VOL. 16 NO. 3

TRAFFIC BULLETIN

AFRICA'S IVORY STOCKS

MARKET FOR BEAR GALL BLADDERS IN EAST ASIA

US MEDICINAL PLANT TRADE

The Journal of the TRAFFIC Network [illegible] on the trade in wild animal and plant resources

MARCH 1997

The *TRAFFIC Bulletin* is a publication of the TRAFFIC Network, a joint programme of WWF the World Wide Fund for Nature and IUCN the World Conservation Union. TRAFFIC's purpose is to help ensure that wildlife trade is at sustainable levels and in accordance with domestic and international laws and agreements. This is achieved through the investigation, monitoring and reporting of such trade, particularly that which is detrimental to the survival of flora and fauna and that which is illegal.

The *TRAFFIC Bulletin* publishes recent information and original papers on the subject of trade in wild animals and plants, and strives to be a source of accurate and objective information.

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BULLETIN

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Turkey and Latvia Join CITES

Turkey acceded to CITES on 23 September 1996, effective 22 December. Latvia acceded to CITES on 11 February 1997, effective 12 May, and brings to 135 the total number of Parties to the Convention.

Source: CITES Secretariat

New Wildlife Trade Legislation in the European Union

The EU plays a significant role in the international trade in wildlife and improved legislation to govern such trade in the region has been a conservation priority for several years. After many years spent in developing and refining comprehensive new draft legislation, the *Council Regulation (EC) on the Protection of Species of Wild Fauna and Flora By Regulating Trade Therein* was adopted on 9 December 1996.

In 1991, the European Commission tabled a proposal to replace the existing wildlife trade legislation, *Council Regulation (EEC) No. 3626/82*, which had become outdated since its entry into force in 1984. More than five years of work followed, incorporating contributions from the Commission, the Parliament, Member States, and many NGOs, including TRAFFIC Europe and WWF, to develop the new legislation. Like the Council Regulation of 1984, the new law is intended to apply the provisions of CITES in all EU Member States. It aims to address the many irregularities and weaknesses of the earlier legislation, which had become increasingly apparent, especially since the creation of a Single Market (allowing free movement of trade across EU internal borders) in 1993.

Salient improvements of the new legislation include:

- clarification of procedures to be followed by personnel involved in its application, both within individual Member States and the Commission and provision of a series of comprehensive definitions to harmonize implementation and facilitate co-operation among Member States.

- application of stricter and stronger controls at the EU's external borders, given the abolition of Customs at internal border crossings, and requirement that all designated ports be provided with sufficient and adequately trained staff. In particular, the law requires that a specific limited number of ports of entry and departure be designated and used for wildlife shipments.

- provisions to prevent applicants turning to other Member States to obtain Community CITES documentation after having been refused such documentation in a Member State. Further measures to address enforcement problems include the requirement of the EU CITES Management Authority receiving an application to re-export wildlife specimens imported into another EU Member State to check with the Management Authority of the importing country before issuing a re-export certificate.

- requirement for Member States to set penalties for specific infractions - hitherto not a condition.

- requirement to include provisions relating to seizure and confiscation. Live, listed specimens arriving in Community ports of entry without valid documentation must be seized and may be confiscated; this ruling also applies to shipments in transit. Specific recommendations are provided regarding the disposal of confiscated specimens: carriers of live animals may be held responsible for returning specimens imported without the requisite documentation to their departure points, or convicted persons required to pay for the return of these specimens. Member States must also ensure that confiscated specimens are not returned directly to the party who committed the offence. Under 3626/82, there were no measures to prevent perpetrators of offences to buy back wildlife that they had traded illegally.

- improved flexibility to respond to changes in conservation status of species, by adding to, or removing from, the list of species governed by the Regulation; non-CITES species that meet specific criteria have been added.

- requirement for import documentation to be checked at the first point of entry (previously not a requirement for a transit shipment), with improved guidelines provided for examination of documents during importation, export, re-export and transit, and in some cases, the requirement of physical inspection of the goods.

- the ability of Member States to control internal trade in species to be extended to include "purchase, offer to purchase, acquisition for commercial purposes and use for commercial gain". Member States may also prohibit the possession of certain specimens.

- the creation of an Annex D listing species which are imported into the EU in such numbers as to warrant monitoring.

- the requirement of Member States to inform citizens and enforcement agencies of the dictates of the new legislation. One of the most significant problems relating to the former legislation was as a result of a lack of understanding on the part of the general public and agencies which enforce the regulation.

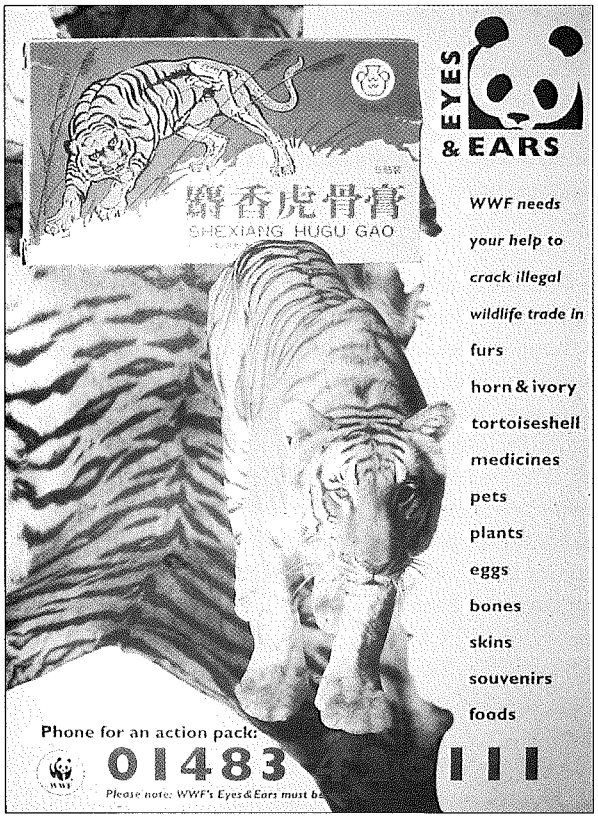
Following adoption of the legislation, it is essential that Member States allocate sufficient resources to allow its implementation. In order to aid this process, TRAFFIC Europe, WWF and the European Commission are collaborating in an information campaign to familiarize travellers, traders and enforcement authorities, in particular, with the new law. The campaign will include advertising in all 15 countries of the EU and will aim for a high profile launch from May, prior to the peak summer travel season and to the entry into force of the new law on 1 June 1997.

Source: Elizabeth Fleming and Karen Flanders, TRAFFIC Europe

The Eyes Have It

On 8 August 1996, WWF-UK launched its "Eyes & Ears" campaign in London, aimed at raising public awareness about the illegal trade in wildlife and to encourage their involvement in countering illicit activity. An 'action pack' was developed to illustrate the types of illegal trade to be found in the UK and abroad, and how to distinguish legal from illegal trade. Other materials in the pack include a poster (see below), window sticker and report forms on which the public can notify WWF of details of any suspicious activity they encounter. The public are not encouraged to actively investigate, but rather to be aware and report anything they may come across which arouses their suspicion. All responses are collated, assessed and investigated where relevant. The information is disseminated to the pertinent authority once the details are clarified. To date, one enforcement action has been undertaken as a direct result of "Eyes & Ears" intelligence information, which entailed a raid on an antique shop in London. Items seized included Tiger *Panthera tigris*, Polar Bear *Ursus maritimus*, Puma *Puma concolor* and reptile skins, and carved elephant tusks and pieces. Numerous investigations stemming from the public's response are ongoing. This demonstrates that the public can make an important contribution and that community involvement is a critical part of law enforcement. The "Eyes & Ears" have it, and illegal traders will have to look out for them from now on. I am sure that the smugglers are shaking in their snakeskin boots.

Crawford Allan, Enforcement Assistance Officer, TRAFFIC International



C. Allan/TRAFFIC

Focus on

UK

C. Allan/TRAFFIC

On 3 September 1996, 124 rhino horns were seized in what is the largest-ever single seizure of its kind; a few days earlier, on 31 August, another three rhino horns were recovered as part of the same operation. The horns were being stored in garages in London, UK. Most of the horns have been identified as deriving from White Rhinos *Ceratotherium simum*, with a smaller amount of Black Rhino *Diceros bicornis* horn and 8 Asian horns. The specimens range in sizes of up to one metre in height and between 2.5 kg and 8 kg in weight, with a total weight of 240 kg. Their origin has not been confirmed. Four suspects, all British nationals, were arrested for offences under the *Control of Trade in Endangered Species Regulations 1985* and the *Theft Act* and were released on bail. The trial is pending.

In the UK, rhino horns are not included under the general exemptions to the legislation, even for pre-Convention specimens. Rhino horn cannot be traded, kept for sale, displayed for sale, and transported for sale, unless an exemption certificate has been issued by the UK Management Authority. These are only issued for genuine and valuable works of art (libation cups, for example). Penalties for illegal sale alone bring low penalties in the UK: up to two years in gaol and a £5000 (US$8000) fine, compared to up to seven years' imprisonment, and unlimited fines that may be faced if Customs uncover an international smuggling element.

Source: TRAFFIC International

SWEDEN

On 18 October 1996, at Arlanda airport, Sweden, 1000 Horsfield's Tortoises *Testudo horsfieldii* (App. II) were imported by a Syrian national travelling from Tadzhikistan; the animals were in a poor condition, at half their normal weight, and at least 10 were dead. The importer had applied to the CITES Management Authority (MA) in Sweden for an import licence for the reptiles in September 1996; the specimens were imported while the application was pending, awaiting confirmation that they had been captive-bred. On arrival at the airport, the importer contacted the MA to find that the import licence had not yet been granted, and was advised to arrange for repatriation of the animals as permission to import was unlikely to be granted as neither CITES nor national legal requirements had been met; re-export could take place only after a veterinary inspection. Tadzhikistan was notified that the tortoises would be repatriated if found fit enough for the journey; a full examination of the shipment by a veterinarian, assisted by a reptile specialist, however, found that the tortoises were not in a fit condition for re-export. Attempts to place them in rescue centres in Sweden were unsuccessful and a request to the EU Commission to grant a derogation from the relevant rules of importation for this case was turned down. An offer by the Tortoise Trust of the UK to finance their re-exportation was declined because the animals were not considered strong enough to travel: it was estimated that they had been taken from their natural habitat in April or May and that the long period in captivity and the journey from Russia (in transport that did not conform to IATA regulations) had weakened them such that their weight on arrival in Sweden had been at half that of healthy specimens of this species; further, as well as being considered irresponsible to

Enforcement

return the tortoises to the wild in such poor condition, it was deemed too risky to expose healthy natural populations to potential disease. The tortoises were killed; a post-mortem showed that all specimens were infected with salmonella.

Source: Memorandum based on 26 November 1996 submission of CITES Management Authority, Sweden, to the Parliamentary Ombudsman

USA

Wolfgang Michael Kloe, of Rauenberg, Germany, was sentenced on 10 January 1997 in the USA to 46 months' imprisonment for conspiring to smuggle rare and endangered reptiles into the USA and Canada. An accomplice, Simon David Harris, of Blairgowrie, South Africa, was put on three years' probation. Both were charged with offences related to the unlawful importation in August 1996 of 61 Madagascar Tree Boas *Sanzinia madagascariensis* (App. I), and 4 Spider Tortoises *Pyxis arachnoides* (App. II) that had been transported in a suitcase to Orlando Airport, from Madagascar, via Frankfurt, Germany. Kloe was arrested the following day after arranging to take delivery of the reptiles, to sell to dealers and collectors. Four others - three German nationals and a Canadian - have also been charged (but not apprehended). A total of 107 Madagascan Tree Boas, 25 Spider Tortoises, 51 Radiated Tortoises *Geochelone radiata* (App. I) and 2 Madagascar Ground Boas *Acrantophis dumerili* (App. I) are reported to have been smuggled to the USA by these individuals over a three-year period.

An internationally prominent aviculturist has been sent to gaol for nearly seven years and heavily fined, after being found guilty of leading an international parrot smuggling conspiracy.

On 18 November 1996, in a federal court in Chicago, Illinois, Tony Silva was charged with conspiracy to smuggle more than 300 exotic birds and seven monkeys into the USA for commercial gain (*TRAFFIC Bulletin* 15(2):95; 16(1):32). He was sentenced to 82 months' imprisonment without parole, fined US$100 000 and ordered to serve 200 hours' community service following the prison term. Gila Daoud, Silva's mother, who assisted in arranging transport of the birds, was sentenced to 27-months' imprisonment, followed by a one-year supervised release with concurrent 200 hours of community service.

Silva arranged for scores of endangered birds to be smuggled from South America to the USA, after the specimens had been drugged and packed into plastic tubes. Many of the birds, including Hyacinth Macaws *Anodorhyncus hyacinthinus* (App. I), died during transport.

Between 2000 and 5000 Hyacinth Macaws are believed to remain in the wild today: according to prosecutors, Silva may be responsible for the demise of 5% to 10% of the entire population of this species.

WWF/Martin Harvey

Sources: US Dept of Justice Press Releases, 16/22 August 1996/10 January 1997; TRAFFIC USA

Looking for Trouble

In a drive to curb illegal trade in Tiger parts and other wildlife goods, in October 1996 WWF/TRAFFIC India launched a nationwide awareness campaign. "Don't Buy Trouble" is designed to inform consumers of wildlife and related articles that are banned from trade under the *Wildlife (Protection) Act 1972*. Co-operation has been secured from many travel agencies to advise clients on which items may not be exported, and posters, with information in both Hindi and English, have been affixed at strategic locations at Indira Gandhi International Airport in New Delhi, with similar plans for other airports in the country. The Ministry of Tourism has supplied airlines in India with disembarkation cards which have been amended, in five foreign languages, to include information on illegal wildlife trade in India. Additionally, a one-minute television spot on the live bird trade in India is being aired free of charge.

In parallel, TRAFFIC India has proposed a range of activities to curb illegal wildlife trade during the coming year. These include establishment of an enhanced network of informers on illegal trade, the creation of a databank holding comprehensive information on the Tiger trade and on traders. In collaboration with Government agencies in India, TRAFFIC staff are assisting in the establishment of training programmes for key personnel in enforcement agencies, such as the police, customs, forestry and paramilitary forces. TRAFFIC India has recently published a species/products identification manual to assist in this process. Another priority is strengthening wildlife forensic capabilities in the country, with plans to bring together representatives of South Asian countries to discuss transborder issues, including the control of smuggling of Tiger parts and other wildlife.

