



Chinese, Koreans and Japanese are not alone in using Tiger parts as medicine. In India, Tiger fat is used to treat leprosy and rheumatism. In Lao PDR, Tiger claws are used as a sedative, teeth for fever and nose leather for dog bites. Tiger bone is used in Vietnam in a balm to alleviate rheumatism and general weakness. But it is the demand for medicines derived from ancient Chinese traditions that drives today's market for Tiger parts.

Nearly every part of a Tiger has a prescribed benefit according to the tenets of Chinese medicine and folklore. The eyeballs are used to treat epilepsy; the tail for various skin diseases; the bile for convulsions in children; whiskers for toothaches; and the brain for laziness and pimples. Of all Tiger parts, the bones are the most valued. Tiger bone is most commonly used to treat rheumatism, but other indications are weakness and stiffness or paralysis, especially in the lower back and legs.

Tiger bone is ground into powder before being made into pills, plasters and decoctions containing herbs. It is also cut into segments and soaked in wine. Drinking 10ml of Tiger wine twice daily is said to relieve "wind" ailments such as headaches and "cold" ailments such as rheumatism. The active ingredients in Tiger bone are calcium and protein, according to Chinese medical texts. Clinical research indicates that Tiger bone produces an anti-inflammatory effect in animals with induced arthritis, an analgesic effect in rats and a calming effect in mice. Research is under way in Hong Kong to document any medical efficacy unique to Tiger bone as compared to other mammal bones.

The usual dosage for Tiger bone taken orally to treat rheumatic pain is three to six grams daily. At this rate, a daily user of Tiger bone would consume one to two kilos of bone per year. Extrapolated further, the world's remaining Tigers would provide, at most, a year's supply of medicine to 125 800 daily users – the equivalent of far less than even 1% of China's human population.

## **The Bone Trade**

The data included in the report comes mostly from customs statistics and annual reports of member countries of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). There are many limitations to the available data, including that some CITES parties have a policy of not reporting trade in Tiger bone and Tiger bone derivatives either because the products are not readily recognizable as such or because they are assumed to be counterfeit.

Other limitations are that some CITES parties report Tiger products in varying forms and units of measure; do not report seizures of smuggled goods; and file incomplete or only occasional annual reports. Furthermore, countries of export are often missing from CITES and Customs data; not all Tiger range or consumer states are CITES parties; some goods claiming to contain Tiger bone do not; and since the international trade in Tiger bone is illegal in all but a few instances, smuggling is a primary means of conveyance and therefore largely unrecorded.

Information about Tiger bone export from range states is poor or often non-existent. Many of the states are not wealthy in terms of per capita GNP or in resources to police poaching and smuggling. These factors and the high prices paid for Tiger bone compared to individuals' incomes pave the way for a black market. Profits from the sale of an average 17kg Tiger skeleton can equal more than 10 years' salary in seven of the 14 Tiger range states.

China, one such range state, plays a multiple role of exporter, importer and consumer. CITES data show China exported more than 27 million units of Tiger medicines and wine to 26 countries and territories during 1990–1992. Of the products with reported origin, 460 000 allegedly came from Tiger bone stocks before CITES entered into force in China in 1981; 865 from captive-bred animals; and 6200 from wild Tigers. South Korea's CITES data indicate that China exported a further 1563kg of Tiger bones to that country in the first nine months of 1993. Some Chinese officials believe that no South China or Siberian Tigers remain in the country.

Indonesia, once home to the now extinct Javan Tiger and where the Sumatran Tiger is in severe decline, reported no trade in Tiger bone in its CITES annual reports from 1980 to 1991. However, South Korea customs data indicate that Indonesia supplied the majority of its imported Tiger bone from 1970–1993. Of the 3994kg reportedly exported from Indonesia, at least 2619kg were probably exported after the country became a CITES party in 1979. Other data indicate Indonesia exported Tiger bone to Taiwan in 1984 and imported Tiger medicines from China in 1991 and 1992.

In 1990, Indonesia passed new conservation legislation, now used as the basis for protecting endangered species such as the Tiger. But while there are nature reserves with Tigers, little is known about the adequacy of protection and at least 14 Tigers are lost annually to poaching and pest management.

Malaysia, Nepal, Russia and Thailand – four of the seven remaining range states that are CITES member countries – have reported no

trade in Tiger products. However, such trade in each of these countries is documented elsewhere. Malaysia, for example, reportedly exported Tiger products to Taiwan and imported some from South Korea. In addition, medicines claiming to contain Tiger bone are widely available in Malaysia's large towns.

