question—does trade in bear parts have an effect on the wild populations here? I personally feel that we need to keep it in the context of the reality of habitat loss, because we are pretty certain at this point that for at least the bear populations in Southeast Asia—Asiatic Black and Sun Bears—habitat loss is having an impact.

That's a pretty confident assumption. There are some studies that show that under certain circumstances, without certain habitat loss, a certain degree of hunting pressure may not have a significant effect on the population. But when we put those two things together, habitat loss and take from the population, then we might have a synergistic interaction which might be increasing the pressure. So I want to get back to the original question, which is, "Is trade having an impact?" And what we've heard today is that the number of bears that are in farms in the past seven years has not declined, it's actually perhaps increased from some accounts. Therefore the take is probably at least remaining the same, if not increasing. If we add that to the reality of habitat loss, we can assume therefore that between those two things, in Southeast Asia anyway there's probably going to be an increasing impact. I think we have to address this issue with regard to bear farming and the trade with regard to habitat loss, because it's not going to be removed.

Doug Williamson: If I could use that as a platform for the final part of this discussion. I think it is a very, very good point. In previous symposiums, we have tended to get to a point where, after a very interesting discussion, we end up asking: "Shouldn't we find the answers to this question?" I'd like to spend the last 30 minutes here turning that question around a little bit. Instead of saying "there are answers out there if we could just find them", I think it might be a better suggestion to ask: "What are we here going to do, on the ground practically, to go and answer those questions?" The answers are not going to drop out of the ceiling on us, not in the next 30 minutes anyway. So I would ask members of the panel to comment on that, to say what would be the specific steps that you would like to see people do at the governmental level and non-governmental level to try to address that very question of what is the relationship between trade and loss of bears. And what are the specific steps that need to be taken to address it on the ground?

Dave Garshelis: Dave has a really good point. To be clear, in the presentation that I gave where I showed that you can't tell what's happening to a population just by looking at the offtake; that's the situation where the habitat is stable. In any situation where the habitat is declining, the bear population is by definition declining. If the range is declining, by definition the bear population is declining. If you then add any offtake, that is increasing the decline. As soon as you've shown habitat loss and a declining population, any bears killed from that population are making it go down further. You can't have a sustainable yield on a declining population.

Dave 2: Continuing with that, we then make the assumption that with habitat loss in Southeast Asia the populations are likely declining. Practically speaking, we can assume that bear farming in China or anywhere else is not going to stop overnight, and it's a difficult road to even get the attitude adjusted with regard to that. If there are some initial steps, at least one might be implementation of "no more take", because we perhaps can establish a relatively confident assumption that with the addition of habitat loss, any take will not be sustainable. So therefore, if we can remove the take as an initial start, and then slowly phase in other things, if needed later. Maybe that's a practical step.

Chris Shepherd: Just so I understand, are you saying that one solution would be to say "no more take of bears from the wild"? That is already the case. They're all protected now at least in Southeast Asia and South Asia, with the exception of one or two countries that allow domestic hunting without export. It's already a blanket protection really so...

Dave 2: ... the take is actually sanctioned in a way with regard to farms. Perhaps we can start with just the implementation of stopping take specifically. We know it's continuing in other places, and for other reasons. But it is one step at a time with regard to the focus on implementation or enforcement.

Tsutomu Mano, Hokkaido Institute of Environmental Sciences, Japan: I understand the present condition of trade regulation in the Asian region, but I wonder when you say that bear gallbladder is

used for traditional medicine. I don't know why so many people want to use the gallbladder for traditional medicine. I would like to ask anyone if you know where the illegal trade of gallbladder exists? Who consumes such material? We should understand the custom. This is not an Asian custom. I think is just consumption for economic gain. So who consumes the gallbladder in Asian countries? What kind of people? This is a very important issue for us to understand, because talk here is about how to regulate the supply of gallbladder, but it is also important to understand the consumption.

Doug Williamson: Would anybody like to comment on that? I think that certainly understanding consumer attitudes and consumer uses that are driving a lot of the market is an extremely important point.

Jill Robinson, Animals Asia Foundation: We've been working with traditional medicine doctors for many years now. In fact in Hong Kong, we had a campaign called "Cruelty Doesn't Cure", where we got literally thousands of Chinese doctors joining us in the belief that bear bile can so easily and can so cheaply be replaced. You probably know it's termed as a "cold medicine" to treat heat-related illnesses but historically, 3000 years ago, when the gallbladders were being used, it had a very limited and very specific use. It is only with the development of bear farms that it seems to have just shot off the planet in its use in so many non-essential prescriptions now including teas, tonics, and wines. In Beijing you can buy face packs made of this stuff. Our point today is what does this sort of pus-infused bile do when we know there are so many alternatives on the market, not only herbal alternatives but very efficient synthetic UDCA which is credited by doctors as having the same effect as bear bile.

So I think we've heard today that there has been a lot of piece meal information coming in and people are talking about having to have information about seizures, but for a lot of us in the field, we can build up anecdotal evidence as well. Someone in the audience mentioned forming some sort of group or a committee or a scientific working group. I think that's a jolly good idea. All of us should consolidate the information that we have, and have a central system about what is going on in Asia because there's just so little that is known now about this industry. But what is known about the effect of bear farming is that eight years of bear farming in Vietnam hasn't seen an increase in the population, and 25 years of bear farming in China certainly isn't proving that bear farming is protecting wild populations.

