The status of bears in China: country report

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China is one of only two countries with four species of bears (although the status of giant pandas [*Ailuropoda melanoleuca*] is not treated in this report). In terms of diversity and scope of habitats, China is one of the world's most important countries for bear conservation. Figures purporting to provide abundance and density of bears abound, but none are documented sufficiently to merit recognition as scientific estimates; all estimates of bear density and abundance are better viewed as guesses. The geographic distribution of brown (*Ursus arctos*) and Asiatic black bears (*U. thibetanus*) is fairly well documented (uncertainty remains regarding sun bears, *U. malayanus*). Sun bears in China are rare and have received very little study. An oft-repeated guess is that about 150 remain, although the recent national survey on terrestrial wildlife species estimated a total of about 700 (State Forestry Administration 2003), restricted to specific areas of southeastern, southern and western Yunnan and southeastern Tibet. We restrict this report to brown and Asiatic black bears.

Biology

A. Asiatic black bear

Asiatic black bears were formerly found over almost all of China. However, due to human development and habitat destruction, its distribution has contracted. Asiatic black bears no longer occur in the northwest and central part of the country. Publications have identified 4 subspecies of *U. thibetanus* in mainland China, and population estimates vary greatly among sources. *U. t. mupinensis* is the most wide-spread subspecies and found from Gansu and Shaanxi provinces in the Yellow river areas in the north to Guangdong and Guangxi provinces in the south, and from the Qinghai-Tibet plateau in the west to the east reaching Zhejiang province. *U. t. thibetanus* is found in the southwest part of Yunnan, southern Qinghai, southeast Tibet

and northwest Sichuan. *U. t. ussuricus* is found in the northeast part of China, and *U. t. laniger* only occurs in the southern slopes of the Himalayas (Table 1).

Asiatic black bears in China can breed at age 4 or 5. The mating season varies (geographically) from May to August (Reid et al. 1991). Cubs are often born in a short period from late December or early January. Hibernation can be relatively long in the cold north and northeast, which may last from October to April. In warmer southern areas, Asiatic black bears can be active year-round.

B. Brown bears (*Ursus arctos*) in western China.

Chinese publications claim the existence of 4 subspecies of *U. arctos* within China: *U. a. lasiotus* (in the northeast), *U. a. arctos* (in the Altai Mountains), *U. a. pruinosus* (on the Tibetan plateau), and *U. a. isabellinus* (in the Tianshan Mountains). Other than descriptions of phenotypic differences that typically characterize bears in these regions, no recent documentation exists to support these subspecific designations. Whether or not distinctions are real, it is clear that brown bears in western China are geographically and ecologically distinct from those in China's northeast (Fig. 1). It is unclear if brown bear populations *within* western China are isolated from one another. Unsurprisingly given that primary productivity in most of western China is low and that these bears lack easily obtained sources of protein, body size of western Chinese brown bears is small-to-medium (although Liu 1996 reports a female weighing 212 kg). Reproductive rates have not been documented, but litter sizes are most often reported as 1 or 2, with triplets being quite rare.

Brown bears inhabit most mountainous areas of China's arid and largely unforested west, and are occasionally reported from valleys and wetlands between mountain ranges (but not, at least in recent years, from the large arid basins such as the Dzungarian,

Tarim, and Chaidam). Brown bears in western China occupy an ecological niche more similar to those of grizzly bears in the Arctic tundra of Alaska and northern Canada than to the largely-forest dwelling brown bears elsewhere in Eurasia. Although few studies of food habits have been conducted (Xu et al. 2006), all indications are that these bears are largely carnivorous, subsisting largely on pikas (*Ochotona* spp.), marmots (*Marmota* spp.), and carrion, and supplementing this diet with what little of nutritious value can be gleaned from the sparse vegetation in these arid and unproductive regions. Noteworthy is that a number of field investigators have reported "hot spots", i.e., small regions in which brown bears are frequently observed (e.g., within the Qiangtang Nature Reserve in Tibet, the Arjin Nature Reserve in Xinjiang, and Yeniugou and the Kekexili Nature Reserve in Qinghai) but that which differ in no obvious manner from vast regions surrounding them in which they are very rarely encountered. Most likely these are areas conducive to excavating pikas and/or marmots.