Outfits established by WWF-India to collect information on the state of Tiger habitat and trade, in particular of Tigers, are yielding valuable information. Tiger Cells, as they are known, were recently set up in Orissa and Uttar Pradesh and important seizures and information on wildlife trade in the State have been reported (see page 114). Establishment of Tiger Cells in Maharastra, Madhya Pradesh, West Bengal, Andhra Pradesh, Assam and Tamil Nadu is nearing completion. Action plans for improving controls in Corbett and Dudwa Tiger Reserves and the adjoining Tiger habitats are being drawn up with the co-operation of the Chief Wildlife Warden and field staff, and dialogue has been initiated with the Ministry of Environment and Forests on transboundary issues, with deliberations underway to solve the problems faced by the Tiger in and around Dudwa and along the Indo-Nepal border.

Sources: WWF India's Tiger Update, 1(4), October 1996; TRAFFIC India

Border Agreement - Vietnam and Lao PDR

The first bilateral discussion between Lao PDR and Vietnam on conservation issues has resulted in agreement to work together to protect the mountain range which separates the two countries.

At a three-day meeting hosted by the National Environment Agency of Vietnam's Ministry of Science, Technology and the Environment, held in January 1997 in Quang Binh Province, senior and local officials of Vietnam and Lao PDR made recommendations to their Governments on how to further conserve the Northern Truong Son area, which includes three provinces in Vietnam (Nghe An, Ha Ting and Quang Ninh) and Borikhamsai and Khammoune provinces in Lao PDR. The area is considered by scientists to be the most important natural area in the subregion because of its high diversity of plants and animals, particularly endangered species.

Vietnam's scientists at the meeting also recommended the expansion of the country's Phong Nha Nature Reserve in the Northern Truong Son area - thought to be the only area in the world with healthy populations of two of the most endangered primate species: the Douc Langur *Pygathrix nemaeus* and the Ha Tinh Langur *Trachypithecus francoisi hatinhensis*.

The meeting was sponsored by the United Nations Development Programme through its subregional biodiversity conservation project which is being implemented by WWF.

Source: United Nations Development Programme/WWF Press Release, 24 January 1997

Bear Symposium

The Second International Symposium on the Trade of Bear Parts, to be held from 21 to 23 March 1997 in Seattle, Washington, USA, will allow law enforcement officials, wildlife management officials, conservationists and animal protection groups to come together to discuss ways to improve the management and conservation of bears. Among the subjects on the agenda is an update on the global status of bears, the trade, both legal and illegal, in North America and Asia, including discussions on the medicinal trade in bear parts. Participants will be looking at, for example, how tagging, registration of gall bladder stocks and forensics analysis can assist in the regulation of the trade.

The event will be hosted by the Woodland Park Zoo, and is co-sponsored by the TRAFFIC Network, the IUCN/SSC Bear Specialist Group and World Wildlife Fund (US and Canada).

Illegal Bear Trade: CITES Animals Committee Decision

In recognition of the serious threat to bear conservation globally from illegal trade in bear parts and derivatives, the CITES Animals Committee, at its 13th meeting, 23-27 September 1996, in Pruhonice, Czech Republic, adopted a decision intended to motivate efforts to counteract such trade. The Committee has directed the CITES Secretariat to request range states to provide all available information on: i) the status of their wild bear populations; ii) threats from trade to these; and iii) legislative or other regulatory controls on killing bears and on trade in bear parts and derivatives.

From all countries importing, (re-)exporting and/or consuming parts and derivatives of bears, the Committee has directed the Secretariat to request all information on:

i) their enforcement efforts to prevent illegal shipments of bear parts and derivatives;

ii) their legislative/regulatory controls on trade in these parts and derivatives;

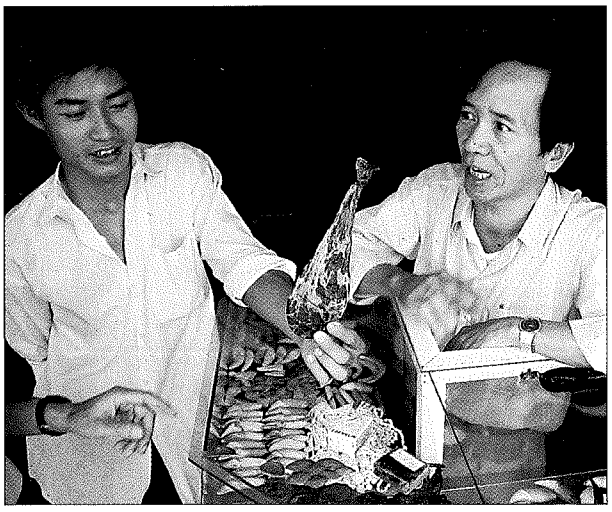
iii) the kinds of bear derivatives available on the market;

iv) efforts to promote the use of substitutes in traditional medicine; and

v) education programmes.

The subject of illegal international trade in parts and derivatives of CITES-listed bear species will be tabled for discussion at the tenth meeting of the Conference of the Parties to CITES, in June 1997 (see also pages 107-112).

Source: CITES Notification to the Parties No. 946, 18 November 1996



TRAFFIC

Bear gall bladders and other wildlife items on sale in Vietnam, 1993. ➤

C. Allan/TRAFFIC

Caspian Sea States to Regulate Sturgeon Fishing

Fishing industry leaders of Azerbaijan, Iran, Kazakstan, Russia and Turkmenistan are reported to have signed a protocol agreement, effective 1 January 1997, that bans open-sea fishing for sturgeon in the Caspian Sea during 1997. Fishing will only be permitted in the lower reaches of the Volga and Ural Rivers. The five countries have also agreed to carry out regular raids to catch poachers. Iran, which has a 700 kg coastline along the Caspian Sea and is also a significant exporter of caviar, with its own fisheries regulations, is reported to support these initiatives.

This welcome decision, which has yet to be confirmed, was announced just days after the publication of a TRAFFIC report that draws attention to the decline of Caspian sturgeon catch as a result of the high levels of international demand for caviar (the oocytes, or unfertilized eggs of the female sturgeon). Although small quantities of caviar are produced by other countries, it is reportedly only the Caspian caviar that meets the high-quality standards demanded by epicures. Of the six species of sturgeon that inhabit the Caspian Sea and its tributaries, Beluga *Huso huso*, Russian Sturgeon *Acipenser gueldenstaedti* and Stellate Sturgeon *A. stellatus* are the most heavily fished. Over the past five years, however, the quality of Caspian caviar has been called into question as fishing methods have become increasingly destructive and lawless, and caviar processing, wasteful and inexpert; alteration and impairment of their habitat has also had an adverse impact on these sturgeon populations.

Sturgeons of the Caspian Sea and the International Trade in Caviar, by T. De Meulenaer and C. Raymakers (available from TRAFFIC International), calls on all countries using the fisheries resources of the Caspian Sea basin to endeavour to agree on co-ordinated management of their fisheries and that efforts to secure signature of an international agreement on a common fisheries policy by all Caspian states concerned be pursued.

Source: TRAFFIC Europe

Low Ebb for Olive Ridleys

There have been renewed calls for greater protection of Mexico's beaches following the illegal removal of hundreds of thousands of sea turtle eggs from just one beach in the southwestern state of Oaxaca which, it is alleged, involved the complicity of police officers.

In October 1996, the largest illegal operation on record involving egg trafficking was uncovered when a lorry carrying over 500 000 eggs of Olive Ridley Turtles *Lepidochelys olivacea* was searched by authorities in Mexico City. According to the environmental organization, "Group of 100", the lorry was travelling under police escort which sped away when state authorities ordered a search of the vehicle. The Group is reported to have found that federal police were paid approximately US$2500 per lorryload to provide protection for illegal shipments of the eggs to coastal markets, where they are sold as aphrodisiacs and bar snacks. Federal police authorities have denied any involvement in the incident.

Another investigation by the "Group of 100" found that poachers stole hundreds of thousands of eggs from another nearby beach in August. Mexican marines, who were guarding an important sea turtle nesting ground, were ordered to leave their posts when a guerilla organization attacked a resort town in Oaxaca.

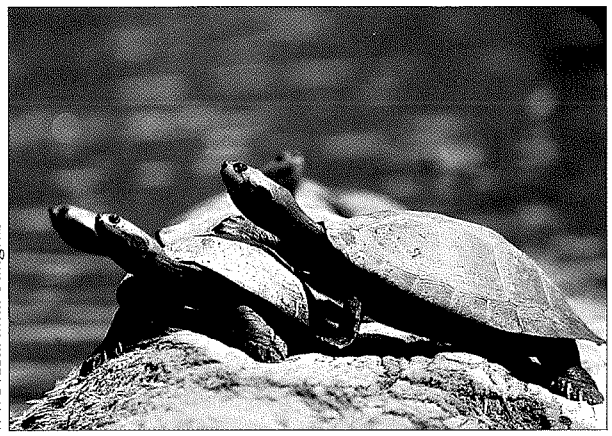
Source: TRAFFIC USA

Cuba Curbs Fishing

A new national fishing law *Decree Law 164* was announced for Cuba in July 1996. The legislation classifies fishing zones into those for commercial use and those where recreational fishing will be allowed. Apart from shore fishing, however, all fishing activity, including farming, requires permission of the authorities following a redoubled fishing effort by Cubans when trade links with the Soviet Union were dissolved and resulted in shortages of basic foodstuffs in Cuba.

While forbidding the capture of certain endangered species like Caribbean Manatees *Trichechus manatus* and Hawksbill Turtles *Eretmochelys imbricata* (both CITES Appendix I), the new law honours the practice of Cubans to fish for their own food: underwater fishing outside zones allocated to the commercial sector is allowed, with the proviso that it rely on lung power, without supplementary air supply.

Source: Reuters



WWF/Hartmut Jungius

Yellow-spotted Amazonian Turtles *Podocnemis unifilis*.

Turtles Detected

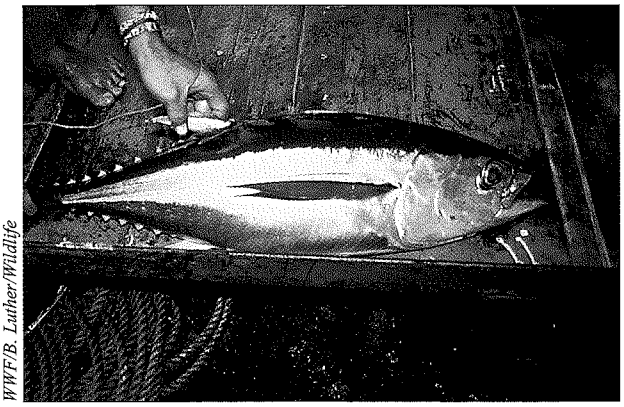
Farms breeding the Yellow-spotted Amazonian Turtle *Podocnemis unifilis* have been detected by authorities in Brazil. The species was banned from trade and consumption, after having been declared "endangered" in 1967, but conservation efforts have raised numbers of the species to the point where the Brazilian Government has decided to re-open domestic trade and offer the existing farms the chance to sell their turtles legally.

Source: Reuters

Turtles Protected

The state of Pahang will join Terengganu, Malacca, Sabah and Sarawak, in Malaysia, in enforcing a ban on the sale and consumption of Leatherback Turtles *Dermochelys coriacea* eggs from next year, according to an announcement to reporters gathered for a national seminar on turtles and terrapins in Cherating, Peninsular Malaysia. Under new fisheries rules, anyone caught in possession of the turtles' eggs could be fined up to RM1000 (US$400), or gaoled for six months, while those harming the animals within five nautical miles of the beaches of Pahang without a permit from the State Fisheries Department will risk a RM2000 fine.

Source: New Straits Times (Malaysia), 24 October 1996



WWF/B. Luther/Wildlife

Iceland Unwelcome in Barents Sea

Russia received an official protest from the Government of Iceland on 26 November 1996, including a threat to close its ports to Russian vessels trawling for Atlantic perch, in reply to Russia's continued attempts to exclude Icelandic trawlers from fishing for Cod *Gadus morhua* in international waters of the Barents Sea. Russia is concerned at Iceland's increasing cod harvests from the Sea since 1993, and has been joined by Norway in requesting Iceland to cease this fishery.

At a meeting of the Northeast Atlantic Fishing Commission in mid-November 1996 in London, a resolution was passed to reduce Russia's quota of Atlantic perch by 10 000 t, to 14 000 t. In response, the deputy chairman of the Russian Fisheries Committee stated that Russia would continue to harvest perch according to its own determination of permissable levels.

Source: Interfax, cited in Fish-Ecology listserver
Congressional Research Service

Sanction Hope for Tuna

The International Commission for the Conservation of Atlantic Tunas (ICCAT) was recently strengthened when members approved the use of sanctions against nations that violate ICCAT catch limits. The decision, taken at ICCAT's annual meeting in Spain in November 1996, specifically authorizes nations to ban imports of tuna from non-member nations Belize, Honduras and Panama, whose unregulated catches of northern Bluefin Tuna *Thunnus thynnus* are believed to undermine ICCAT's conservation measures for the species. This is the first time that sanctions have been authorized through an international fishery regime. ICCAT manages highly migratory tuna species like Bluefin, Yellowfin *Thunnus albacares*, Albacore *T. alalunga* and Big Eye *T. obesus*, as well as Swordfish *Xiphia gladius*, White Marlin *Tetrapturus albidus* and Spear Fish *T. belone* in the Atlantic Ocean, Mediterranean Sea and Gulf of Mexico.

A US State Department official reported that the delegate from Japan supports ICCAT's decision and stated that his Government would impose the necessary sanctions. Japan is the main consumer of bluefin tuna.

To halt the decline of north Atlantic populations of Swordfish, the 1997 quota was set at 11 300 t, with declining quotas set for 1998 and 1999. ICCAT was criticised by conservationists for increasing the annual quota for western Atlantic stocks of northern Bluefin Tuna in contravention of the best available science.

Source: TRAFFIC USA

◀ **Northern Bluefin Tuna *Thunnus thynnus*.**

Cat's Claw - a Curiosity or Cure-all?

Uncaria tomentosa (Rubiaecea) is the name given to a woody climbing plant (liana) occurring in the tropical forests of Central and South America. Its local name "uña de gato", or cat's claw, refers to the curved spines along the plant's stem which enable it to cling to other trees and ascend to heights of up to 20 m. An infusion of powdered or soaked "uña de gato" has long been valued by the Ashaninka Indians in the region as a curative for many ills, and is taken, in particular, as an anti-inflammatory.