Russia is a key supplier in the international Tiger bone trade, according to investigations by TRAFFIC and other organizations. The opening of borders and subsequent weakening of enforcement along with the introduction of a free-market economy and dramatic drops in personal incomes has meant disaster for Russia's Tigers. In the winter of 1993–1994, Russia's Tiger population may have lost 25% of its total number, now estimated at only 150 to 200 animals.

The remaining three Tiger range states that are CITES members are Bangladesh, which does not appear in any trade statistics; Vietnam, which only joined CITES in 1994; and India, which has reported limited trade. The other five range states -- Bhutan, Cambodia, Lao PDR, Myanmar and North Korea -- are not CITES members and all but North Korea feature in the Tiger bone trade. In Cambodia, Tiger products were being sold in Phnom Penh Poipet in early 1994. In Myanmar, at least 50 to 100 Tigers were killed each year in the 1980s for export whole or in the form of bone "jelly" and skins.

The major importers are Japan, Singapore, South Korea, Taiwan and the USA. Others include Belgium, Canada, Hong Kong and Macau. In turn, some of these serve as major exporters. Hong Kong was a shipment point for 214 164 units of Tiger products entering the USA between 1982 and 1991.

In South Korea, CITES came into force in October 1993 but the domestic trade in Tiger bone medicines is scheduled to remain legal until March 1995. There is ample evidence of a robust domestic trade in Tiger derivatives for medicinal use. For example, manufactured Tiger bone medicines can be seen in nearly every pharmacy in Seoul. The country has kept a customs category exclusively for Tigers since 1970 so it provides the most comprehensive documentation of Tiger bone trade in all the consuming countries. It has exported products to the USA and imported 8981kg of Tiger bone, principally from China, Indonesia and Thailand.

## Conclusion and Recommendations

Range states and consumer nations alike have strengthened and continue to strengthen related domestic laws and law enforcement. In Hong Kong, for example, the possession of medicines containing or claiming to contain Tiger ingredients became illegal in April 1994.

There are other encouraging initiatives as well. In March, all range states except China, Lao PDR and North Korea joined together to create The Global Tiger Forum. The 11 participating range states pledged to co-operate to police illegal trade in Tiger bone, discourage commercial consumption of Tiger bone and Tiger derivatives and to encourage other countries to enforce international measures aimed at protecting Tigers.

For the most part, however, existing control of the illegal trade in range states is minimal at best because most countries are poor or, as in the case of Cambodia and Russia, political upheaval has left little or no infrastructure and still less monetary resources for wildlife protection. The only certainty is that wild Tiger populations cannot sustain even limited trade in their parts. Given the fragmented habitats and small isolated populations, many of the remaining populations of Tigers will require rigorous protection and management just to survive continuing genetic isolation, much less poaching.

If wild Tigers are to survive the commercial demand for their bones, the question of how to meet the medicinal demands of Asian people dedicated to the use of Tiger bone medicine cannot be ignored. Consumers of Tiger derivatives are understandably resistant to giving up medicines that have eased chronic pain for more than a millennium. But trade in Tiger bones and Tiger medicinals represents an imminent threat to the species' survival. Solutions must be immediate, drastic and unprecedented in international collaboration and scope.

TRAFFIC's recommendations include the following:

- Relevant countries that have not yet joined CITES should be encouraged to do so.
- Effort should be focused on improving domestic legislation within countries, including ensuring that penalties for breaking existing trade laws should be sufficiently high to act as deterrents to those tempted to risk illegal trade.
- In enforcement, effort should be concentrated on implementation of CITES regulations during border checks. In

the context of domestic trade, relevant laws should be given a higher official priority, more financial resources, better technology and increased personnel to implement and enforce them. In addition, undercover investigations of illegal trade should be considered.

- The judiciary should be made aware of the seriousness of Tiger poaching and the trade in Tiger bone. Moreover, information should be collected on convictions of Tiger poachers and illegal traders so that lenient sentences may be advised against in the future and appropriate sentences serve as precedents in later cases.
- Techniques for forensic identification of Tiger bone in products should be developed.
- Traditional medicine communities in consumer countries should be involved in determining future strategies for reducing the use of Tiger bone.
- Before promoting substitute medicines, further research is needed to determine the status of the substitute species in the wild.
- The Global Tiger Forum should continue to meet, establishing itself as a symbol and means of international co-operation for Tiger conservation and providing a forum for exchange of information from global experts on the subject. Those Tiger range states that are not yet members should be encouraged to join.

*TRAFFIC is the wildlife trade monitoring programme of WWF–World Wide Fund For Nature\* and IUCN–The World Conservation Union. TRAFFIC works in co-operation with the CITES Secretariat.*

*\*WWF is known as World Wildlife Fund in Canada and the USA*