C. Brown bears in northeastern China

Brown bears in the forested northeast are larger in size (often about 200 kg, Ai 1992) than those in China's west. They inhabit a variety of mixed deciduous-conifer and purely coniferous forests, but are restricted to those areas distant from centers of human activity.

Status

A. Asiatic black bear

No well-founded wild population estimates for Asiatic black bear in China exist so far. Estimates of Hu and Hu (1998) are 12,175-12,499 for *U. t. mupinensis*, mainly in Tibet and Sichuan provinces, 3,500-4,500 for *U. t. thibetanus*, and 1,270-1,830 for *U. t. ussuricus* (mainly in Heilongjiang province with a total population 817-1,403).

Comparison with historic data suggests a general population decrease since the 1950s. Habitat loss is thought to be the major reason for the decrease, followed by poaching and illegal capture of bear cubs. Beginning in the 1950s, large amounts of forests were removed to fulfill the timber needs for economic construction. Bears often choose caves in big tree trunks to den during winter. Difficulty in finding denning sites after large-scale logging usually results in the loss of bears from cold, hunger, and diseases in the winter. For example, in the national industrial timber-producing forests of Heilongjiang province, the population estimate (1,171±298) of 1998 was substantially lower than that of 1992 (3,057±730), a more than 60% decrease in 6 years (Zhang 2002). In its southern range, in many heavily logged areas, bears are hard to find. Population insularization in various areas throughout its range also resulted from rapid human development such as road and power dam construction, mining and settlement expansion. Bear hunting was often a source of income and meat for some people in the forest and mountain areas before the enacting of the national wildlife protection law. People often searched in the woods to kill bears in their dens in winter. In the 1980s, in response to the initiation of businesses farming bears for bile, several thousand bears were removed from the wild to be placed in bear farms for bile extraction. Poor farming skills, especially those of small household facilities, led to high mortality rates during the early years of bear-farm development, and thus to unsustainable levels of capture of wild bears to maintain bear populations in farms.

The most recent national survey on terrestrial wildlife estimated a total of about 27,500 black bears (State Forestry Administration 2003), which is higher than all other estimates. This estimate partly resulted from the real population increases in some areas. Conservation efforts such as better wildlife protection law enforcement, improved

public awareness, setting-up of new nature reserves, and improvement of existing nature reserves, as well as other habitat protection and improvement projects such as the natural forest protection project and reforestation project may all contribute to the recovery of the wild bear populations in some areas in recent years. However, the apparent increase needs to be interpreted with caution. Although the population in some areas has increased, the same survey shows that in areas such as Anhui and Hainan the bear population has declined severely and may even have become extirpated.

B. Brown bears in western China

Guesses of the abundance of brown bears in western China (Table 1) have ranged from as few as ~3,400 to as many as >20,000 (combining Liu's 1996 number for Tibet with that of Zheng 2003 for Qinghai). Piao (1992) estimated about 2,800 in Tibet. The recent national survey on terrestrial wildlife estimated a total of about 6,300 (SFA 2003). Given the size of the area and difficulty of obtaining a reliable estimate, it is not surprising that abundance remains essentially unknown. Population trends over recent years are also unclear. Schaller (1998) believed that numbers were considerably reduced compared with early in the 20th century, whereas many local officials and pastoralists believe brown bears have increased in recent years. The national survey (SFA 2003) suggested population declines in Yunnan, Tibet and Gansu.

Brown bears in China's west seem incompatible with dense human habitation, but do coexist with low intensity pastoralism. Direct killing for medicinal use seems rare, but brown bears are feared and disliked by almost all local people in western China, and are often killed out of concern for possible human conflicts. Direct attacks on humans are uncommon, and even livestock depredations (although they occur) are rarely reported as a major problem by pastoralists. In contrast, bears are often reported to

damage pastoral encampments and to raid stored food. Although local public support for conservation of brown bears in western China is essentially absent, weapons are also rare (firearms being illegal among the general public, and infrequently carried even by law enforcement personnel). Considerable habitat remains for brown bears in western China, although the widespread government policy of poisoning pikas may reduce habitat capability and potentially kill bears through secondary poisoning.