Scientific investigation in recent years has shown that *U. tomentosa* contains over 50 active compounds, and confirms the presence of anti-inflammatory ingredients. Although it has proved difficult to isolate these compounds, clinical trials involving animals indicate three of potential significant medical value: anti-inflammatory, phagocytic (an ability to engulf invading micro-organisms and cells such as white blood cells) and cytostatic (inhibiting cell growth). These properties indicate that these compounds should stimulate the immune system, reduce arthritic swelling, inhibit the growth of neoplasms (cancers) and benign tumours, and decrease the reproduction of cells. The plant has no known side-effects. Its use in the treatment of cancerous growths and AIDS is being investigated but clinical evidence of such potential has yet to be realised.

Because of the difficulty in isolating the plant's compounds, the most effective way to assimilate the apparent beneficial properties, which are present only in the stem, is as an infusion or in dried powder form. The properties are extracted in liquid form and converted to powder by way of freezing, or by subjecting the derivative to temperatures of up to 80°C.

Both the dried stem and powder are widely available for sale in the local markets, and the powder is marketed in the form of pills and capsules, with more than 30 brands available. As there are a number of plants known as "uña de gato", it is not always possible to guarantee the authenticity of the dried powder being offered for sale - only *O. tomentosa* is reported to have curative properties.

According to the Government's trade statistics, around 130 tonnes of "uña de gato" material, mostly stem, were exported in 1995, and in March 1996 alone, 62 530 kg were exported, primarily to Mexico, USA, and Brazil. Prices depend on how the plant/derivative is packaged: itinerant vendors sell 'tea' bags of the plant material for 2 soles (US$0.90) each, or a piece of bark or a bottle of 20 pills, for 5 soles. In a pharmacy, a box of 10 pills costs 10.20 soles, rising to 48 soles for 100.

There is concern that the genetic make-up of the plant be conserved should the demand for wild-collected plants of this species deplete wild populations. Earlier this year, the President of Peru, Alberto Fujimori, announced the initiation of a programme to produce and export "uña de gato" involving the direct participation of local communities. Now, cultivation of *U. tomentosa* is reported to be offering a much needed boost to the finances of the inhabitants of the Peruvian Amazon: two million plants have been sown on 20 hectares of land along the banks of the River Ucayali and its tributaries. It is predicted that over the next three years the yield will fetch 150 000 soles.

Uña de Gato products on sale in Peru. The spiny stems of the plant yield properties that reportedly reduce swelling and stimulate the immune system.

Ximena Buitrón

Sources: El Comercio (Peru), 26 April/15 August 1994; Actualidad (14-20 April 1994); 3er Congreso Peruano de Genetica, Universidad Nacional Agraria la Molina, 25 January 1996; El Peruano, 12 February 1996

TRAFFIC Reports on *Aloe ferox* Industry

Aloe *Aloe ferox* belongs to the plant family Aloeaceae, and with many other *Aloe* species, is listed in CITES Appendix II. The plant occurs in South Africa and Lesotho and is used in the horticultural and ornamental trade, in medicinals, foods, beverages and cosmetics. The main pressure on the species is exploitation of the sap, the crystallized concentrate of which is sold worldwide as 'bitters', for use as a purgative.

A study by TRAFFIC East/Southern Africa/WWF South Africa into the *Aloe ferox* industry in South Africa was initiated when analysis of South Africa's trade data revealed a steady trade in the parts and derivatives of this species. The report on this research is now available and documents findings arising from meetings of the authors with aloe tappers, factory managers, traders, farmers and nature conservation officials in 1993 and 1994. As presently conducted, the industry appears sustainable, although reservations are expressed as to whether some aspects of the industry can be maintained long-term; recommendations for future research aimed at resolving these concerns are made. ***South Africa's* Aloe ferox *Plant, Parts and Derivatives Industry. 61 pp. David J. Newton and Hugo Vaughan. Available from TRAFFIC East/Southern Africa, South Africa National Office (address back page) for US$10.***

Reported Illegal Timber Exports from Cambodia

First-hand accounts in a report by Global Witness describe incidences of apparent illegal exports of timber from Cambodia.

Despite a ban on the export of timber felled after 30 April 1995 issued by the Royal Government of Cambodia, it reportedly signed deals with at least 17 Thai companies, in January and February 1996, for the export of 1.1 m of logs from Cambodia. According to assurances given later by the Government in April and June 1996, such agreements did not constitute authorizations to the Thai companies to export, however. In order to secure such an authorization, in the form of a contract, the Cambodian Government explained, each Thai company was required to submit to inspection its quota of logs for export, to allow verification that these have been felled prior to 30 April 1995.

In practice, it is reported, only one of the Thai logging companies listed by Cambodia's Ministry of Agriculture as awaiting export permits has been in a position to satisfy this inspection criterion, the remainder being unable to do so as their operations are based in zones of Cambodia outside Government control. It is further reported, by the one company whose timber stock has undergone field inspection, that 50% of their 71 000 m^3 of timber should not have been cleared for export as it had been cut since April 1995. This company is already said to have exported logs to Thailand from Cambodia, but so-called "double control checks" (by representatives of Thai and Cambodian authorities at the national border), which the Government of Cambodia announced would be in place at the time of timber export to Thailand, were reportedly absent. Consignments of logs from the same company are said to be the only ones from Cambodia authorized by the Thai Government to pass border checkpoints. Otherwise, the Thai/Cambodia border is officially closed to such traffic, according to an order of the Thai Prime Minister on 27 May 1995.

Transit of uninspected lorry-loads of rough, sawn timber from Cambodia to Thailand is allegedly occurring, however. Specifically, it is reported that a total of 170 m^3 may be crossing the border nightly just south of Aranyaprathet, in Thailand. Large volumes of fresh-cut Cambodian logs are said to have been observed recently crossing from Cambodia to Lao PDR, and also aboard Thai lorries crossing the Mekong River at Pakse (Lao PDR), bound in the direction of the Lao/Thai border crossing at Chong Mek. The source of these logs may be the 15 km-long line of freshly felled timber piled alongside the east bank of the Mekong River in Cambodia, south of Stung Treng. Numerous reports of other movements of logs, suspected or known to be illegal, within or from Cambodia, are cited: a particularly significant route for timber exports from Cambodia to Thailand would appear to be by sea, with entry to the latter country at Kalapandha harbour, Trat Province.

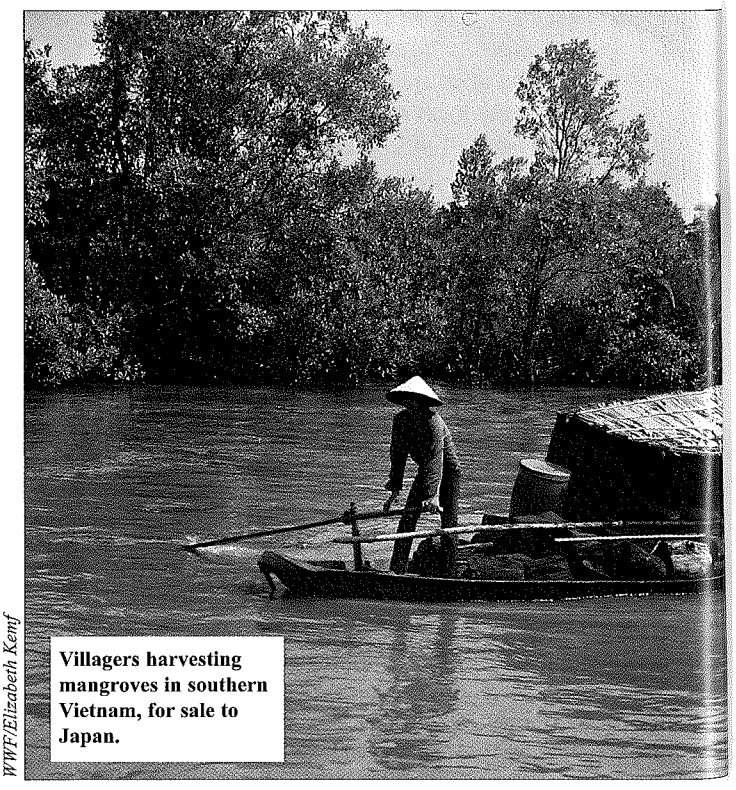
Recommendations included in the report suggest that only those timber companies in territory under full Cambodian Government control should be eligible for consideration for export permits, and then only when they have undergone on-site inspections to verify that exports would consist only of timber cut after 30 April 1995. Independent monitoring of Cambodian timber imports by Thai authorities is also called for.

Source: Global Witness, October 1996

Vietnam's Declining Forests, Rising Imports in Thailand

Visiting officials from countries neighbouring Vietnam were recently told by its Prime Minister, Vo Van Kiet, that collaboration on a regional basis was needed to manage Indochina's remaining forests and jungles. He told ministers from Cambodia, Lao PDR, Myanmar and Thailand that a formal accord among these countries and Vietnam was necessary to counteract timber smuggling. While Vietnam's much reduced forests (covering 19% of the country now, in comparison to 43% 50 years ago) continue to be exploited, the decline in Thailand's forests in recent years has led that country to import around US$1.25 billion worth of timber annually. Already the third-largest importer of timber in the world, according to the Wood Exporters and Importers, Thailand is estimated to have a demand for 4.2 million m^3 of timber at the turn of the century.

Forests for Life, WWF Forests Campaign Newsletter, 1(5),11 October 1996



WWF/Elizabeth Kemf

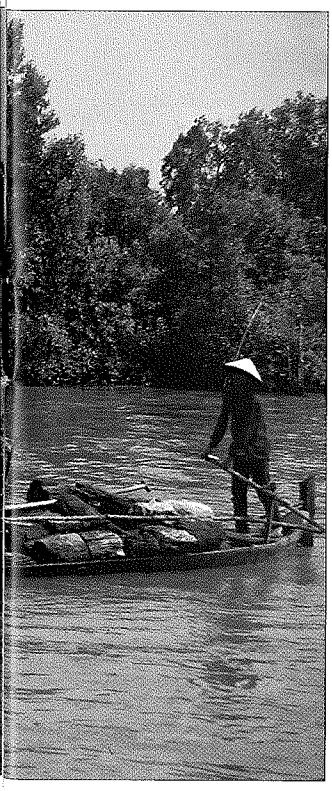
Villagers harvesting mangroves in southern Vietnam, for sale to Japan.

1996-1997: Key Years for the Conservation of Big-leafed Mahogany

Brazil is a primary exporter of Big-leafed Mahogany *Swietenia macrophylla*, for use in carving and in the manufacture of furniture. On July 25 1996, the Brazilian Government adopted two important measures related to the conservation of the Amazonian forest and to certain species threatened by overexploitation, among these, Big-leafed Mahogany. First, for a period of two years, all new authorizations and concessions for the commercial exploitation of *S. macrophylla* were suspended while the current logging system is evaluated (*Decree No. 1963*). Existing authorizations or concessions for mahogany logging are not affected. Second, the allowable proportion of clear cutting in any forest in the region will be reduced from up to 50%, to 20% (*Provisional Measure No. 1511*).

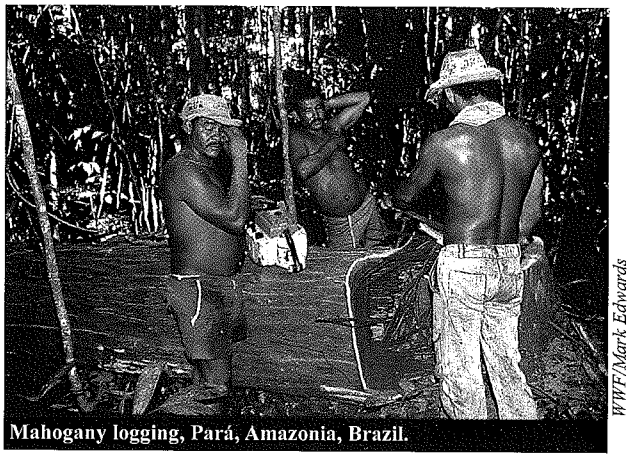
Background

Earlier measures to address the problem of depleted Big-leafed Mahogany populations in the country as a result of logging include the drafting of a bill (No. 1008), submitted in September 1995. This bill goes even further than the provisions set out in Decree 1963 in proposing a five-year prohibition on logging, as well as providing for implementation of a Management Plan based on scientific and technical studies that would ensure regeneration and sustainability of Big-leafed Mahogany populations. The bill has not had the support of the Government, however (C. Castro, pers. comm., 1997) and has not been passed.



The enactment of *Provisional Measure No. 1511* was prompted by heavy deforestation from 1991 to 1994, particularly in Mato Grosso, Pará, and Acre. As well as stipulating reduction of clear cutting in the region, this *Measure* authorizes enlargement of the Forest Reserve in Acre, Pará, Amazonas, Roraíma, Rondônia, Amapá, Mato Grosso, Tocantins and Maranhâo (an area known as Amazonia Legal and covering just over 60% of Brazilian territory). The *Measure* is controversial, however, because while facilitating conservation of the Amazonian forest, there are concerns that it will encourage farmers to engage in illegal logging in order to benefit from the lower taxes and financial credit to which they are entitled as loggers.

Other initiatives to encourage sustainable exploitation in Amazonia and restrict clear cutting of primary forests are under review.



Mahogany logging, Pará, Amazonia, Brazil. WWF/Mark Edwards

Outcome

In order to implement *Decree No. 1963* and *Provisional Measure No. 1511*, a system for evaluating the effectiveness of existing Management Plans was initiated in late 1996 through the Environmental Control Project in Amazonia Legal. This project is divided into two phases: Phase I, which was to be completed within a period of four months (by end December 1996), involved the documentation and re-evaluation of all Management Plans for the Amazonian region; this process sought to determine which Management Plans were acceptable and which were illegal and should be cancelled, and aimed to examine all those that were under review. Phase II, which is due to commence in April and is expected to take eight months, will see the undertaking of field work to monitor the enforcement of the Management Plans (P.J. Prudente de Fontes, pers. comm.; *in litt.*, 28 February 1997).

A proposal by the USA and Bolivia (a range state and a major exporter of this species) to list Big-leafed Mahogany in CITES Appendix II has been submitted for discussion at the tenth meeting of the Conference of the Parties to CITES, to be held in June. While conceding that there may be a threat to the genetic structure of mahogany populations, the Brazilian Government has argued that Big-Leafed Mahogany production in Brazil is now sufficiently controlled and, further, that production is destined mostly for the domestic market. As a result, according to the Government, exportation does not threaten the survival of the species in Brazil. Several other range states have expressed support for the proposal, including Bolivia, Ecuador and Venezuela.