Gail Cochrane, Animals Asia Foundation: Just an additional comment to the question of who is using bear bile. As Jill mentioned, under traditional Chinese medicine, bile was only used in very rare and serious complaints. But with the introduction of bear farming and expansion of the bile market, the bear farmers in China especially have been very effective at marketing the products. And the majority of the time, it has not been prescribed for traditional Chinese medicine. It is going to other uses.

Jill Robinson: There is also the added point that practitioners of traditional medicine are very nervous about the fact that the use of bear bile and other endangered products are actually turning potential consumers away now in the market. People that would otherwise want to try Chinese medicine are very reluctant to do so because of the fear of it containing endangered animal parts. In fact, I believe in the EU, the European Parliament, there are going to be new resolutions which disallow any animal part to be used in Chinese medicine, say by the year 2010. So that's something for all of us to reflect on as well. It's a very important point about the usage and the promotion of Chinese medicine on the international market.

Sohrab Sorker, Dhaka University, Bangladesh: Bangladesh is a signatory of CITES. The commercial trade of bears has not much impact on the rate of population decline. The main cause is

that there are babies being trapped and never released to their natural habitat. They are either sent to the zoo or somewhere else and ultimately die there. Information on the adult population is incomplete, although there are reports of hunters killing bears so this has an impact, along with habitat decline and other environmental causes. I think the trend of decline in the population is more than in other countries. With regard to mapping for hot spots, the basic thing we need is field data, which we do not have in Bangladesh. We have no quantitative population data. We have no accurate scientific research. We need these things, as well as assessments of habitat existence. We know the distribution, we know the habitat, and we know the population is declining, but we do not how much. We have no such quantitative data, and we need international cooperation to conduct such field surveys and research.

Chris Shepherd: Thanks for that. What I'm seeing here is a lot of information, and everybody seems to be missing the same sorts of information. Everyone has bits and pieces, and to my knowledge, this hasn't ever been brought together except for when there are meetings such as this one where everybody says a little bit of something very interesting that we could talk about all day. And then we go away. I would like to put forward one idea for your opinion. First of all, I don't think there's any sort of centralized database or body that is compiling or keeping track of what everyone is doing. What I'm going to suggest is within the bear trade expert group, we formulate some sort of communication network where people can stay in touch, where people can find out what everyone else is doing, and very interesting, helpful, and relevant pieces of information can be easily shared. With other groups that I am involved in, there are simple things like an Internet listserv where everyone can receive the information, take part in conversations if you want, and read media pieces, current papers, or new papers (grey literature) coming out. It all goes on to this listserv where everybody has access to it and can discuss it. But most importantly, everybody knows or potentially could know what other people are doing. Does this sound like something that we would want to establish amongst the bear people here?

Barbara Murray, British Columbia, Canada: Jill and Gail, do you have something that you could use to facilitate something like that? Something already on your website? Could you make that available to a group by just adding a page, or are you too busy to do that? It is 2006, for heaven's sakes! All this information should be in real time. We shouldn't be talking about it six years later.

Jill Robinson: We will need someone to coordinate it, that's for sure.

Gabriella Fredriksson: Perhaps a more neutral listserv is where Chris is heading, not that I think it shouldn't be on your website. I would like to add that maybe the same things we say for the sun bear team we say for the Asiatic Black Bear team. Maybe this could all somehow be combined in one listserv, where everybody who is a member of the Asiatic Black Bear team, the trade team, and the Sun Bear team have just one listserv, because the issues are all similar.

Chris Shepherd: Let me give a few examples of other listservs. Some of you use one called the Wild Trade Listserv—just about anything to do with wildlife trade in Southeast Asia gets put on this listserv. It is very broad. The Fresh Water Turtle Group uses its listserv more for a discussion forum; they're bickering back and forth on this daily. In Malaysia, we have a very cleverly named listserv called "MYCAT", which is the Malaysian Conservation Alliance for Tigers. That has a small working group of very active people focused on Malaysian tiger projects. And then it also has a broader group of people who are working on tigers or interested in tigers, and media pieces, papers, etc. go on that. And there is a link to the Cat Specialist Group there, where there is a library for members of basically everything that's ever been published on wild cats in Malaysia. I don't think any of this has happened with bears. As Gabriella has pointed out, I would be willing to work on this, perhaps with a few other people who might be interested. We might be able to find a volunteer in Malaysia where I am based who could help set up a listserv and maintain it, if that is what people are

interested in. I don't want to do this and then have no input, no follow-up or anything. If people think it's a good idea, then I'm willing to follow up on that.

Doug Williamson: That sounds perfectly fair. Are there any other suggestions in terms of things that could be done to improve communication or coordination among people who are working on this issue in the room?

Dave Garshelis: I have a question for Chris. Coordination and information among us is one issue, but actually pressuring other government officials to do something is an entirely separate issue. You mentioned that for the fresh water turtle people, the Specialist Group was effective at doing that? I'm wondering what they did, and maybe if we could to some extent copy it.

Chris Shepherd: In the Fresh Water Turtle Specialist Group, we had a big symposium in 1999 where papers were presented on what was termed the "Asian Turtle Crisis". Why did we call it a crisis? In that year, from the city of Medan in Sumatra, they were exporting 25 t a week of live turtles. It was an absolute mess. Proceedings were produced. People began working very closely with different government agencies to have turtles that were not listed in CITES put onto CITES. There was a lot of work with some of the zoo associations in creating awareness material. The top 100 priority species were ranked for importance, action plans were drawn up, and people really followed up on those. I think for some of the species anyway, what really got things moving was that country action plans were put together, species action plans put together, and funding appeared for some of these projects. People at the meetings committed to doing specific things by specific dates. There was a lot of collaboration. There were all kinds of NGOs, government partners, universities, and private researchers who came together and worked off the same page to make sure that we weren't all running around re-creating the wheel over and over again. That meeting was in 1999. To this day with TRAFFIC we are still doing quite a lot of fresh water turtle work. The Specialist Group is bigger and more active than it had been. We have three or four fresh water turtle projects going on right now, two of which are being done with the CITES Secretariat. We haven't saved turtles yet, but as far as getting people motivated within and outside of the government, it has been very successful. To raise a turtle to a high priority species is, in my mind, a huge success. Usually animals like turtles don't get a lot of attention. But it really was a lot of work.