C. Brown bears in northeastern China

Brown bears inhabit the Da Xinganling, Xiao Xinganling ranges as well as associated forestry areas of northern Heilongjiang and associated Inner Mongolia near the Heilongjiang [Amur] River (Zhang 2002). This population is probably contiguous with that in Russia. There are also small, evidently isolated and declining populations in Jilin (Feng et al. 2001). It is unclear whether any persist in neighboring Liaoning (Piao et al. 1996, Zou and Ma 1997). Guesses at the total number of wild bears ranged from <500 to >2,500 in the early 1990s, and from <500 to almost 1,000 in the late 1990s. The national survey of 2003 estimated a total of about 1,000. Timber cutting and poaching are reported as continuing threats to all these northeastern populations. Most sources believe the bear population declined substantially during the 1980s and 90s (Zou and Ma 1997, Zhang 2002).

Human-bear relationships

Bears in traditional Chinese thought were regarded as symbols of strength and bravery. In the ancient times, bear parts were often presented as precious tributes to emperors and high officials. Simultaneously, bears were one of the major target animals sought by hunters, especially during winter when people had less farming work and more spare time. Denning bears were the most vulnerable. Bear carcasses were an

important source of meat and income for some local people in the remote and mountainous areas, especially in the years before 1989 when laws on wildlife protection were absent and the implementation of other wildlife protection regulations was poor.

Dishes prepared from bear parts, especially bear paw, are still commonly regarded as particularly invigorating and nutritious. Bear bile has long been an important traditional Chinese medicine believed to be efficacious in curing fever, cough, convulsion, and other ailments. In the past, wild bears were often sought for their gall bladders to meet the demand for gall. Bear farming and bile extracting skills was introduced from North Korea to the northeastern province of Jilin at first in the early 1980s, and rapidly spread to other provinces such as Heilongjiang, Liaoning, Sichuan, and Yunnan to form quite a lucrative business.

Bear-human conflicts consist mainly of bear depredation on crops. Crop depredation appears to have been intensifying in recent years in some areas, especially in areas where bear populations have evidently recovered. Major reasons for this are improper and expanding farming practices. Because crop productivity is relatively low in the remote and often steeply-sloping mountainous areas of bear distribution, large areas of land are needed for human subsistence. People have moved into bear habitat areas at high elevations on mountain slopes or deep within bear habitat for farming, which usually worsens the conflicts. Bear attacks on livestock and marauding of property also occurs in some cases. Bear attacks on humans are very rare, but have been documented. For example, during 2003–04, 6 cases of Asiatic black bear attacks on human were reported in Sichuan province. Although reasons behind are not fully clear, displacement and severe stress caused by habitat destruction, human construction and development activities are believed to be important factors.

Commercialism of bears

Commercial bear farming (both by government and private organizations) is an important economic activity in China: as of the early 1990s, there were an estimated 8,000 Asiatic black bears as well as lower numbers of sun and brown bears held in commercial breeding facilities (Zhang and Xu 2004). Capture of young bears from the wild is illegal and from most reports, has become uncommon as captive facilities have improved breeding techniques. In recent years, national and provincial authorities have acted to close-down small, poorly-run bear farms, and consolidate bear farming at larger, more easily monitored operations. However, a small number of wild-born bears are still occasionally reported captured (Green et al. 2006, G. Cochrane, Animals Asia Foundation, HK, unpublished data). Gall is routinely extracted from adult bears in captivity, and there is consensus that bear farming is economically viable, and that sufficient amounts are now being produced that the retail price gall (at least from farmed animals) has recently declined. In recent years, there has been a trend toward using bear bile not only for medicine, but also used to produce other commodities such as shampoo and cosmetics. This trend prompted the joint issuance by 5 ministries and administrations of the Chinese government in 2004 of a notice to strengthen the conservation of bear and management of medicinal products, limiting the use bear bile only to key medicinal products.

More pertinent to conservation of wild bears, there is also an unresolved dispute about whether propagating bears in captivity aids or obstructs *in situ* conservation. Chinese government authorities claim that bear farming reduces the incentive to poach wild bears; some non-governmental groups claim that by encouraging the marketing and use of bear products, the opposite effect is produced. There is logic to both

arguments, but we have yet to see empirical data that could be used to support either. We suspect that the overall impact of captive breeding on wild bears in China is neutral, and that conservation efforts aimed at wild bears must focus on conditions in the wild.