A proposal to list Big-Leafed Mahogany in Appendix II presented to the ninth meeting of the Conference of the Parties was narrowly defeated, lacking only six votes of the two-thirds majority needed for adoption. Additional information on the status and trade of this species, collected since that time, should assist the Parties in their consideration of this proposal in June.

Ximena Buitrón, Traffic International

CITES Appendices Amendment Proposals

In accordance with the provisions of Article XV, paragraph 1(a), of CITES, the following proposals for amendment of Appendices I and II of the Convention have been communicated to the CITES Secretariat by Parties. These proposals will be considered at the tenth meeting of the Conference of the Parties to CITES, to be held from 9 to 20 June in Harare, Zimbabwe.

Species	Proposal	Proponents
MAMMALS		
Minke Whale *Balaenoptera acuturostrata*	App. I > App. II (Okhotsk Sea, W. Pacific and S. hemisphere stocks)	JP
Minke Whale *Balaenoptera acuturostrata*	App. I > App. II (NE Atlantic and N. Atlantic Central stocks)	NO
Bryde's Whale *B. edeni*	App. I > App. II (N. Pacific Western stock)	JP
Grey Whale *Eschrichtius robustus*	App. I > App. II (E. Pacific stock)	JP
American Bison *Bison bison athabascae*	App. I > App. II (in accordance with precautionary measure B.2.b of Res. Conf. 9.24)	CA
Banteng *Bos javanicus*	Incl. App. I	TH
Asian Wild Buffalo *Bubalus arnee*	Incl. App. I	TH
Mountain Pygmy-possum *Burramys parvus*	Delete App. II[1]	AU
White Rhinoceros *Ceratotherium simum simum*	Amend annotation °503 to allow the trade in parts and derivatives but with a zero quota	ZA
Furry Armadillo *Chaetophractus nationi*	Incl. App. I	BO
Bennett's Tree-kangaroo *Dendrolagus bennettianus*	Delete App. II[1]	AU
Lumholtz' Tree-kangaroo *D. lumholtzi*	Delete App. II[1]	AU
Père David's Deer *Elaphurus davidianus*	Incl. App. II	AR/CN
African Elephant *Loxodonta africana*	App. I > App. II subject to specified conditions[3]	BW/NA/ZW
Kara Tau Argali *Ovis ammon nigrimontana*	App. II > App. I	DE
Jaguar *Panthera onca*	Establishment of annual export quotas for hunting trophies of zero in 1997, 1998 and 1999 and of 50 thereafter	VE
Collared Peccary *Pecari (Tayassu) tajacu*	Delete App. II (MX population)	MX
Brown Bear *Ursus arctos*	App. II > App. I (all Asian and European populations)	BG/FI/JO
Vicuña *Vicugna vicugna*	App. I > App. II (population of the Province of Jujuy and of the semi-captive populations of the Provinces of Jujuy, Salta, Catamarca, La Rioja and San Juan, Argentina, subject to specified conditions)	AR
Vicuña *V. vicugna*	App. I > App. II (population of the Conservation Units of Mauri-Desaguadero, Ulla Ulla and Lípez-Chichas, Bolivia, subject to specified conditions)	BO
Vicuña *V. vicugna*	Amend annotation °504 to replace the words "VICUÑANDES-CHILE" and the words "VICUÑANDES-PERU" by the words "VICUÑA-COUNTRY OF ORIGIN"	
Vicuña *V. vicugna*	Amend annotation °504 to allow also the members of the Vicuña Convention to trade in luxury handicrafts and knitted articles made of wool sheared from live vicuñas from Appendix-II populations	

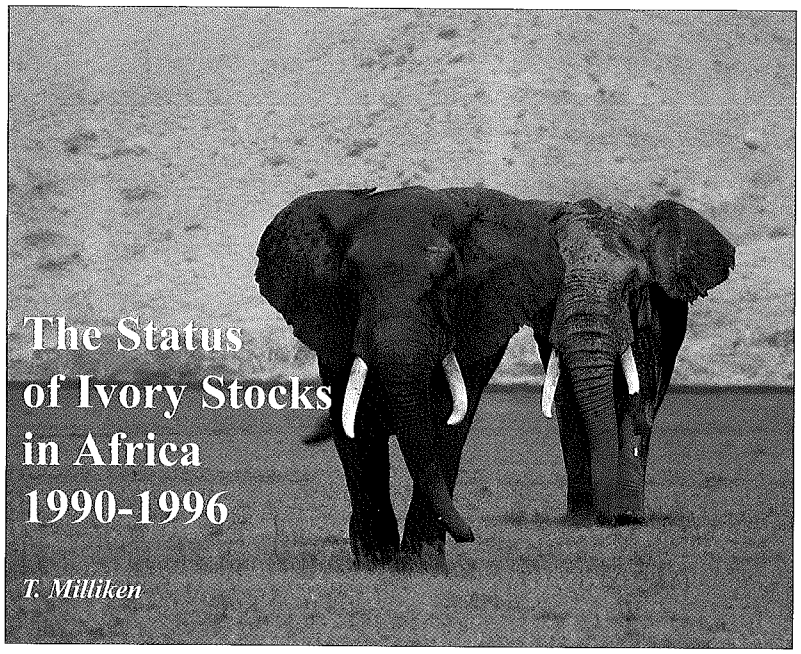
Species	Proposal	Proponents
BIRDS		
Writhed-billed Hornbill		
Aceros waldeni	App. II > App. I	DE
Green Avadavat		
Amandava formosa	Incl. App. II	NL
Black-billed Parrot		
Amazona agilis	App. II > App. I	DE
Red-crowned Parrot		
A. viridigenalis	App. II > App. I	DE/MX/US
Yellow-crested Cockatoo		
Cacatua sulphurea	App. II > App. I	DE
Uvea Parakeet		
Eunymphicus cornutus uvaeensis	App. II > App. I	DE
Weka		
Gallirallus australis hectori	Dele te App. II[1]	NZ
Hill Myna		
Gracula religiosa	Incl. App. II	NL
Silver-eared Mesia		
Leiothrix argentauris	Incl. App. II	NL
Red-billed Leiothrix		
L. lutea	Incl. App. II	NL
Omei Shan Liocichla		
Liocichla omeiensis	Incl. App. II	NL
Java Sparrow		
Padda oryzivora	Incl. App. II	NL
Helmeted Curassow		
Pauxi pauxi	Incl. App. II	NL
Horned Curassow		
P. unicornis	Incl. App. II	NL
Plains-wanderer		
Pedionomus torquatus	Delete App. II[1]	AU
Straw-headed Bulbul		
Pycnonotus zeylanicus	Incl. App. II	NL/US
Seven-colored Tanager		
Tangara fastuosa	Incl. App. II	DE
Black-breasted Buttonquail		
Turnix melanogaster	Delete App. II[1]	AU
Kuhl's Lorikeet		
Vini kuhlii	App. II > App. I	DE
Tahitian Lorikeet		
V. peruviana	App. II > App. I	DE
Ultramarine Lorikeet		
V. ultramarina	App. II > App. I	DE
REPTILES		
Broad-nosed Caiman		
Caiman latirostris	App. I > App. II (AR population)	AR
Painted Terrapin		
Callagur borneoensis	Incl. App. II	DE
Nile Crocodile		
Crocodylus niloticus	Maintain App. II (MG population) (ranching)	MG
Nile Crocodile		
C. niloticus	Maintain App. II (UG population) (ranching)	UG
Nile Crocodile		
C. niloticus	Establish annual export quota of 1000 skins and 100 hunting trophies from wild animals for the years 1998-2000 (TZ population)	TZ
Timber Rattlesnake		
Crotalus horridus	Incl. App. II	US
Hawksbill Turtle		
Eretmochelys imbricata	App. I > App. II (CU population, subject to specified conditions)	CU
Map turtles (12 species)		
Graptemys spp.	Incl. App. II	US
Alligator Snapping Turtle		
Macroclemys temminckii	Incl. App. II	US
Indian Monitor		
Varanus bengalensis	App. I > App. II (BD population, subject to annual export quotas of 150 000 skins in 1997 and 225 000 skins in 1998 and 1999	BD
Yellow Monitor		
Varanus flavescens	App. I > App. II (BD population subject to annual export quotas of 100 000 skins in 1997, 1998 and 1999	BD
AMPHIBIANS		
Mantella frog		
Mantella bernhardi	Incl. App. II	NL
Mantella frog		
M. cowani	Incl. App. II	NL
Mantella frog		
M. haraldmeiri	Incl. App. II	NL
Mantella frog		
M. viridis	Incl. App. II	NL
FISH		
Sturgeons		
Acipenseriformes spp.	Incl. App. II	DE/US
Sawfish		
Pristiformes	Incl. App. I	US
INVERTEBRATES		
Mussel		
Fusconaia subrotunda	Delete App. II[1]	US
Mussel		
Lampsilis brevicula	Delete App. II[1]	US
Mussel		
Lexingtonia dolabelloides	Delete App. II[1]	US
Land Snails		
Paryphanta spp.	Delete App. II[1]	NZ

Species	Proposal	Proponents
PLANTS		
	Amendment of current annotations #1, #2, #4 and #8 to include the following exemption: "cut flowers of artificially propagated plants"[2]	CH
	Amendment of annotation #5 to read: "designates logs, sawn wood and veneer sheets"[2]	CH
Cacti *Hatiora* x *graeseri*	Annotation to exclude from App. II art. prop. hybrids and cultivars	DK
Cacti *Schlumbergera* spp.	Annotation to exclude from App. II art. prop. hybrids and cultivars	DK
Cacti *Gymnocalycium mihanovichii*	Annotation to exclude from App. II art. prop. hybrids and cultivars	DK
Cacti *Opuntia microdasys*	Annotation to exclude from App. II art. prop. hybrids and cultivars	DK
Euphorbia *Euphorbia trigona*	Annotation to exclude from App. II art. prop. specimens of cultivars	DK
Cyclamen *Cyclamen persicum*	Annotation to exclude from App. II art. prop. specimens of hybrids and cultivars except when traded as dormant tubers	DK
Golden Camellia *Camellia chrysantha*	Delete App. II[2]	CN
Goldenseal *Hydrastis canadensis*	Incl. App. II	US
Tweedy's Bitter-root *Lewisia tweedyi*	Delete App. II[2]	US
Spikenard *Nardostachys grandiflora*	Incl. App. II (parts and derivatives to be covered: "roots and readily recognizable parts thereof")	IN
Marsh Rose *Orothamnus zeyheri*	App. I > App. II in accordance with precautionary measure B.2.b) of Res. Conf. 9.24	ZA
American Ginseng *Panax quinquefolius*	Amend annotation #3 to read "designates roots and specimens recognizable as being parts of roots"[2]	CH
Katki *Picrorhiza kurrooa*	Incl. App. II (parts and derivatives to be covered: "roots and readily recognizable parts thereof")	IN
Protea *Protea odorata*	App. I > App. II in accordance with precautionary measure B.2.a) of Res. Conf. 9.24	ZA
American Mahogany *Swietenia macrophylla*	Incl. App. II of neo-tropical populations an annotation to cover logs, sawn wood and veneer/plywood sheets	US/BO

[1] *Proposals resulting from reviews by the CITES Animals Committee*
[2] *Proposals resulting from reviews by the CITES Plants Committee*
[3] *Transfer of Botswanan population from Appendix I to II with an annotation to allow: a) the direct export of registered stocks of whole raw tusks of Botswana origin to one trading partner (Japan) subject to annual quotas of 12.68 t in 1998 and 1999; b) international trade in hunting trophies; and c) international trade in live animals to appropriate and acceptable destinations.*
Transfer of Namibian population from Appendix I to II with an annotation to allow: a) the direct export of registered stocks of whole raw tusks of Namibian origin owned by the Government of Namibia to one trading partner (Japan) that will not re-export, subject to annual quotas that will not exceed 6900 kg between September 1997 and August 1998 and between September 1998 and October 1999; b) international trade in live animals to appropriate and acceptable destinations for non-commercial purposes; and c) international trade in hunting trophies for non-commercial purposes.
Transfer of Zimbabwean population from Appendix I to II with an annotation to allow: a) the direct export of registered stocks of whole raw tusks to one trading partner (Japan) subject to annual quotas of 10 t in 1998 and 1999; b) international trade in hunting trophies; c) international trade in live animals to appropriate and acceptable destinations; d) international trade in non-commercial shipments of leather articles and ivory carvings; and e) export of hides.

Country Codes

AR	Argentina	MG	Madagascar
AU	Australia	MX	Mexico
BD	Bangladesh	NA	Namibia
BG	Bulgaria	NL	Netherlands
BO	Bolivia	NO	Norway
BW	Botswana	NZ	New Zealand
CA	Canada	PE	Peru
CH	Switzerland	US	USA
CN	China	TH	Thailand
CU	Cuba	TZ	Tanzania
DE	Germany	UG	Uganda
FI	Finland	VE	Venezuela
JO	Jordan	ZA	South Africa
JP	Japan	ZW	Zimbabwe



The Status of Ivory Stocks in Africa 1990-1996

T. Milliken

WWF/Rick Weyerhaeuser

In the wake of the CITES ivory trade ban in 1990, stocks of African Elephant ivory have steadily grown within Africa. Available evidence indicates that some 462 tonnes (t) of ivory are legally held in 27 African countries. However, the existence of unreported or illegal stocks of ivory may push the total to over 600 t. Documented ivory stocks are increasing by over 30 t each year. For many countries, the existence of ever-increasing volumes of ivory presents a host of economic, political, legal, security and conservation problems, to which practical solutions have yet to be found. The following is an updated version of a technical paper produced for the IUCN/CITES Meeting Promoting Dialogue Between African Countries on the Conservation of the African Elephant, held from 11 to 16 November 1996 in Dakar, Senegal, and reports on news presented at that meeting.

Introduction

In accordance with the CITES ivory export quota system in effect from 1986 until 1989 inclusive, information on legitimately held ivory stocks was routinely conveyed to the Ivory Trade Control Unit, based at the CITES Secretariat. During this time, the provisions of Resolutions Conf. 5.12 (*Trade in ivory from African Elephants*) and Conf. 6.12 (*Integration of the management of the African Elephant and ivory trade controls*) governed the legal trade in ivory, affecting all CITES Parties who wished to export or import elephant tusks or raw ivory pieces. These controls were also binding on countries which had not joined the Convention and who wished to engage in commercial trade in raw ivory with CITES Parties. As a result, information on the national status of ivory stocks was reported by countries throughout the world, especially African Elephant range states. In January 1990, when the listing of the African Elephant *Loxodonta africana* in Appendix I came into effect and international trade in ivory was banned, regular reporting of ivory stock data ceased.