Now correct me if I'm wrong, but at least in Southeast Asia I don't think there are any bear action plans or country plans that are being implemented. And I don't think there are many alliances of different NGOs and governments working together on large-scale bear trade issues. There is definitely some coordination on a more localized level, and Cambodia would be a good example of where some of that is happening. But there are not a lot of big multi-organizational, multi-agency pushes towards doing something about the bear trade. I also don't think, at least in Southeast Asia, that there is a grand fundraising strategy or funding strategy with specific goals to work together on a coordinated timetable.

For turtles that is what it took. Before everyone came together, there were people working on turtles all over the place. There was not a lot of coordination and things were not moving forward with the momentum that we have now. So it might be something that we should consider. The listserv that the Turtle Specialist Group has, along with more frequent meetings—at least regionally—have been essential. The communication and coordination have been the key to it all.

Doug Williamson: Any final comments from the audience or any final thoughts from the panelists?

Brij Kishor Gupta: I just want to add one thing, not from working with the Central Authority or any other organization, but as a common man. Look at the live animal trade, particularly in India for sloth bears. There's one area which we know in Agra, Fatehpur Sikri Road, where more than 120–150

families are involved in the bear trade. For the last 20 years, the government and many international NGOs have been working to solve this problem. A rescue centre has been set up, and already has more than 120–140 animals brought in through seizures and surrenders, all sloth bears. Yet if you go you will still see bears there. The problem is not going to be solved. We are getting complaints each year and every month from people visiting from foreign countries because of the cruelty and the fact that trade is happening.

I have gone many times and spent a lot of time with the people involved, some of whom have been there many years. There's a couple of reasons why the activity is so difficult to stop, one of which is political will. The politicians in that area, for them it is a vote bank among a particular community, so they don't want to take a harsh decision to force those people to surrender those bears. In fact, the government of India has given an order to all departments to seize those animals because you can see them on the roads—they're not hiding. Yet the people keep replacing those animals because the license, the paper issued to them, just indicates the ownership of the bear. It does not indicate the sex or the age of the bear, so they keep replacing them. A lot of these animals die behind the scenes, their products are sold on the market, and they get a new bear. You may see a license issued to them in the 1970s, which would mean the bears should be all 30–35 years, and yet you see the bears are six or eight or 10 years old that they are holding. One recommendation is that politicians from these areas should be brought in for some kind of training or sensitization. Until and unless you convey the need to them, the authorities that take actions such as raids will not do it because they are afraid that if they take any kind of serious action their transfer will happen the next day or they may be suspended from their post. So that is the actual ground situation. We have expressed this concern and there is planning now to bring politicians from those areas for sensitization. It is important because until and unless you do it, nothing is going to happen in the field.

Doug Williamson: Any final comments? Thoughts?

Hiromi Taguchi, Tohoku University of Art and Design, Japan: I have been listening to the discussion. I really feel that most of the discussion here has been from the viewpoint of biologists or ecologists. I think the viewpoint from social, cultural or historical researchers also needs to be involved. The reason is that Asia, including Japan, China and some other countries have different, diversified cultures. For example, regarding the consumption of bear bile, there were questions from people regarding how bear bile is consumed, why it is consumed, and why it has to be consumed. What is the cultural structure driving this consumption of bear bile? So we also have to study and discuss the culture in order to solve the problems we are facing. Also, there have been comments about political will. Politicians must be sensitive to cultural backgrounds, in order to persuade people in their social and cultural context. Therefore, it would be very important in our discussion to involve a cultural and historical viewpoint. When I have spoken at public events and talked about bear gall, we know that in Japan we do not have sufficient data. If more people are involved in the research, more facts would be known. And in such an effort, we will be able to know the future of the Japanese consumption trend, how we are to co-exist with bears, not only in Japan but in other countries, and we would start to find answers. So that is another part of discussion that is missing that needs to be added.

Doug Williamson: I think that certainly we have mentioned how important it is to understand the culture and the attitudes that are a part of traditional Asian medicine. I hope that in terms of follow up, that work will continue—it is absolutely imperative. The last two TRAFFIC symposiums, in Korea and prior to that in Seattle, focused on those questions and specifically on dialogue with the traditional Chinese medicine community. I think that has always been a priority in TRAFFIC's work in this area, to try to create a dialogue. There was a specific question that was asked in this symposium regarding the effect of trade on Asia's bear. We did not intend to de-emphasize the importance of the cultural aspect of the work. But the question here is a little bit narrower, simply to try to tie the question of "what is happening with bear trade?" back to its direct effects on Asia's wild bear populations, if that

can be done. If there is more work that needs to be done in terms of the cultural aspects of the question, then that is certainly something that should be presented as a conclusion or as a recommendation.

