

# Improving the Welfare of Bile-farmed Asiatic Black Bears (*Ursus thibetanus*): A Problem of Culture and Enforcement

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## Introduction

The bile of the Asiatic black bear (*Ursus thibetanus*) has been a feature of traditional Chinese medicine since the year 659, and it is used today in more than 120 medicinal products (Feng *et al.*, 2009). However, confining more than 7000 of these animals in small cages to collect the bile, via a free-dripping fistula between the gallbladder and abdominal wall of each animal, has a severe detrimental impact on their welfare. The following essay discusses recent publications concerning the progress and setbacks in improving the welfare of these bears.

## Discussion

In the early 1980s, the Chinese government decreed it illegal to hunt wild Asiatic black bears (ABB) for their bile, but this led to more farming of bears instead (Bacon, 2008). The bile extraction methods are unsanitary and cause chronic inflammation, with subsequent problems such as peritonitis, visceral abscess formation or hepatic neoplasia, the latter being responsible for 44% of deaths in bears rescued through the Animals Asia Foundation (AAF) (Bacon, 2008). In 2000 the AAF signed the China Bear Rescue Agreement (CBRA) with the Chinese Forestry Department and the Wildlife Conservation Association. One of its short-term goals – to close down the worst bile farms in Sichuan Province – was achieved in March, 2008 (Feng *et al.*, 2009). Bacon (2008) also reported that to date, the AAF had rescued 247 bears – halfway to the goal of 500 set out in the CBRA (Feng *et al.*, 2009).

While farming bears for their bile is now illegal in Vietnam, bile has been used in traditional Chinese medicine for more than 1300 years, so it is difficult to make the same cultural change in China (Bacon, 2008; Feng *et al.*, 2009). Feng *et al.* (2009) reviewed the pharmacological applications of bear bile and its suggested alternatives, used to treat conditions of the heart, liver, gallbladder and eyes. The bile of certain ursids has a significantly higher concentration of ursodeoxycholic acid than that of other vertebrates, and this chemical is believed to give bear bile its healing properties. It is also synthesised and used in Western medicine to treat certain hepatic and biliary diseases. Nonetheless, the bile of pigs and rabbits has demonstrated similar – and sometimes greater – medicinal efficacy than that of bears. Coupled with the pre-existing use of plants of the genus *Coptis* in traditional Chinese medicine to treat similar diseases as those treated with bear bile, there is increasing published support for the feasibility of bear bile replacements.

The ABB is listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and thus it, its parts and its derivatives cannot be moved internationally without official, registered permission (*Appendices I, II and III*, 2008). However, a study by Nijman & Shepherd (2008) demonstrated that these laws are not being enforced (in Myanmar at least). Four wildlife markets in Myanmar were surveyed on seven occasions over seven years, and 1200 bear parts (excluding gallbladders) were counted. It was calculated that these parts came from at least 215 (mostly Asiatic black) bears. Three of the markets were located on the country's border, and prices were quoted in the currencies of adjacent countries (China or Thailand). Sellers also admitted that their buyers were from these countries and that they knew what they were doing was illegal. Furthermore, their stalls were openly displayed to the public – all of which indicates that the bear parts were destined internationally. This also proves that the sellers did not have permits and that the law against such trade was not being enforced by the Burmese government at all.

Where the prohibition of international trade in bear parts is enforced, there is a need to identify the species in seized bile and gallbladders, as livestock species are commonly used as cheaper and fraudulent substitutes (Carvalho *et al.*, 2008). Also, the trade in bear species of differing conservation status carry different fines. In Myanmar, for example, harming, killing

or trading a sun bear (*Helarctos malayanus*) carries a larger fine or longer gaol sentence than for similarly treating an ABB (Nijman & Shepherd, 2008). Addressing these needs, Carvalho *et al.* (2008) designed primers that were able to amplify *U. thibetanus* partial cytochrome b DNA sequences from bile crystals. This is an improvement on previous analysis techniques of bear bile, which could only genetically determine to family level, and species identification was estimated through the relative concentrations of bile acids (Chang *et al.*, 1997).

Carvalho *et al.* (2008) were limited in their subspecies identification due to insufficient heterology observed among the three (of seven) subspecies of *U. thibetanus* they sequenced. *U. thibetanus* is listed as vulnerable on the International Union for Conservation of Nature and Natural Resources red list, but when subspecies were specified prior to 1997, the Baluchistan bear (*Ursus thibetanus gedrosianus*) was ranked as critically endangered, so provides a good example of the need to be able to identify illegally traded bear parts to the subspecies level (Garshelis & Steinmetz, 2008). Nijman and Shepherd's (2008) study was also limited by identification, as only half of their counted bear parts could be visually identified to species level, and the rest were just assumed to be also from ABBs. Furthermore, their estimate of the number of bears killed for the markets assumed an even distribution of the parts among sellers, and could not consider the gallbladders (due to their potentially being of any species), so their estimate is probably low. One study of 183 Taiwanese bear-bile-containing medicinal products showed that only 31% were derived purely from bears (Chang *et al.*, 1997). The unique therapeutic effects of bear bile medicine Feng *et al.* (2009) described could, therefore, be considered to be due largely to a placebo effect.

## Conclusion

Improving the welfare of incarcerated Asiatic black bears is a difficult process requiring significant cultural change. Recent research has reported on the progress and hindrances, as well as highlighting the need for further research. This will only strengthen the pressure on bear bile farmers and consumers through to lawmakers and enforcers.

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