Despite the loss of the institutional mechanism under CITES, the need to monitor the growth and status of ivory stocks in the post-CITES trade ban era remains as important as ever. This is especially true within Africa, where the ramifications of growing ivory stocks raise a range of economic, political, legal, security and conservation issues.

Methods

With financial support from the US Fish and Wildlife Service's grant programme under the US *African Elephant Conservation Act*, WWF-World Wide Fund for Nature, and IUCN-The World Conservation Union, since 1992, TRAFFIC East/Southern Africa has undertaken a variety of activities designed to identify, monitor and, in some cases, assist in the registration and marking of legally held ivory within Africa. The data used in this report are based on TRAFFIC's own investigations, which ranged from weighing and re-marking ivory tusks held by the Governments of Sudan and Ethiopia, computerization of Tanzania's ivory stock data, and acquisition of ivory stock registrations in Uganda and Zambia. Further material in the report is derived from other published sources, from a questionnaire sent to African Elephant range states in August 1996 by the CITES Secretariat and, most recently, from information presented at the IUCN/CITES Meeting Promoting Dialogue Between African Countries on the Conservation of the African Elephant, held in Dakar in November 1996.

Africa's Ivory Stocks: Past and Present

There is little question that significant quantities of ivory were legally held by many government authorities and legitimate ivory dealers when the CITES trade ban came into effect on 18 January 1990. An analysis by Caldwell and Luxmoore (1990) provided a minimum estimate of 271 t in 13 African nations (Table 1), while another 683.7 t of ivory were reported in seven other countries and territories outside Africa (Belgium, China, Hong Kong, Portugal, Singapore, UK and the USA). Clearly, other stocks of ivory existed at the time: data for countries such as Sudan, a leading African exporter, or Japan, a major consumer in the Far East, were apparently not available.

Since 1990, TRAFFIC has published the results of two studies to estimate the volume of ivory in Africa. In a report to the CITES Secretariat for distribution at the 35th meeting of the Standing Committee, in March 1995, TRAFFIC estimated that a minimum of 380.6 t of ivory was held in 16 African countries (Table 1), while another 35 t of ivory had been publicly destroyed since 1990 (Milliken, 1995). At the IUCN/SSC African Elephant Specialist Group meeting in February 1996, TRAFFIC

Country	1990[1] Estimate (kg)	1994[2] Estimate (kg)	1996 Estimate (kg)	Average tusk weight	Rate of annual increase	Value ivory as potential economic asset[3]
West Africa						
Benin	-	-	0[3]	-	NR	-
Burkina Faso	-	-	0[3]	-	NR	NR
Côte d'Ivoire	10 000+	92	92[2]/+P[4]	-	-	-
Ghana	-	-	379[3]			
			1 150 P	2.9	0	No
Guinea	-	-	-	-	-	-
Guinea Bissau	-	-	0[3]	-	NR	NR
Liberia	-	-	-	-	-	-
Mali	-	-	0[3]	-	-	-
Niger	-	-	23[3]	-	?	?
Nigeria	-	80	80+[2]	3.8	<500	Yes
			+P[3]			
Senegal	-	-	33+[3 7]	?	0	No
			+P			
Sierra Leone	-	-	0[3]	-	NR	NR
Togo	-	-	3 937[4]P	7.2	<500	No
Minimum Subtotal	10 000	172	5 694	5.5	<500	
Central Africa						
Cameroon	-	511	511[2]	2.1	-	-
Central African Republic	3 800	-	504[4]	1.4	-	-
Chad	-	-	0[3]	-	NR	NR
Congo	-	40 000 P	<1000[3]	-	-	-
			3000[3] P			
Equatorial Guinea	-	-	1000[3] P	-	-	-
Gabon	1 300	610	1012[3]	3.6	<500	Yes
Zaire	9 600	-	1 914+[3]	4.2	>200	Yes
			14 125 P			
Minimum Subtotal	14 700	41 121	23 066	2.9	500-1000	
Eastern Africa						
Eritrea	-	-	2 755[4] P	-	0	No
Ethiopia	-	3 167	3 822[3]	4.1	<500	Yes
			2 417 P	?		
Kenya	-	1 114	3 900[3]	9.7	<2 000	No
Rwanda	-	-	0[4]	-	NR	NR
Somalia	11 300	-	-	-	-	-
Sudan	-	46 828	4 865[3]	4.2	?	Yes
			41 963 P	4.3		
Tanzania	30 000	52 296	71 667[3]	3.8	9 000	Yes
Uganda	-	-	778[3]	3.0	<500	Yes
			676 P	?		
Minimum Subtotal	41 300	103 405	132 843	4.1	>11 000	
Southern Africa						
Angola	-	-	-	-	-	-
Botswana	5 000-7 000	15 000+	29 706[3]	6.3	3 100	Yes
Malawi	-	4 873	4 740[6]	2.9	300	Yes
			634 P[3]			
Mozambique	80 000	-	2 000[3]	<20.0	<500	Yes
Namibia	20 000+	26 000+	41 400[3]	5.6	2 000-	Yes
			9 800 P	9.3	4000	
South Africa	6 000	69 917	37 850[5]	6.5	3500	Yes
			51 284 P	9.3		
Swaziland	-	-	-	-	-	-
Zambia	-	3 614	6 514[3]	4.2	>1300	Yes
Zimbabwe	8 000-12 000	30 527	29 280[3]	10.3	>8 000	Yes
Minimum Subtotal	119 000	149 931	213 208	6.9	>19 700	-
Non-range states						
Burundi	84 000	86 000	86 000[8]	-	-	-
Djibouti	2 000	-	1 664[9] P	5.5	?	?
Minimum Subtotal	86 000	86 000	87 664	5.5	?	-
GRAND TOTAL	271 000+	380 629+	462 475	5.6	<31 700-<32 200	-

Table 1. Comparison of raw ivory stocks in African range states, 1990-1996[10] P = privately-held ivory stocks; NR = no response to questionnaire sent by the CITES Secretariat in August 1996; - = no information available. *Sources:* [1]*Caldwell and Luxmoore, 1990;* [2]*Milliken, 1995;* [3]*Questionnaire responses and information presented at the IUCN/CITES Meeting Promoting Dialogue Between African Countries on the Conservation of the African Elephant, in Dakar, Senegal, November 1996;* [4]*Anon., 1995a;* [5]*Anon., 1994b; Botha* in litt., *1996; A. Hall-Martin* in litt., 1996; [6]*Anon., 1996b;* [7]*33 tusks estimated as weighing a minimum of 1 kg per tusk;* [8]*J. Thomsen, pers. comm., 1995;* [9]*Anon., 1995b.* [10]*All figures in 1996 represent government-held ivory stocks unless specifically designated with a "P".*

provided an update, presenting data which identified 389.1 t of ivory in 22 African countries (Milliken, 1996).

The latest available data, which indicate that over 462 t of ivory are currently held in 27 sub-Saharan nations, are presented in this report. This figure, while more comprehensive in terms of coverage than any previous estimate, still needs to be regarded as a minimum indication. For example, current data are not available for 10 African Elephant range states, including Somalia, and may be incomplete for Congo, Côte d'Ivoire and Zaire, all very important sources of ivory prior to the CITES trade ban (Luxmoore *et al.*, 1989). All these countries were also believed to harbour considerable stocks of ivory at the time the ban took effect (Caldwell and Luxmoore, 1990; Fay and Agnagna, 1993).

Country Profiles

The following analysis looks at the current status of ivory stocks in countries on a regional basis. Where possible, related issues such as rates of increase, sources and quality of the stock are also assessed.

RANGE STATES

WEST AFRICA

Benin: There were no ivory stocks in Benin in October 1996 according to Government officials (Alaji-Bonin., *in litt.,* 1996).

Burkina Faso: In October 1996, authorities in Burkina Faso reported that there were no ivory stocks in the country (Anon., *in litt.,* 1996f).

Côte d'Ivoire: At the time of the CITES ban, it was suggested that "at least ten tonnes" of ivory were in Côte d'Ivoire (Caldwell and Luxmoore, 1990). Four years later, researchers were only able to locate 92 kg of confiscated ivory held in the Abidjan National Zoo (Dublin *et al.*, 1995) but it has been suggested that sizeable, unidentified ivory stocks may remain in the hands of private individuals in Côte d'Ivoire (Milliken, 1995). In October 1996, Government wildlife officials reported that there were no ivory stocks under their control, but that an unknown volume of ivory was in the private sector (Kouame, *in litt.,* 1996). Data held in TRAFFIC's Bad Ivory Database System (BIDS) indicate that some 1160 kg of ivory have been confiscated on route to Côte d'Ivoire in the post-ban era (Dublin *et al.*, 1995). Further investigation of the situation in Côte d'Ivoire is warranted.

Ghana: In September 1996, the Government's ivory stocks consisted of 130 tusks, weighing 379 kg, while another 1150 kg, consisting of 35 raw and 635 worked ivory pieces, were in the hands of private individuals, primarily local chiefs who use the ivory as part of their royal regalia (Andan, *in litt.,* 1996). With an average tusk weight of 2.9 kg, the Government-held tusks are extremely small and probably hold little commercial value. Although comparative data from the past are not available, Ghana reported that current stocks are not increasing, but also that the Government continues to sell ivory in its possession to local traditional rulers from time to time (Andan, *in litt.,* 1996).

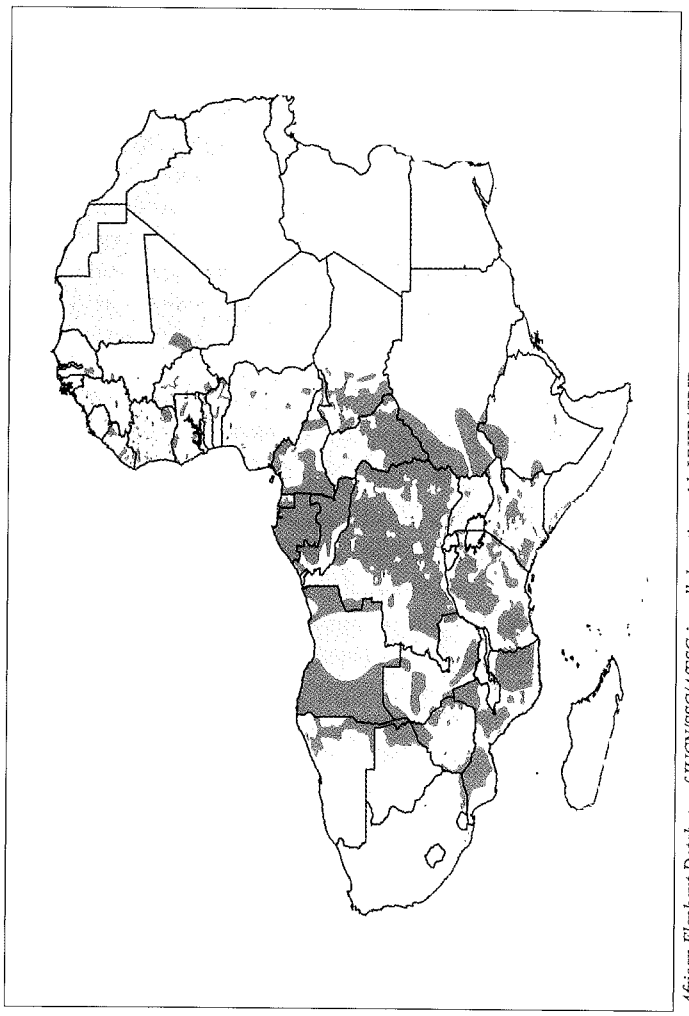
Guinea: No information available.

Guinea Bissau: Government officials in Guinea Bissau reported in September 1996 that the country presently holds no stocks of ivory (Anon., *in litt.,* 1996c).

Liberia: No information available.

Mali: In October 1996, Government authorities reported that there are no Government or private ivory stocks in the country (Anon., *in litt.,* 1996g).

Niger: In February 1995, Niger officials reported to the CITES Secretariat that the country's ivory stocks had



African Elephant Database of IUCN/SSC/AfESG in collaboration with UNEP/GRID

African Elephant Range in Africa, 1995.

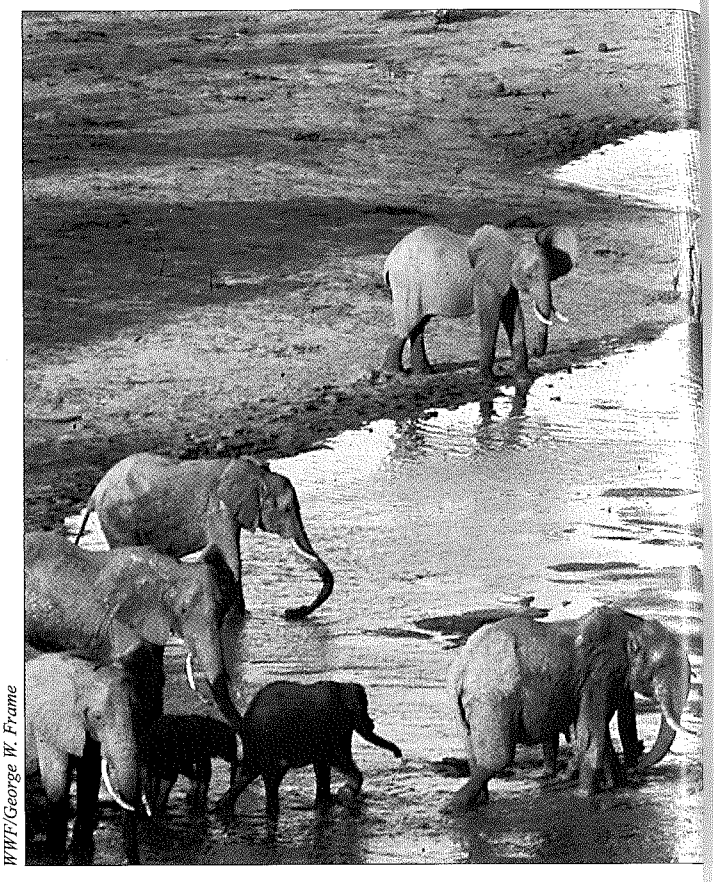
consisted of 20 pieces, totalling 56 kg, at the end of 1994 (Anon., 1995a). This represented a very modest increase to the 32 kg of ivory reportedly in the Government's possession in 1990 (Anon., 1995a). In August 1996, however, the Government's stock was reported to total 23 kg (Anon., *in litt.,* 1996h).