[Break]

SECOND SESSION: CONCLUSIONS AND RECOMMENDATIONS

Doug Williamson: In this session, we are going to talk a little more specifically about some of the themes that have come out of the meeting so far. From listening to the last session, there are some clear issues regarding communication, coordination, and information gathering across borders. There are some obviously varying levels of reliable data on different subjects, suggesting that there is a lot of need for better information sharing, or at the very least just figuring out how to get data out there and shared around. And finally, As Chris mentioned, there have been cases such as the turtle group that indicate that can be made through aggressive efforts to merge ideas and country plans with funding sources. Without that type of approach, there is very little prospect for much concrete progress. So with that, I guess I'd throw it to Chris and see if based on what we have talked about so far, we can develop some concrete conclusions or recommendations for the proceedings. For example, the idea of setting up some sort of a listserv or a common communications link for issues related to bear conservation in Asia.

Chris Shepherd: What I would like to see is not a list of recommendations similar to those in almost every report you see on wildlife trade. The recommendations are the end of these reports and proceedings are always the same. We want increased knowledge, improved enforcement, better legislation, etc. It would be great if we could come up with some recommendations or follow up steps to this meeting of what should be done next and what is doable if we're going to move things forward. For example better communication between the organizations represented here, and whether a concrete step means setting up lists, more country meetings or regional meetings, or at least increased dialogue to let everybody know what you are doing and find out what everyone else is doing. I know in the Cat Specialist Group, we have an online library of everything published on cats. It's an incredibly useful tool if you're doing research on any of the wild cats, and I know a number of people have their own personal libraries of papers on bears in the region. Maybe as an idea we might want to set up an online library for bear papers. Those are just some examples of what I would like to see—recommendations that people can go home and actually do.

Gabriella Fredriksson: One thing that might be useful would be a kind of matrix which would list the different things that are related to the trade. For example, what is the status of law enforcement, or what is the state of bear conservation in each country. There could be a little database compiled, with questions for each country representative to fill in so that there is an overall, country-by-country picture of the status of bear conservation. I think the mapping project will help in actually creating a first database on where bears occur now which can then be monitored. But I have a feeling it would be useful to also have maps of where trade routes are, etc. That way a picture, a better visual grasp, can emerge of what is going on and how you could deal with things. I think everyone would like to have better law enforcement, etc., but it would help if that is made visible in a clear document. I think everybody can assist from the different countries to fill in what the main problems are regarding bears, especially the expert teams for the Asiatic Black Bear, Sun Bear, and the trade team.

Chris Shepherd: Does everyone agree with that? Does anyone violently disagree? Otherwise, I'm going to write that down as a recommendation

Doug Williamson: It would be to create a "matrix", you said, of information?

Gabriella Fredriksson: What I was looking at earlier for elephants is the sort of template I am thinking of, where categories were listed such as: What is the current will in the country to actually do things? What is the state of the implementing agencies? What are the funding possibilities to actually do things in those countries? Who are groups that would collaborate on such issues? Answers are likely to be quite different in various countries. I think in Cambodia, they do a lot of wildlife trade enforcement now, but there are other countries where nothing is happening.

Chantal Elkin: Just to let you know that Conservation International is hosting what is called the “Bushmeat IMAP” and that there is an association of organizations called the Bushmeat Crisis Task Force, BCTF. They are basically an online resource if you want to know anything about the Bushmeat Crisis in Africa. You go to the website, bushmeat.org, and you get a list of experts and a map of what everyone is doing across Africa on the bushmeat trade. It has an online library, all of the things that we are talking about here. We are investing in this BCTF to expand what they have done for Africa to the Asian wildlife trade. I think it is a good neutral organization because it’s made up of different NGOs and governments. It is an online resource that everybody can access, and has an existing format. So I’m just offering a suggestion that we might want to look into that to host some of this information because there’s already an infrastructure, and there are people working to collect this information for Asia. If you are interested, we can talk further about that.

Jill Robinson: I would like to make a recommendation based on what I have said and heard today. I would like to recommend that the bear farming industry in both Vietnam and (especially) China be opened up to greater scrutiny. I would like to suggest that both Vietnam and China invite delegates of experts to the bear farms in both countries so that workshops can be held and panels can be formed subsequent to that.

Barbara Murray: I would like to make a recommendation as a bear conservationist and activist in British Columbia, Canada. I see one NGO up there—Animals Asia. I would really like to have reports from other NGOs that have bear experts on the ground in the different countries in Asia, and have the reports consolidated to find out that you are not duplicating work. Maybe you could help some of these experts with funding when their projects are really going in the right direction and they just need some help to get there.

Doug Williamson: So the idea is for NGOs in other countries to help find funding for partner NGOs, for cooperative ventures?

Barbara Murray: We have had reports from one NGO and we have some sponsors here today on this conference. But I would really like to see what those sponsors are actually doing in the field. I hope they are taking a lot of information away from this conference, and will be utilizing it in the field. But I’d really like to know how they are doing so after we leave this conference.

Unidentified Male Asian Speaker: Chris has been talking about this bear trade information that he gathered during the survey on other species of elephants, tigers, ivory and so on. That kind of information needs to be published in a proper report. And I would really suggest that TRAFFIC make this kind of information available to everybody, especially the authorities who need to know the current situation of the trade, because it is so far not known by a lot of people.

Chris Shepherd: I’m going to respond to that; it is a very good point. We do need to get more of our information to see the light of day. We have some difficulties. Globally, TRAFFIC has 80 people. For all of Southeast Asia, in the field we have one person, and that’s me. We do have a few project-based staff working on reptiles right now, and we do submit unpublished information to governments on a regular basis. That information often does not go any further. We do want to get more of our survey reports and species reports out. It comes down to time and often funds. The World

Conservation Society (WCS) has been very helpful in the last couple of years in funding the publication of quite a bit of our material, which has been extremely helpful. TRAFFIC, for those of you that are not aware, is not a membership-based organization, so anything we do means we have to go out and look for funds. We should be doing more but funding is an obstacle and I think you'd probably find that with quite a few organizations which probably have a pile of information that is not always surfacing. That is something that hopefully can improve with increased communication between everyone. Whether it is us that brings this information out, or someone else compiling it, the point is that we have to get the information out in a timely way out. Is that a recommendation you would like to suggest: "TRAFFIC publish more stuff"?