Present management system

Under the National Wildlife Law of 1988, sun bears are categorized as 1st class, and both brown and Asiatic black bears are categorized as 2nd class protected species. In practice, the distinction between 1st and 2nd class is unimportant: taking, raising, selling and transporting is permissible only under permit by national (for 1st-class) or provincial (2nd-class species) authorities. Permits to remove bears from the wild are almost never issued directly to individuals or institutions, although small quotas are issued usually to prefectural (and sometimes county) forestry bureaus for dealing with problem bears. Usually local forestry authorities will organize the removal of the problem animals, often by killing. China has rapidly increased the number and area covered by nature reserves, although many of these have yet to initiate any protective measures, and even the best-managed reserves must share land-use decisions with local governments which often prioritize short-term economic development over biodiversity conservation.

That bears are legally protected is known by almost all, but this knowledge has done little to improve attitudes toward bears. Most agriculturalists who suffer crop damage or pastoralists who lose sheep to bears obtain little technical or financial assistance; the government essentially asks them to make personal sacrifices on behalf of the entire country. Research into specific modes of bear-human conflicts has only begun and is poorly funded; measures to reduce bear-human conflicts are essentially absent in China.

Recommendations for the future

Given the tremendous importance of China for conservation of bears worldwide, the paucity of reliable research into their status, habitat needs, and practical measures to reduce bear-human conflicts in China is noteworthy. Little study has been conducted on bears in China and only a few research projects are currently under way. Chinese scientists have made substantial achievements in improving their capability of raising bears in captivity and producing bear gall for commercial use. Meanwhile, controversy over the ethics of bear farming has detracted from focusing on the great need to better understand and manage China's *in situ* bear populations. Many bear populations are declining; it is likely that better habitat protection and wildlife protection law enforcement are still indicated here (nature reserves notwithstanding). Rapid economic development has intensified bear-human conflicts on land resources. Special efforts should be put on avoiding further insularization of bears (e.g. in nature reserves). Other bear populations may be increasing, requiring development and implementation of comprehensive plans to make the compromises that cohabitation of bears and people necessarily requires.

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Table 1. Population estimates from Chinese sources.

Time Period	*U. thibetanus*	*U. arctos*		Source
		NE China	W China	
1980s	-	-	1,801-3,841[c]	Piao (1992)
Early 1990s	12,000-18,000	1,000	5,430-6,570	Wang (1998)
Early 1990s	9,800-16,200	500-600	5,400-6,500	Li et al. (1996)
Early 1990s	3,663	1,188	-	Zou & Ma (1997)[a]
Early 1990s	46,528	2,570	12,213	Piao et al. (1996)[b]
Early 1990s	17,478-19,785	550	3,412-6,074	Hou & Hu (1997)
1994	17,458-19,548	560-650	5,350-6,642	Ma et al. (1998, 2001)
1994	14,062	-	16,648	Liu (1996)[c]
Late 1990s	-	-	2,984-4,000	Zheng (2003)[d]
Late 1990s	27,888	982	13,925	Piao et al. (1996)[e]
Late 1990s	817-1,403	488-744	-	Zhang (2002)[f]
Late 1990s	~ 28,000	~ 1,000	~ 6,300	SFA (2003)
Unclear	19,835-23,247	668-811	5,438-6,641	Hou et al. (unpublished)[g]
Unclear	17,479-19,785	700-800	4,910-6,272	Hu & Hu (1998)

[a] Provinces of Heilongjiang, Jilin, and Liaoning only

[b] Also published by Fan and Song 1997

[c] Tibet only

[d] Qinghai only

[e] Hand-written on original 1996 report; numbers also published in Beijing Evening News 2004.

[f] Heilongjiang only

[g] China West Normal University, Nanchong, Sichuan

Figure 1. Approximate geographic distribution of 3 bear species in mainland China, as of the late 1990s. Information is from broad-scale terrestrial wildlife surveys conducted by provincial and county forestry workers as part of a nationally-organized effort. Symbols represent counties where the species was reported as present; density of symbols does not necessarily reflect relative abundance of bears.