Nigeria: In 1989, Nigeria submitted an export quota to the CITES Secretariat for 50 elephant tusks, but these were never subsequently exported (Anon., 1989; Caldwell and Luxmoore, 1990). The status of this stock remains unknown, and there are few records of Government-held ivory in Nigeria. In 1994, only 21 ivory tusks or pieces, weighing 80 kg, were identified in the hands of Government authorities, with most stock stored in Yankari National Park (Dublin *et al.*, 1995). At 3.8 kg, the average tusk weight was comparatively low. It has been suggested that Nigerian authorities generally dispose of most locally acquired stocks on local markets (Dublin *et al.*, 1995). In September 1996, Nigerian federal authorities reported that ivory was held by both Government and private sources, but could not identify the volume (Anon., *in litt.,* 1996e). Each year, small volumes of ivory are confiscated and, to a lesser extent, originate from problem animal control and natural elephant mortality (Anon., *in litt.,* 1996e).

Senegal: Senegal submitted an export quota for 28 tusks to the CITES Secretariat in 1989, but this stock was never recorded as being exported pursuant to CITES procedures (Anon., 1989; Caldwell and Luxmoore, 1990). In September 1996, the Government reported that it held 33 tusks, apparently the result of confiscations in the past, but did not indicate the weight of this stock (Kane, *in litt.,* 1996). The Government has no knowledge of ivory stocks in the private sector (Kane, *in litt.,* 1996), but considerable volumes of worked ivory products are offered for sale in the tourist markets of Dakar, the capital.

Sierra Leone: According to Government officials, there were no ivory stocks in Sierra Leone in September 1996 (Samura, *in litt.,* 1996).

Togo: In August 1996, Togolese authorities reported the existence of privately-held ivory stocks totalling 3937 kg, but indicated that there are no stocks in the hands of the Government (Moumouni, *in litt.,* 1996). Based on a survey conducted in Lome, the capital, in 1989 these stocks consisted of 214 pieces of raw ivory weighing 1544 kg, with the remainder comprising worked ivory products. More ivory may be in the interior of the country. The average tusk weight of the raw ivory stock was 7.2 kg, the largest within west Africa. Ivory reportedly accumulates in Togo at a rate of less than 500 kg per year, and these stocks are held in the private sector (Moumouni, *in litt.,* 1996).



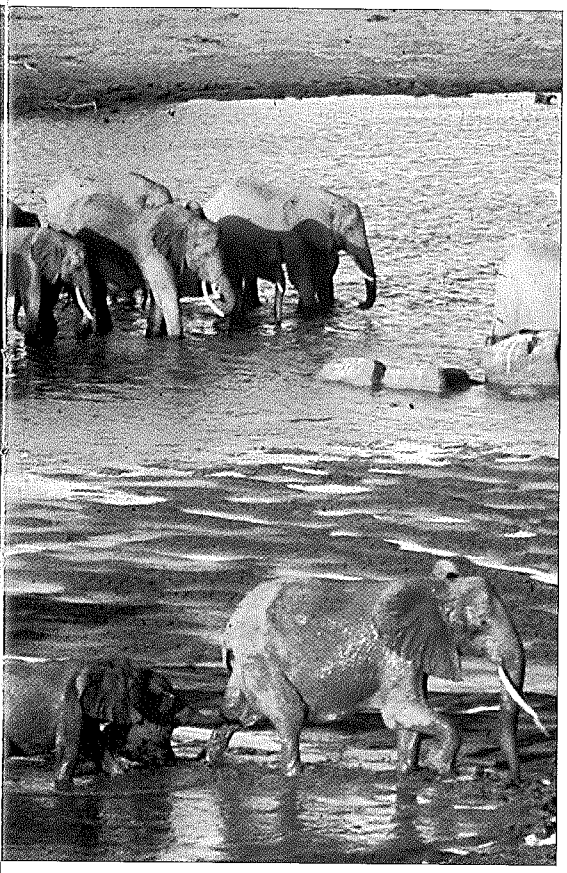
WWF/George W. Frame

CENTRAL AFRICA

Cameroon: In mid-1994, ivory stocks in the custody of Government authorities appeared to be minimal. Only 239 ivory tusks, weighing 511 kg, were identified by researchers; primarily old stock, with an average tusk weight of only 2.1 kg, this ivory held little commercial value (Dublin *et al.*, 1995). Researchers reported that most provincial authorities commonly dispose of ivory in their possession on local markets (Dublin *et al.*, 1995).

Central African Republic: In 1990, there were an estimated 3800 kg of ivory in the Central African Republic (Caldwell and Luxmoore, 1990). In 1995, in response to the CITES Secretariat questionnaire, Government officials acknowledged the existence of privately-owned stock totalling 504 kg, which consisted of 366 pieces (Anon., 1995a). In November 1996, Government sources reported that this stock was in fact held by Government and not privately owned (Ngongba-Ngouadakpa, pers. comm., 1996). At 1.4 kg, the average tusk weight is exceptionally low and indicates very poor quality stock.

Chad: In September 1996, Government officials reported that there are no ivory stocks in Chad (Anon., *in litt.,* 1996b).



African Elephants *Loxodonta africana*, Tsavo National Park, Kenya.

Congo: In 1992, local ivory dealers suggested that 40 000 kg of ivory were privately held in Brazzaville, of which some 25% was verified by researchers at the time (Fay and Agnagna, 1993). The status of these stocks is unknown but, in November 1996, Government sources acknowledged that about 1000 kg of ivory were in Government custody, and at least 3000 kg of ivory were held by the private sector, although data on the number of pieces were not available (Tsila, pers. comm., 1996).

Equatorial Guinea: In November 1996, officials reported that no ivory stocks were in the hands of the Government, but that the private sector held an estimated 1000 kg of worked ivory products (Engono, pers comm., 1996).

Gabon: In 1990, it was estimated that Gabon's stock of ivory totalled 1300 kg (Caldwell and Luxmoore, 1990). Since then, the local press has reported the seizure of some 2400 kg of ivory, but a 1994 study could only identify 53 tusks or pieces of ivory, weighing 610 kg, under Government custody (Dublin *et al.*, 1995). The average tusk weight of these stocks was 11.5 kg, indicating extremely large pieces of good quality ivory (Dublin *et al.*, 1995). In September 1996, Government sources reported that 660 kg, representing 183 pieces of raw ivory, and 352 kg of worked ivory were presently held in Gabon (Anon., *in litt.,* 1996d). These stocks reportedly originated from confiscations and problem animal control exercises, and had an average tusk weight of 3.6 kg (Anon., *in litt.,* 1996d).

Zaire: Based on three CITES export permits which were issued in 1989, but never used, an estimated 9600 kg of ivory were presumed to be held by Government authorities when the ivory trade ban took effect (Caldwell and Luxmoore, 1990). Although unverified, it was further speculated that "well in excess of 100 tonnes" of raw and worked ivory were also held in the interior of the country (Caldwell and Luxmoore, 1990). The status of this ivory is not known. However, a detailed account of ivory stocks held in January 1996 in Garamba National Park, in the north-east of the country, totalled 1223 kg and consisted of 307 tusks (Hillman-Smith, *in litt.,* 1996). In November 1996, it was further reported that another 151 tusks, weighing 691 kg, were held in three other protected areas, and that Parc Kahuzi Biega held another 42 ivory tusks for which the weight is not known (Eulalie, *in litt.,* 1996). The majority of this ivory, which had an average tusk weight of 4.2 kg, was confiscated or recovered from elephants that had been poached for meat (Hillman-Smith, *in litt.,* 1996). Based on applications for ivory export permits at the time the ban took effect, at least 14 125 kg of ivory were privately held by exporters and local dealers in the Kinshasa area in 1989 (Eulalie, pers. comm., 1996).

EAST AFRICA

Eritrea: In September 1996, Government sources reported 2755 kg of ivory, including 21 whole tusks, in the hands of individual traders (Anon., *in litt.,* 1996a). Most stock represents worked ivory and the rate of increase is reported to be negligible.

Ethiopia: In December 1993, TRAFFIC worked with Ethiopia's wildlife authorities to assess Government-held ivory stocks at the central store in Addis Ababa, the capital. Largely deriving from confiscations, a total of 826 ivory tusks and pieces, weighing 3100 kg, 33 kg of ivory chips and 34 kg of ivory bangles, were registered and marked in the exercise (Milliken, 1995). In 1993, Government authorities also confirmed that 166 tusks, weighing 786 kg, and 4179 pieces of worked ivory, weighing 557 kg, were held by six licensed dealers in Addis Ababa (Anon., 1994a). In November 1996, Government-held stocks weighed 3822 kg, consisting of 922 tusks or pieces, while a total of 2417 kg were held in the private sector, including 28 tusks which derive from sport hunting but had not been exported (Tekle, pers. comm., 1996). Overall, the average tusk weight of the Government ivory stocks is 4.1 kg. The Government reported that confiscations yield less than 500 kg annu-

ally (Selasie, *in litt.,* 1996). Other, illicit ivory stocks were reported in the capital city's craft markets in 1993 (Vigne and Martin, 1993) and, in August 1995, TRAFFIC investigators were offered a total of 688 kg of ivory in three separate incidents (Anon., 1995b).

Kenya: Kenya is the only African country which destroys its ivory stocks at fairly regular intervals, and does so without any direct compensation from outside sources. Between July 1989 and February 1995, it reportedly destroyed nearly 27 000 kg of ivory in public burnings: 11 055 kg, representing 2412 tusks, in July 1989, before the CITES ban was even in place; 5943 kg, consisting of 1133 tusks, in July 1991 (Dublin *et al.*, 1995), and reportedly 10 000 kg in February 1995; data concerning the precise number of tusks or pieces in the most recent burning were never made available (Chunge, *in litt.,* 1995). Nevertheless, by September 1996, Kenya's ivory stocks totalled approximately 3900 kg and comprised 404 tusks (Ruhiu, *in litt.,* 1996). With an average tusk weight of 9.7 kg, Kenya's current stock includes 52 large tusks, weighing 1114 kg, which were deliberately spared from the burnings (Dublin *et al.*, 1995; Chunge, pers. comm. 1995). There are no commercial ivory stocks in the hands of private individuals in Kenya (Ruhiu, *in litt.,* 1996). From July 1989 to February 1995 inclusive, available data indicate that ivory was accumulating at approximately 2700 kg each year (Milliken, 1995), while the Government reports that this has dropped to less than 2000 kg annually (Ruhiu, *in litt.,* 1996). Kenya's present ivory stocks derive primarily from elephants killed during the control of problem animals and from natural elephant mortality, with confiscations another, but less important, source (Ruhiu, *in litt.,* 1996).

WWF/Ed Wilson

Ivory stocks being burned in Nairobi, Kenya, July 1989.

Rwanda: Government officials reported in September 1996 that there are no ivory stocks in Rwanda at the present time, but that a small stock, weighing about 10 kg, was stolen in April 1994 when civil war erupted (Karamaga, *in litt.,* 1996).

Somalia: In October 1989, pursuant to its CITES export quota, Somali authorities legally issued five permits for the export of 1653 tusks, weighing 11 300 kg, to Japan; however, this transaction never occurred because a Japanese import ban took effect in the interim (Caldwell and Luxmoore, 1990). As there was no information to suggest that the ivory was legally exported elsewhere, it is believed that this stock remained in Somalia in 1990 (Caldwell and Luxmoore, 1990). With the subsequent outbreak of civil war, it has been virtually impossible to update the status of Somalia's ivory stocks. However, investigations and anecdotal information indicate that ivory continues to be on offer in Somalia, and small-scale seizures from members of UN-sponsored security forces or aid workers travelling from Somalia have occurred (Milliken, 1995). Further, in August 1995, Somali nationals in Djibouti offered TRAFFIC investigators 10 000 kg to 15 000 kg of ivory, a stock which was reportedly in Mogadishu, the Somali capital, at the time (Anon., 1995b).

Sudan: In October 1993, a collaborative effort between the Sudanese Government and TRAFFIC resulted in the inventory and marking of a total of 10 874 ivory tusks and pieces, totalling 46 828 kg (Milliken, 1995). Of these stocks, 41 963 kg, representing 9706 tusks, were legally held by five authorized traders, and 4865 kg, consisting of 1168 tusks, belonged to the Government. These stocks were first reported in 1988, and were part of the country's approved CITES export quota for that year. In Sudan's arid climate, the quality of this stock had deteriorated considerably by 1993, losing approximately 15% of its weight since it was first weighed in 1988, owing to the evaporation of moisture (Milliken, 1995). With an average tusk weight of 4.3 kg, this collective stock has lost much of its commercial value since the CITES ban took effect (Milliken, 1995). The prospect of additional, and possibly large, stocks of ivory surfacing in southern Sudan when current civil unrest and security problems are resolved remains a likely possibility. Already a stock of ivory is reported in the Dafar region, although details on its size are unknown (Kamil, pers. comm., 1996).

Tanzania: In 1990, Tanzania's ivory stock was estimated at a minimum of 30 000 kg (Caldwell and Luxmoore, 1990), while a more detailed estimate in June 1991 indicated a stock of 10 313 tusks, weighing 34 642 kg (Dublin and Jachmann, 1992). In 1994, TRAFFIC undertook a comprehensive survey of all ivory stocks held by three Government wildlife authorities at various locations, and found a total of 13 706 tusks and pieces, weighing 52 296 kg (Dublin *et al.*, 1995). In November 1996, Government officials reported that total stocks

now stood at 71 667 kg, primarily due to increasing large-scale confiscations of ivory (Severre, pers. comm., 1996). This is the largest Government-held ivory stock in Africa; the average tusk weight, estimated at 3.8 kg, is comparatively low, however, and suggests inferior quality stock. These data indicate that over the last two years, Tanzania's ivory stocks have grown by nearly 9000 kg annually, the largest growth in Africa.