Doug Williamson: That is a new recommendation here, but not a new issue for those of us who have worked with TRAFFIC.

Unidentified Male Indian Speaker: I want to add one more. We are discussing Southeast Asia here, and there are very few representatives from different countries. There are many more people who are involved in this work in some other way. Could TRAFFIC Southeast Asia or TRAFFIC International do, at a smaller regional level, some kind of sensitization or meetings or workshops in host countries? When there is a smaller meeting, we can bring in people to make them aware of facts and information which can help ultimately shape an effective strategy. It is easier in such a setting to talk about strategy, and involve policy-makers, politicians, and maybe a few biologists at the regional level.

Chris Shepherd: That is an excellent point. I think it is very important that on a regional level, or even a country level in some cases, there be more meetings or at least more discussion and coordination. I don't think it has to be TRAFFIC, although it would be good if TRAFFIC was involved. In South Asia, we have one person based in Delhi right now. He has a pretty full plate, but TRAFFIC would definitely be interested in taking part. Before the last break, we talked a little bit about working groups. If there is a working group formed, perhaps it could move towards organizing country-level activities or regional activities in South Asia, East Asia, etc. I don't know if it has to be TRAFFIC taking the lead, but I think it would be more productive to have a working group organizing that sort of thing.

Unidentified Male Indian Speaker: Even if TRAFFIC can't actually do it in the region, TRAFFIC can at least take some initiative to start a dialogue with governments and add a little bit of pressure, and then let the governments or NGOs take over. Only a little pressure or dialogue has to be initiated. Even if TRAFFIC or whichever organization does not have the infrastructure or support system or manpower, with a little help we can push for one or two meetings. Otherwise, what happens is that the needed people will be looking only at the very broadest aspects of general trade; they will not be going in a species specific direction. When it is discussed that way it gets diluted and it does not go directly to the ground level. So if we can think on those lines, you look to make people team members who are experts, and those people can help to initiate the needed kind of exercises in the region. Then things can actually happen.

Chris Shepherd: Thank you. I will make a point of discussing this with our South Asia counterparts in TRAFFIC, and also with other organizations working on the trade. It's a very good point.

Sohrab Sorker: There has been mention of government experts, but all countries do not have such experts in wildlife or CITES. It would be better if governments included local experts. There are experts from universities and experts from research organizations, but it would be much better if they represented the country. Second, many people talked about NGOs, but not all NGOs are for the environment or biodiversity. As an example, in Bangladesh they sometimes work on politics, on health and sanitation, and on basic education. But there is less emphasis on biodiversity or conservation aspects. So, particularly in undeveloped or less developed countries, some thought

should be given to special facilities to develop or contribute funds for research and conservation of wildlife. Third, there is a need for dissemination of information, particularly from TRAFFIC. If there are hard copies available in the university library, every department has a library seminar. And the students, if they studying environment and biodiversity, need hard copies which announce bulletins and other things free of cost, as do teachers.

Chris Shepherd: I have two comments on that. First, we do need to figure out a way to disseminate information to other NGOs, as well as people in universities, about what's going on and about priorities. For example, we need to think about how we are going to get the recommendations of this meeting to all the right people. So that's a good point. Regarding your second point about hard copies for the university libraries and NGO libraries...

Sohrab Sorker: ...not all departments. It can be sent to the central library to be catalogued and distributed to people or students who can use the information.

Chris Shepherd: All of our publications are online and in hard copy. I know what you are saying. I work in a lot of countries where no one wants the information online. They want hardcopies for libraries when there is no Internet. Come and see me afterwards with the address of the institution and I'll make sure you get these reports mailed to you.

Tarendra: I would like to add to the point that we need to make information available to local communities. I have seen that where I have worked in India, even in those places where people were being mauled by bears, they still favor bears having bears in the region because whatever forest cover is left is only because of the bears. So we need to address those people, even if TRAFFIC is not able to organize workshops. Even if they organize the workshops, they cannot reach all the needed places. If we have informational material, this can be downloaded and distributed to the people. This kind of work can be done by NGOs and government organizations. We do not have a clear list of the things from bears used in trade in body parts, and what are the facts. I believe that information should be compiled.

Chris Shepherd: Just to make sure I understand you correctly: somewhere where all information on bear trade is put in one central location that anyone can access? Would a centralized online library be the solution to that?

Tarendra: There should be a centralized library. If I am going to some place where I know these activities are going on, I can tell the people: "Here is good information". I can translate it into Hindi or my regional language and hand it to people. If I tell that them that this is the cruelty being done to bears because people are doing these things, definitely some of them will show up to listen.

Chris Shepherd: You are raising a very good point as well about publishing information in local languages. We should make a note of that as a priority. I know we're currently publishing all of our Indonesian-related work into Indonesian, and it is very worthwhile.

Dave Garshelis: I want to add to the online library idea. We are planning within the Bear Specialist Group to develop a website as a priority for this year. One of the things it could include would be to post all this information just like the cat website. Anything on bears and the bear trade would be posted on there as well.