Uganda: In mid-1995, in collaboration with TRAFFIC, Ugandan authorities conducted an inventory of all ivory stocks in Government custody, identifying 83 tusks, weighing 251 kg, and 103 semi-processed ivory blocks which weighed 97 kg (Anon., 1996a). Another 102 kg of confiscated ivory was reportedly held by Customs officials at the time (Anon., 1996a). Most of this ivory was acquired after 1990 when the Government's holdings reportedly totalled only 74 kg (Anon., 1995a). In November 1996, Ugandan officials reported a Government stock of 778 kg and a privately-held stock of 676 kg (Okua, pers. comm., 1996). The average tusk weight of the Government stock of 3 kg is rather low, and the data indicate that 80% of the ivory was obtained through law enforcement operations, while 20% derived from natural elephant mortality (Anon., 1996a). The overall rate of increase of the Government stock is less than 500 kg per year, and this is mostly derived from confiscations (Okua, *in litt.*, 1996).

SOUTHERN AFRICA

Angola: Many ivory seizures in neighbouring Namibia and Zambia point to Angola as the likely source of the ivory, and suggest that significant ivory stocks may exist in Angola (Anon., 1990; Dublin *et al.*, 1995), but this has not been officially verified.

Botswana: In 1990, Botswana's ivory stocks were estimated at between 5000 kg and 7000 kg (Caldwell and Luxmoore, 1990). By 1992, these stocks had reportedly grown to an estimated 15 000 kg (Anon., 1992). In September 1996, Government sources confirmed 29 706 kg of ivory, representing 4746 tusks, in the hands of Government agencies (Theophilus, *in litt.*, 1996). These data indicate a rate of increase of nearly 3100 kg of ivory annually (Theophilus, *in litt.*, 1996). Natural elephant mortality is the major source of ivory in Botswana, with confiscations and problem animal control playing a much lesser role (Theophilus, *in litt.*, 1996). The average tusk weight is 6.3 kg, a figure above the average for Africa as a whole, but less than the regional average.

Malawi: In August 1994, the Government held 1649 ivory tusks or pieces, weighing 4873 kg (Dublin *et al.*, 1995). In September 1996, Government-held ivory stocks totalled 4740 kg and consisted of 1620 tusks or pieces (Anon., 1996b), and the private sector reportedly held 634 kg of ivory (Msefula, *in litt.*, 1996). While the average tusk weight has dropped slightly, 3 kg in 1994 to 2.9 kg, current stocks represent a decline of 133 kg since the 1994 assessment (Anon., 1996b). In fact, over the last 24 months, the Government legally sold 171 tusks or pieces, weighing 765 kg, to registered trophy dealers. Consequently, Malawi is perhaps the only country holding a significant volume of ivory where legal sales to the local market are outpacing the accumulation of new stocks. Between 1990 and 1994, Malawi's ivory stocks increased by some 700 kg annually (Dublin *et al.*, 1995), however, since then, this rate has dropped to slightly more than 300 kg each year (Anon., 1996b).

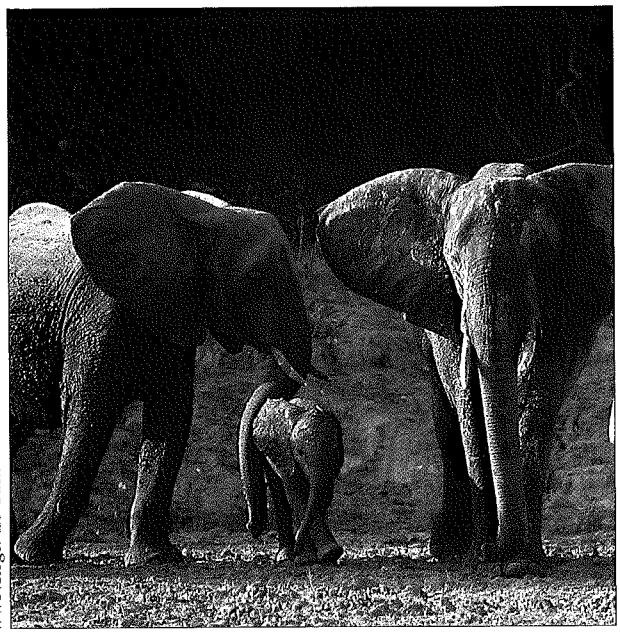
Mozambique: In 1987, Mozambique submitted an export quota to the CITES Secretariat for 19 700 tusks. However, by the end of 1989, only 4063 tusks, weighing some 21 000 kg, had been officially exported (Caldwell and Luxmoore, 1990). It was therefore estimated that approximately 80 000 kg of ivory remained in the country at the time the CITES ban took effect (Caldwell and Luxmoore, 1990), but these stocks were never verified owing to civil war in the country. In September 1996, the Government acknowledged the existence of approximately 2000 kg of ivory, representing about 100 tusks (Soto, *in litt.*, 1996). These stocks need further investigation as the average tusk weight of 20 kg seems improbably high. Mozambique's stocks are reportedly growing by less than 500 kg annually, with confiscations generating the greatest volume, while ivory obtained during problem animal control and natural elephant mortality remain less important sources of Government-held stocks (Soto, *in litt.*, 1996). Rumours that large, privately-held stocks of ivory remain secreted in parts of the country have not been verified (Milliken, 1995).

Namibia: In 1990, it was suggested that Namibia's ivory stocks totalled more than 20 000 kg (Caldwell and Luxmoore, 1990). By early 1992, this stock had reportedly increased to approximately 26 000 kg (Milliken, 1992), suggesting an annual growth rate of nearly 3000 kg (Milliken, 1995). In September 1996, Government-held ivory stocks totalled 41 400 kg, composed of 7436 tusks and pieces, while privately owned ivory accounted for 9800 kg, representing 1051 tusks and pieces (Lindeque, *in litt.*, 1996). The average tusk weights of these stocks, 5.6 kg and 9.3 kg respectively, are higher than the African average. Confiscations and natural elephant mortality, followed by problem animal control and culling are the major sources of Namibia's ivory stock, which is increasing at an annual rate of between 2000 kg and 4000 kg (Lindeque, *in litt.*, 1996).

South Africa: At the time the CITES trade ban took effect in 1990, it was estimated that South Africa held only 6000 kg of ivory (Caldwell and Luxmoore, 1990). This figure considerably under-represented the country's stocks, as a national registration exercise in 1991 revealed a total of 65 978 kg of ivory in the country, including a very large volume of privately-held stock (Anon., 1991). In 1994, South Africa's total ivory stock

reportedly weighed 69 917 kg, and consisted of 8214 tusks and pieces, owing to an increase in Government-held ivory (Anon., 1994b). In October 1996, Government officials confirmed that South Africa held the largest volume of ivory in Africa. Totalling 89 134 kg, an estimated 51 284 kg of ivory, made up of 5503 pieces, were held in the private sector, while 37 850 kg of ivory, consisting of 5853 pieces, were held by various Government authorities, especially the National Parks Board (Meintjes, *in litt.,* 1996; Hall-Martin, *in litt.,* 1996). The average tusk weight of ivory held in the private sector is a fairly high 9.3 kg, while the Government stock average tusk weight of 6.5 kg is slightly below the regional average. Growth in the Government's stock in the post-ban period is attributed to ivory derived from culling, confiscation, crop protection and natural elephant mortality.

Swaziland: A confiscated stock of ivory in the hands of Swaziland's Customs authorities was reportedly stolen in 1995, but further information is not available (Milliken, 1995).



WWF/Roger Le Guen

South Luangwa National Park, Zambia.

Zambia: Zambia eliminated its ivory stocks by publicly burning 5496 tusks or pieces of ivory, weighing approximately 8000 kg in February 1992. By September 1994, however, a total of 3614 kg of ivory was in Government custody (Milliken, 1995), and in October 1996, Government officials reported that the total had grown to 6514 kg, consisting of 1543 pieces (Mwima, pers. comm., 1996). Much of Zambia's current ivory stocks derive from confiscations, including large-scale seizures of tusks believed to have originated in Angola (Dublin *et al.*, 1995). These data suggest that ivory is coming into the hands of Zambian Government authorities at the rate of some 1300 kg annually. The average tusk weight of Zambia's ivory stocks is 4.2 kg.

Zimbabwe: Zimbabwe's ivory stock has been described as one of the best managed and fastest growing in Africa (Dublin *et al.*, 1995). The estimated 8000 kg-12 000 kg of ivory in Government custody in 1990 (Caldwell and Luxmoore, 1990), had reportedly grown to over 30 000 kg by August 1993 (Anon., 1993). In November 1996, the Government reported that 29 280 kg, comprising 2839 tusks, of ivory were presently in stock. These data reflect the fact that Zimbabwe continues to offer ivory to local licensed buyers at weekly sales. In fact, without local sales, these stocks would total over 63 000 kg as, from 1990 through 1995, the Government has sold at least 33 787 kg. Taking these sales into consideration, the rate of increase is actually greater, with the Government indicating that over 8000 kg of ivory comes into their possession annually (Machena, *in litt.,* 1996). Problem animal control measures and natural elephant mortality are the major sources of ivory in Zimbabwe, with confiscation playing a minor role (Machena, *in litt.,* 1996). With an average tusk weight of 10.3 kg, the highest in Africa, Zimbabwe holds one of the best ivory stocks in Africa.

NON-RANGE STATES

Burundi: Although not an African Elephant range state in recent years, Burundi has historically functioned as a major entrepôt for ivory in the region. A total of 84 250 kg of ivory was registered in Burundi at the time the country joined CITES in 1988, and these stocks were in Government custody when the CITES trade ban came into effect. Since then, subsequent ivory confiscations amounting to approximately 1750 kg, indicate a total stock of 86 000 kg (J. Thomsen, pers. comm., 1995). In view of continuing political instability in Burundi, TRAFFIC has suggested that a CITES-authorized mission to reconfirm the status of the Government's ivory stocks would be an appropriate action (Milliken, 1995).

Djibouti: In 1990, Djibouti reportedly held 2000 kg of ivory (Caldwell and Luxmoore, 1990). In 1995, TRAFFIC investigators confirmed the existence of 1664 kg of ivory, consisting of 300 tusks or pieces, in the hands of a local trader who has reportedly held the stock since 1981 (Anon., 1995b). Owing to Djibouti's arid climate, it is presumed that the condition of this very old stock has deteriorated, and that this is the primary reason it has never been sold. In July 1992, the reported seizure of 486 kg of ivory in Djibouti suggests that other ivory stocks are also held by the Government, but this has not been confirmed. In addition to large volumes of ivory being offered for sale in Djibouti by Somali traders in August 1995 (see Somalia above), two local dealers offered TRAFFIC investigators a total of 1290 kg of ivory in three separate incidents (Anon., 1995b).

Country	Volume of ivory (kg)	Source
Congo	40 000	Fay and Agnagna, 1993
Djibouti	1 290	Anon., 1995b
Ethiopia	688	Anon., 1995b
Côte d'Ivoire	10 000	Caldwell and Luxmoore, 1990
Mozambique	80 000	Caldwell and Luxmoore, 1990
Somalia	11 000-15 000	Caldwell and Luxmoore, 1990; Anon., 1995b
Zaire	100 000	Caldwell and Luxmoore, 1990
Total	242 978-246 978	

Table 2. Unverified ivory stocks in Africa.

The Volume of Ivory in Africa

As this report demonstrates, Africa's ivory stocks continue to grow. Currently, available evidence suggests that a minimum of 462.5 t of raw ivory is legitimately held in 27 out of 38 sub-Saharan African range states, while six other countries reportedly have no stocks (Table 1). Undeclared or illegal stocks of ivory may exist in significant volumes in various parts of Africa. Unverified information indicates that more than 243 t of such ivory could be held in Congo, Djibouti, Ethiopia, Côte d'Ivoire, Mozambique, Somalia and Zaire (Table 2), but identification and verification of these stocks presents a formidable challenge and may never be possible. In addition, a number of reports have alluded to significant ivory stocks in Angola and southern Sudan, but no realistic assessments of actual volumes have been given (Dublin *et al.*, 1995; Milliken, 1995). As some of these estimates were made more than six years ago, it is likely that some of this stock may have been traded illegally in the interim and no longer remains in Africa.

Given these uncertainties, it is not possible to quantify the total volume of raw ivory presently held in Africa, but past estimates of some 500 t (Milliken, 1995) now appear to understate the true volume. A more realistic "conservative" figure is probably closer to 600 t.

There is little doubt that decisions to allow or not to allow trade in ivory will most directly impact southern African countries; these countries presently hold 46.1% of all verifiable ivory stocks in Africa. Collectively, government stocks in this region are apparently increasing by nearly 20 000 kg each year, the fastest rate in Africa. With over 28.7% of the total, east African countries, particularly Sudan and Tanzania, are also among the principal holders of ivory. Two non-range states which have traditionally functioned as entrepôts, Burundi and Djibouti, hold another 19% of Africa's total identified stock of ivory. On the other hand, west and central African countries, with barely 6.2% collectively, hold comparatively insignificant stocks of ivory, although information yet to be gathered from Congo, Côte d'Ivoire and Zaire and perhaps other countries could alter this profile considerably in the future.

Ivory stock size, plus the attendant economic and political issues that these stocks give rise to, will certainly increase, particularly in east and southern Africa. Based on data for the legally-held ivory stocks identified in this report, throughout Africa, it may be that over 31 700 kg of ivory is accruing to government authorities on the continent each year. This means that ivory will accumulate in Africa at the rate of approximately 100 t every three years if current variables remain equal.

Region	Total volume of ivory (kg)	% of overall total	% of private stocks	Rate of increase
West Africa	5 694	1.2%	89.3%	>500
Central Africa	23 066	5.0%	78.6%	500-1000
East Africa	132 843	28.7%	36.0%	>11 000
Southern Africa	213 208	46.1%	28.9%	>19 700
Non-range states	87 664	19.0%	1.9%	?
Total	462 475	100.0%	29.1%	>31 700

Table 3. Minimum estimate of Africa's ivory stocks, by region.
Sources as for Table 1.

Economic Issues: Future Assets or Current Liabilities

Ivory has traditionally been viewed as a valuable trade item in Africa. Indeed, it has been legal tender for millennia. Today, with few exceptions, most African nations which currently, or potentially, hold growing stocks of ivory continue to regard it as a valuable economic asset (Table 1). This is especially true in southern Africa where the largest, best quality and fastest growing stocks of ivory are found. Elsewhere, in countries such as Ghana or Eritrea, which hold very small stocks of ivory, and where future prospects for acquisition remain very modest, ivory is generally not seen as an economic asset at the national level (Table 1). This appears also to be the case in countries such as Togo, where all stocks are held by the private sector, and, presumably, in countries like Sierra Leone and Guinea Bissau which have no stocks whatsoever (Table 1). Kenya alone stands out as an exception to the general rule in that, regardless of its current stocks and the comparatively high annual rate of accumulation, the Government does not officially view ivory as an economic asset (Table 1).