The other thing we'd like to have on the Bear Specialist Group website is a way for people to not just download information, but also to communicate back to us with information about bears that we don't have, particularly locations that we don't have on our maps. We are going to post the results of the mapping that we are going to be doing later this week. There will be points with data that people can

look at and see, for example: “This guy made this observation back in 1997 in this spot”. People could be living in a place and say: “Wow, we have bears around here!”; or: “Why is it that the map doesn’t show bears where I live?” They will be able to write into the website with information that they believe we should post. Perhaps more important from what we’re talking about here is people who might say: “How come the map shows bears where I live, and there haven’t been bears here for 15 years”; or “I want to write back to this stupid website and tell them that the bears have been extirpated from this spot”. That will be really important for us to know.

One recommendation I would like to make is that we try to find these trouble spots—places that are maybe in imminent danger of extirpation. I think those could be used to help wake the world to the fact that bear populations are in trouble. There is an expression you have heard probably about—“Extinction debt”, or “Swirling around the drain”. These are species that are still out there, but could collapse very quickly like the Atlantic cod fishery. This is a sort of warning: “We know it’s sort of happening but we can’t prove it”. If we can find places where in the past decade bears have been extirpated, it would be nice to be able to point to those, and say: “It really is happening”. The situation is real, and bears are actually disappearing from a lot of places. Part of our mapping strategy is to locate places where bears have been extirpated recently, and also locate places where they may be extirpated in the near future. There’s also an importance to tying that to the bear trade to make the direct connection.

I would also like to propose another recommendation. We started off with the question: “Does the trade have a documented impact on bear populations?”. I think it is a bit of a rhetorical question. When you have a population that is declining, and you are taking bears out of that population, it has a negative effect. That’s it. Maybe as a recommendation, I could volunteer for the Bear Specialist Group to write a letter to that effect, stating that it is just a fact that the bear trade is having a negative impact on bear populations in a large part of southern and southeastern Asia. We could publish it in the International Bear News and eventually put it on our website. Eventually such a letter could be expanded by corroborating it with real information that people could write back and say: “Actually, I have information about this”. That could help tie in the information about bear trade hotspots. There may be places where there is a big market, with people going further and further away to get bear products, and bears have been extirpated from the whole area around the bear market. A few examples like that on a website could be very dramatic and graphic. Things like that can maybe have an impact and change the minds of people that bears are actually important. Certainly bears have to be as important as turtles. I really like turtles, and I actually got into bears via turtles (which is a long story). But I ended up thinking bears are more important.

Jill Robinson: I would like to make another recommendation. We have heard a lot about the sensitivities surrounding the use of bear bile and gallbladders in traditional medicine. And quite rightly so, we should be involving the traditional medicine community more. I would like to recommend holding a workshop in the very near future, whether it’s under the auspices of TRAFFIC or whether other NGOs can help Animals Asia to fund it. Invite a panel of Chinese medicine doctors, or traditional medicine doctors from the various countries involved in this industry, to come along and set the record straight about how essential bear bile is in the industry, whether it can be replaced, and what the cost would be to actually replace it if people thought that was an option.

Kim Sun, Cambodia: I think that all the comments given are excellent, and could not agree with you all more. But we should not ignore the issue of international cross-border trade. It seems that trade patterns always show that a lot of bears have been transported or smuggled through international land borders rather than international port or airports. As others have pointed out, a lot of bears have been smuggled through the Vietnam border, Laos border, or Myanmar border to China. So each country also has to commit to stop the wildlife trade or bear trade in the region. But I think that so far, curbing or combating wildlife smuggling has not been effective or successful. So I think it would be better to

find recommendations or approaches to those countries that need to deal with cross-border smuggling effectively. Maybe the people appointed to work the border are corrupted. So why don't we try to find an independent, reliable agency that can be present along these international borders that make sure that those people are not corrupted.

Chris Shepherd: Thank you for that. I agree with you that the cross-border trade throughout Asia is a really important issue. The problem that I see is that no one really knows how many border crossings there are—there are so many. But maybe something that could be identified as a priority in the mapping exercise is looking at priority areas of illegal cross-border trade, and then maybe looking towards solutions in these certain areas. One of TRAFFIC's projects has identified 14 different international airports as major hubs, and we are working in these airports. But land crossings and ports, there are just so many of them that I think prioritizing these would be a very good idea as well.

Unidentified Male Australian Speaker: I'm kind of new to this but there is one real simple thing I want to state. With the website that you guys are planning, it might be good to have an interactive BBS question and answer section, where people from all around the world can answer questions on the homepage, not just the experts. Then they might find people from their own countries with the same interests. It could actually get people together. I think it would be really interesting to actually have some live feedback, rather than just mail or post, to get people interested who may just not know anything about the situation. They can post a question and get some direct feedback from a lot of different people in places and on different aspects.

Chris Shepherd: That is a good idea to explore as well, thank you.

So Tung, affiliation not identified: My comment is related to my friend from Cambodia. I agree with him because to reduce the wildlife trade, including bear parts, we urgently need trans-boundary or border agreements with our neighbouring countries. I think in this case China should take the lead, because China is not only a big market for bear parts, it also has an influential position economically and socially over Southeast Asian countries. So if we can stop or reduce to some extent the amount of that market, we can automatically reduce the supply from our country. As an example, I think because of the report of the Global Witness in Northern Myanmar, some trade was significantly reduced from Myanmar sites. I think it would set a good example to get the trans-boundary or border agreements with two or three countries to reduce the wildlife trade, including bear parts.

Chris Shepherd: That is also a very good point. Hopefully it is something that will be addressed by the ASEAN-WEN as well. China has been taking part in the ASEAN-WEN discussions and is very keen on working together with the ASEAN countries on the border trade issues, so that's an excellent recommendation. Any further thoughts?

Doug Williamson: I think we can move on. Before concluding, I want to ask to see if Dave has any final thoughts he wants to share about the meeting before we adjourn.

Dave Garshelis: We started off talking about how much effect the trade in bear parts has on bear populations, and I don't think we should dwell on trying to measure it while we are quite clear that these populations are declining at an alarming rate. This is an area where people have tried to focus money into researchers going out to document the demise of bears in their study areas, and it is not very productive. It would be helpful to show that without investing a huge amount of money into getting population estimates, etc., that we can document these things on a broader scale with a few hot spots. That way we can show that something bad is happening here, and pay attention to those particular spots. But I think that it is pretty self-evident that these populations are in trouble across a broad area, from the combined effects of the trade in bear parts and diminishing and fragmented habitat.

Had habitat not been an issue in this area, it is possible that the trade in bear parts could actually be sustainable, just like a legal harvest in North America or Europe. But the fact that we have this deteriorating habitat makes this a terribly difficult issue to deal with. And nobody can come up with a solution on how you are going to improve habitat conditions for bears. We would certainly like to do that, but it involves a whole different set of issues involving economics, how to prevent the conversion of forest into agricultural crops, and things like that. It is extremely complex.

Ironically, even though this is a particularly complex issue, it might actually be easier to deal with the direct killing of bears. But I think we have to keep thinking of the situation in terms of two issues that co-vary, and both have synergistic effects. There are all sorts of reasons that people kill bears and that bears end up in markets. The fact that with all the brainstorming that has been done, that this is the fourth bear trade symposium, and that nobody's come up with "here's all you have to do" makes it pretty obvious that there isn't any "here's all you have to do". There are a lot of little things that we can do, small steps forward that hopefully can turn things around in a few places. We are not going to solve the whole issue for all of Southeast Asia or all of Southern Asia. But if we can have a few successes in a few places, I think that is what we really need to aim to do. For the Bear Specialist Group, our agenda is going to be to try to provide information to people and to try to get information from people, and try to put all this together and use it as a way of leveraging support, leveraging governments, leveraging money, etc towards these issues. Through that, people could be made a lot more aware of the fact that there are black-colored bears, not just black and white bears, that need peoples' attention.

Doug Williamson: Thank you. I think that was a great way to sum up the day. I think we have all learned a lot about the status of bears globally from Dave's report, and certainly heard a lot about the issues and problems facing Southeast Asian bears from Chris Shepherd. We got valuable information on how wild bear populations are faring and bile is used right here in Japan from Nobuo Ishii, and discovered a lot of interesting information about what is going on in India regarding several types of trade in Sloth Bears and Asiatic Black Bears from Brij Gupta. Nguyen Xuan Dang told us a great deal about some of the challenges facing Vietnam, not only regarding conservation of wild bears within the country, but also related to captive bears coming out of the wild illegally and the transit of bears through the country. Finally we learned a great deal from two perspectives about what has been happening recently with bear farms in China. Huang Haikui spoke about the consolidation of the bear farming industry and how it provides medicinal resources while promoting conservation of wild bear populations. Jill Robinson then gave us a very different and eloquent perspective on continuing concerns and problems related to bears in captivity on these farms.

It should be pointed out that in terms of information exchange, in one day we are not going to be able to talk through all the issues of data reliability. As we have heard, sometimes there are data that simply conflict, and it is very difficult to try to figure out in a day exactly what the numbers are. I think as Dave just said, sometimes the hard numbers do not matter. It may not matter whether there are 10 000 bears or 8000 bears in a population, unless the data are put in a context of population decline or increase. But I hope that in highlighting some of the basic needs for increased communication, better coordination between and among countries and wildlife groups, better funding strategies, etc. we can start to work through these issues. The ideas and recommendations that you have put out on the table are a good start. As Dave said, maybe we can move forward concretely in a few areas, and make some progress that way. I hope it's been a valuable day for everyone here.

SUMMARY OF RECOMMENDATIONS

Editor's Note: The following summarizes recommendations made during the afternoon discussion sessions. TRAFFIC did not try to rank or prioritize among the recommendations made, but simply includes them in the order they were suggested.

- Consider developing some form of communications network, perhaps a listserv under the aegis of the bear trade expert group or another entity, to facilitate communication and dissemination of information (reports, new or current papers, media pieces, emerging data, etc.) between people and groups working on or interested in bear trade and conservation issues in Asia. Models for such an initiative might be found in similar networks established by the IUCN/SSC cat and freshwater turtle specialist groups. It was noted that the Bear Specialist Group has identified as a priority developing an interactive website for people to not just download information, but also to communicate back information about bears that the group does not have.
- Develop a matrix and compile a database of different issues related to bear conservation and trade, in order to create a country-by-country picture of the status of bear conservation in the region. For example, categories could include the status of law enforcement, the known state of bear populations and conservation efforts, political will to act, capacity of implementing agencies, possible NGO and government partners, identified trade routes, etc. Each country representative could be surveyed with such questions, with particular input from the expert teams on the Asiatic Black Bear, Sun Bear, and trade. The existing template for Asian Elephants could be a model.
- The bear farming industry in Vietnam and (especially) China should be opened up to greater scrutiny. Both nations should invite delegations of experts to the bear farms in their countries so that workshops can be held and panels subsequently formed.
- NGOs that have bear experts on the ground in different Asian countries should produce more reports on their work, have the reports consolidated so that work is not duplicated, and provide help and funding to promising field researchers and projects. It was recommended that TRAFFIC in particular produce and disseminate more reports.
- TRAFFIC or other NGOs should conduct meetings or workshops at a smaller regional level, in host countries, to sensitize government officials (policy-makers, politicians, etc.) on the importance of bear conservation at a smaller regional level. It is easier to talk about specific strategies in such sessions. If TRAFFIC or another NGO cannot conduct the actual workshops because of lack of personnel and resources, it should at least take some initiative to start a dialogue with governments and add a little bit of pressure, and then let the governments or other NGOs take over. Perhaps a working group should be established to pursue this idea.
- For countries without government experts in wildlife or CITES, expertise often resides in universities and research organizations. NGOs should support these facilities, particularly by providing, free-of-cost, hard copies of reports, bulletins, etc. on critical bear conservation and trade issues. TRAFFIC in particular should disseminate such information to university libraries for students studying environment and biodiversity.
- There should also be a centralized online library with informational resources that local governments and NGOs can use to increase public awareness in local communities critical to

bear conservation and. Whenever possible, relevant materials should be published in local languages or available for translation.

- There should be an effort to find trouble spots—places where bears have been recently extirpated or are in imminent danger of extirpation—that could be used to help wake the world to the fact that bear populations really are in trouble and are actually disappearing from a lot of places. There is also an importance to tying that to the bear trade to make the direct connection.
- The Bear Specialist Group will write a letter stating that it is a fact that the bear trade is having a negative impact on bear populations in a large part of southern and southeastern Asia, because when there is a population that is declining, and bears are taken out of that population, there is a negative effect. The letter could be published in the International Bear News, put on the proposed website, and eventually expanded through corroborating information people might contribute, especially regarding bear trade hotspots.
- A workshop should be held in the very near future at which a panel of TCM or traditional medicine doctors from various countries involved would set the record straight about how essential bear bile is in the industry, whether it can be replaced, and what the cost would be to actually replace it if that is an option.
- Because much of the bear trade crosses international borders, especially land borders, countries in the region have to commit to stop cross-border trade. Efforts to date to curb or combat wildlife smuggling have not been effective or successful, with corruption a likely cause in some countries. The notion of finding an independent, reliable agency that can be present along these international borders to combat corruption and ensure effective border enforcement should be considered.
- To reduce the wildlife trade in Southeast Asia, including bear parts, there is an urgent need for trans-boundary or border agreements between neighbouring countries. China should take the lead, because it is not only a big market for bear parts, but it also has an influential position economically and socially over Southeast Asian countries. If that market and trade can be stopped or reduced, the supply from Southeast Asian countries can automatically be reduced. A good start would be to get trans-boundary or border agreements between two or three countries to reduce the wildlife trade, including bear parts. Perhaps this is something that will be addressed by ASEAN-WEN.

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TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

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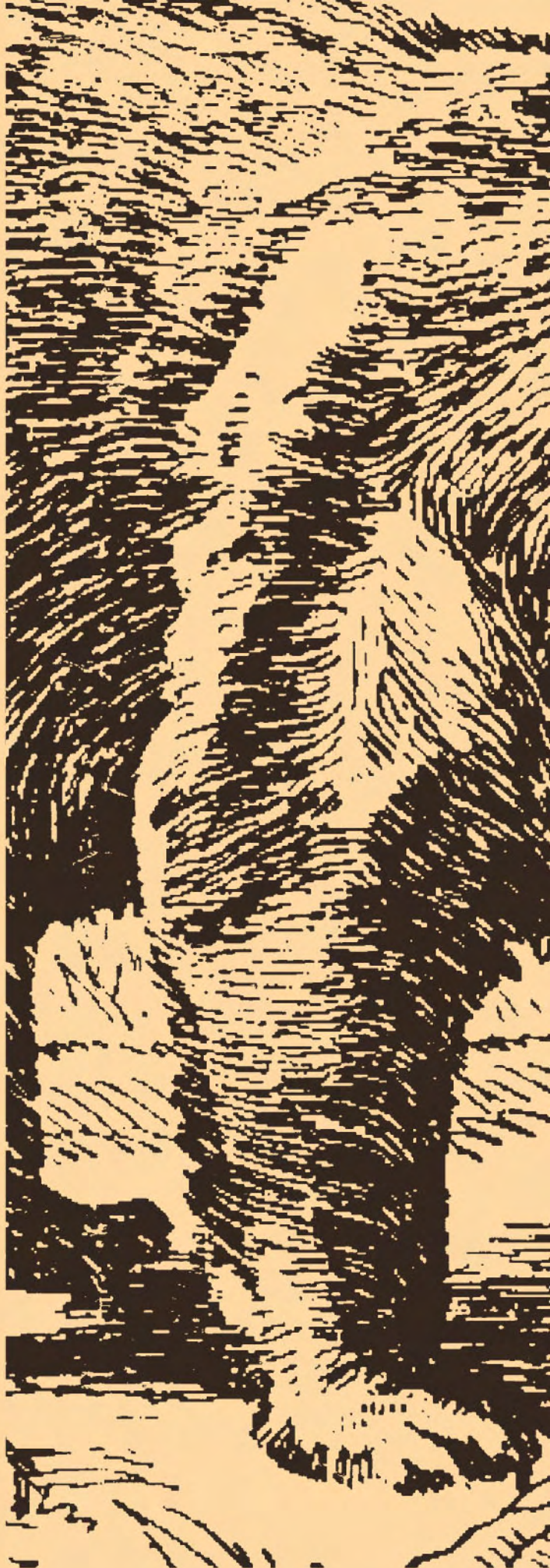
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