While Africa's ivory stocks continue to be seen as a potentially lucrative source of revenue by many government authorities, in a practical sense, government-held ivory essentially remains an economic liability in the post-CITES trade ban period. As stocks accumulate, the need to continue investing in their management and security does not diminish. Indeed, it probably grows more acute if there is a commitment to accountability. So far, most countries have managed to do this without any donor assistance, and at a time when the real value of wildlife department budgets throughout Africa is dropping owing to high inflation, extreme currency devaluations and other socio-economic factors.

Another important economic issue is the fact that, without expensive quality control measures, the value of Africa's ivory is likely to depreciate over time. As mentioned, over a five-year period TRAFFIC documented a 15% reduction in the weight of Sudan's ivory stocks from loss of moisture (Milliken, 1995). To prevent similar deterioration of its considerable ivory holdings, Namibia has invested in very expensive humidifying equipment to safeguard the value of its stocks. No one has calculated the annual depreciation rate for Africa's ivory stocks as a whole, but the total loss of value could be considerable, with certain countries affected more directly than others.

While CITES does not preclude a domestic ivory trade, few countries allowing such trade are realizing sufficient revenues from local sales to recoup the investment in management and protection of their stocks. In most cases (Malawi being an exception), local markets are not able to absorb available supplies and ivory continues to accumulate. Moreover, revenues from local currency sales are substantially reduced and fail to capture the "hard currency" value ivory realized before the ban.

Political Issues: Pressures for a Solution

The link between economics and politics is fairly immediate in one of the poorest and most debt-ridden regions in the world. It is often very difficult for politicians in economically depressed nations to view mounting stocks of ivory complacently and willingly forego their monetary value for the "common good of the African Elephant". Rather, politicians are more inclined to view liquidation of ivory stocks as an expedient means to support other urgent development needs, leaving wildlife authorities hard-pressed to explain the rationale of CITES restrictions and why such action is not internationally acceptable at the present time. In some parts of Africa, these political pressures are mounting in the face of rising human/elephant conflict, and at a time when accountability to an increasingly democratized electorate has never been more pronounced. In such situations, the existence of ivory stocks can be a political liability.

However, the interface between politics, elephants and CITES in Africa is not always one of misunderstanding and thwarted aspirations. Indeed, two African Elephant range states - Kenya and Zambia - have made dramatic political statements about the need to conserve elephants by publicly incinerating their ivory stocks. Kenya's destruction of nearly 27 t of ivory was carried out without any overt international assistance for its actions. The first burning in July 1989 occurred before the CITES trade ban was even decided and consequently had enormous political impact. Zambia's actions were equally potent on the political front in early 1992, but with UK-based non-government organizations subsequently contributing more than £100 000 (US$150 000), there was an element of compensation involved. While Kenya's policy of destruction of its ivory stockpiles continues, it is unclear if such an event will ever be staged again in Zambia.

For most other African nations, however, the option of wholesale destruction may only be acceptable at the political level if compensation is commensurate with the perceived value of the ivory itself. So far, there have been no "ivory buy-outs" by donor agencies or multi-lateral financial institutions, who seem to demonstrate a reluctance to consider purchasing ivory at market prices for secure holding or destruction. An across-the-board commitment towards purchasing range state ivory holdings would certainly require recurrent expenditure of millions of dollars. Others are looking at "debt swaps" and other such financial possibilities to see if there are viable options for mitigating the ivory stock "burden" in Africa. For the moment, however, no immediate solutions appear to be at hand and, in any event, all such measures would necessarily be based on bilateral financial mechanisms unique to the debt structure and circumstances of a particular country. There is no scope for formulating a universal solution for all countries.

Legal Issues: The Reach of the Law

It also needs to be appreciated that constitutional and other legal constraints are operative in matters relating to ivory stocks. In the aftermath of the CITES ban, few countries have enacted specific legislation governing all aspects of the trade in ivory. Therefore, most trade regulation is subject to the provisions of longstanding national wildlife statutes which do not address the complexities of the ivory issue as it stands today, and may even be an impediment to the goal of strict regulation.

Available information indicates that the legislation in at least 16 African countries - Benin, Botswana, Burkina Faso, Cameroon, Central African Republic, Chad, Equatorial Guinea, Ghana, Guinea Bissau, Côte d'Ivoire, Malawi, Mozambique, Namibia, South Africa, Togo and Zimbabwe - continues to allow some form of domestic trade in ivory. Other countries, such as Congo, Ethiopia, Gabon, Nigeria, Senegal and Zaire, have laws prohibiting trade in ivory, but local ivory markets are known to exist without much legal interference from local law enforcement authorities. Ironically, this list includes a number of countries which have been vocal advocates of maintaining the international trade ban under CITES, yet continue to allow ivory to be bought and sold on local domestic markets.

Legally speaking, it is generally not possible for African governments to consolidate all ivory stocks under their direct authority, or, in many instances, to prevent commercial trade. Table 1 shows that some 118 t of ivory, 28% of Africa's total known stocks, are legally held by the private sector. In some countries, such as Togo and Eritrea, this constitutes the entire known stock in the country. Ethiopia, for example, banned the domestic trade in worked ivory in 1974, but worked ivory products continue to be available in considerable quantities in

the country's craft markets. Possession, and presumably sale, of pre-ban stocks cannot be prevented. The basis for distinguishing between "legal" and "illegal" ivory products remains confused enough to make the law largely unenforceable, even more than twenty years after its introduction.

Management Issues: Striving for Accountability

Even though donor assistance is not forthcoming, there is little doubt that the international community still expects African range states to manage their ivory stocks in an accountable and secure manner. In fact, there is considerable variability in the management of ivory stocks throughout the continent. Generally speaking, the best systems are found in certain east and southern African countries, where it is not uncommon to find individual ivory tusks and pieces marked, registered, securely stored and traceable back to their source (Dublin *et al.*, 1995; Milliken, 1995). In this region, sophisticated computerized databases are increasingly part of ivory stock management plans. Conversely, many countries, particularly those in west and central Africa, have no systematic method for storing ivory, and may even consciously choose to avoid long-term supervision and record-keeping altogether (Dublin *et al.*, 1995).

Under the CITES export quota system, the basic parameters of sound management were spelled out, including specifications for the marking of tusks and ivory pieces, and the keeping of registers of all stock. Official designation of a government body for maintaining a country's stock of ivory is the first step. In some countries, such as Zimbabwe or Kenya, the situation is very clear and the wildlife authorities serve as a central repository for all ivory. In other nations, such as Gabon or Swaziland, ivory may be held by a number of different authorities simultaneously, including Customs, the Finance Ministry, the military and others. Where ivory is held by a number of authorities, a synchronized system is rarely in place and accountability often remains diffuse, giving rise to security problems.

In fact, the existence of growing stocks of ivory is usually an indication of good management and law enforcement practices, and should be viewed as an emblem of accountability on the part of government authorities.

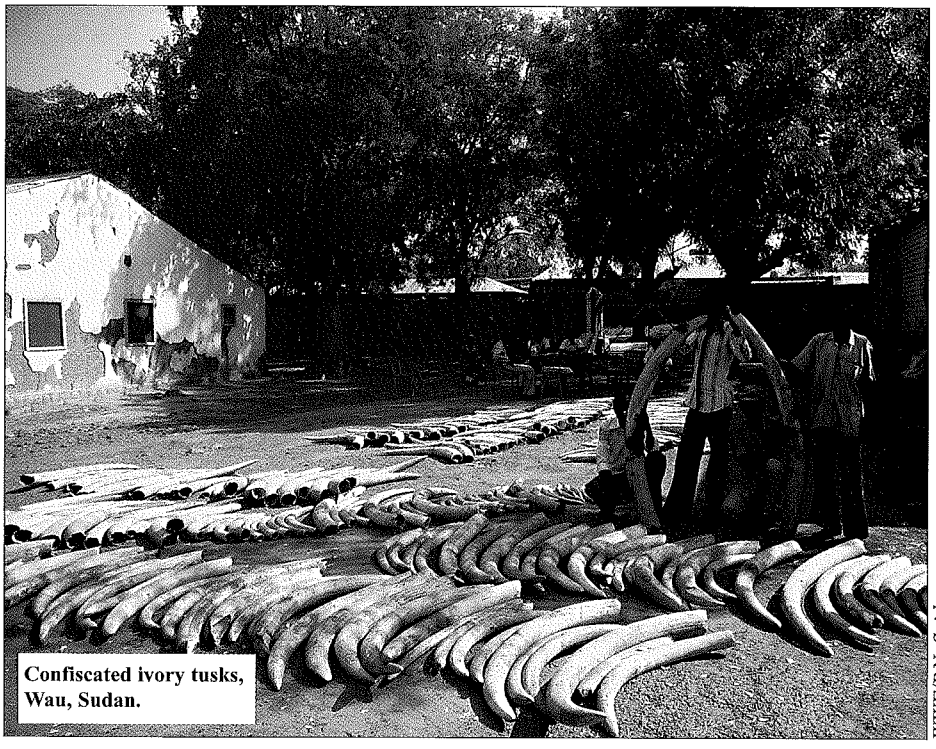
Security Issues: Investment in Protection

Perceived as a valuable commodity which may be subject to theft, ivory stocks require a constant investment in their security. Since the CITES trade ban took effect, TRAFFIC has documented ivory thefts in Cameroon, Gabon, Côte d'Ivoire, Nigeria, Rwanda, Swaziland and Tanzania (Milliken, 1995; Dublin *et al.*, 1995). The situation is extremely variable throughout Africa: some countries have built very secure strongrooms for the storage of ivory and other valuable wildlife products, and have armed guards in constant attendance. The issue of space is extremely important for those countries with a high rate of annual accumulation. Namibia, for example, has had to increase the size of its storage facilities by some 250% since joining the Convention because the rate of stock accumulation has been so great. At the other extreme, there are no formal facilities at all and ivory is held in any number of places.

Conservation Issues: National, Regional or Continental

In the international arena, it is the conservation aspects of this issue which predominantly frame the debate, sometimes to the exclusion of all other considerations. There is a legitimate concern that sanctioning international trade in ivory from certain countries could stimulate poaching and illegal trade in ivory in other parts of Africa. This argument has also been used against allowing trade in non-ivory elephant products.

In reality, cause and effect of policy initiatives under CITES are very difficult to evaluate against quantitative



Confiscated ivory tusks, Wau, Sudan.

WWF/P.N. Snider

measures in the face of many inconsistencies and poor data on the ground (Dublin and Jachmann, 1992; Dublin *et al.*, 1995). For example, some of the countries which have been most vocal in opposing trade in elephant products continue to allow ivory to be displayed and sold on local markets, or make virtually no investment in protecting and managing elephants in the field. Many argue that local conditions and "signals" are more directly related to the level of elephant poaching in a national context than, say, policy decisions under CITES affecting another, often distant, part of the continent. For example, one recent analysis demonstrates a significant and direct correlation between fluctuations in the number of illegally killed elephants in the Luangwa Valley in Zambia and the allocation of resources and other inputs in the field, than with the CITES trade ban itself (Jachmann and Billiouw, in press). Careful consideration must be given to find the most effective way to monitor the ramifications of current and future policy decisions.

On the other hand, the related issue of whether illegal trade dynamics will arise and threaten elephant populations irrespective of the ban also needs to be assessed in detail. At the time the CITES trade ban was enacted, certain resource economists predicted that this decision would result in an immediate and marked drop in ivory trade volumes worldwide. This would be a short-lived phenomenon, they argued, however. "New demand will be brought on line from states previously priced out of the market", and "after the initial price fall and the transition to new markets, the ivory pipeline will re-open and the price of ivory will begin to rise once again" (Barbier *et al.*, 1990). Already, there is evidence to support the contention that elephant poaching is on the increase in a number of countries (Dublin *et al.*, 1995), and that the volume of illegal ivory seized around the world is possibly increasing (Milliken and Sangalakula, 1996).

Finally, if it can be determined from quantitative data that elephant poaching is on the increase irrespective of the ban, there are those who argue that a well-controlled legal trade may serve the interests of elephant conservation by undermining black market networks and enabling government authorities to earn badly-needed revenues to protect and manage elephant populations in the field. While these issues are extremely complex, at the very least, it needs to be appreciated that the issues of declining conservation finances, diminishing law enforcement capabilities, and increased elephant poaching are interlinked and must be dealt with in a holistic and strategic manner if remedial action is to be effective.

Conclusions

There is little doubt that Africa's growing ivory stocks represent an extremely complex range of issues for many African range states, and that these complexities cannot be ignored indefinitely. At the African Elephant range states meeting in Dakar in November 1996, six options for dealing with ivory stocks were identified and discussed in some detail:

1) **Destruction and disposal without compensation:** This option was generally not favoured unless specifically desired by an individual range state.

2) **Destruction or disposal with compensation:** This solution was seen as a possibility for certain range states in the context of specific bilateral arrangements but, as a whole, it was recognized as unrealistic for most countries, as the likelihood of identifying a long-term source of compensation appears remote.

3) **Indefinite secure storage:** Although recognized as the current option in default of other practicable alternatives, this situation was not regarded as providing a viable, long-term solution.

4) **Mortgage the ivory:** Raised as a possibility but not discussed in detail, this option could be regarded as a subset of 2) above and probably has limited applicability as an overall solution.

5) **Sale through legal, well-managed domestic ivory markets:** Identified as an existing option under CITES, it was noted that in many instances such markets require improved management and control.

6) **Sale through re-established legal system to international markets:** While recognized as a future possibility, concerns about the potential stimulation of illegal trade and a negative impact on some elephant populations were expressed.

While the Dakar meeting marked progress in identifying options, moving towards consensus on viable solutions is another matter. Overall, the incidence of mounting ivory stocks within Africa and the associated problems described above, presents African countries with a dilemma which is clearly difficult to resolve. The opportunity costs imposed by the CITES trade ban are clearly not equal throughout the continent, and the point where national or regional aspirations to dispose of legitimate ivory stocks takes precedence over continental or international agendas, which continually thwart such aspirations, might rapidly be approaching. Recognizing the vast differences that exist between one African country and another in terms of elephant numbers, ivory stocks and institutional management capabilities, achievement of a lasting solution which binds, rather than divides, African Elephant range states, will only be possible through a continued commitment to dialogue and a strong measure of compromise on all sides.

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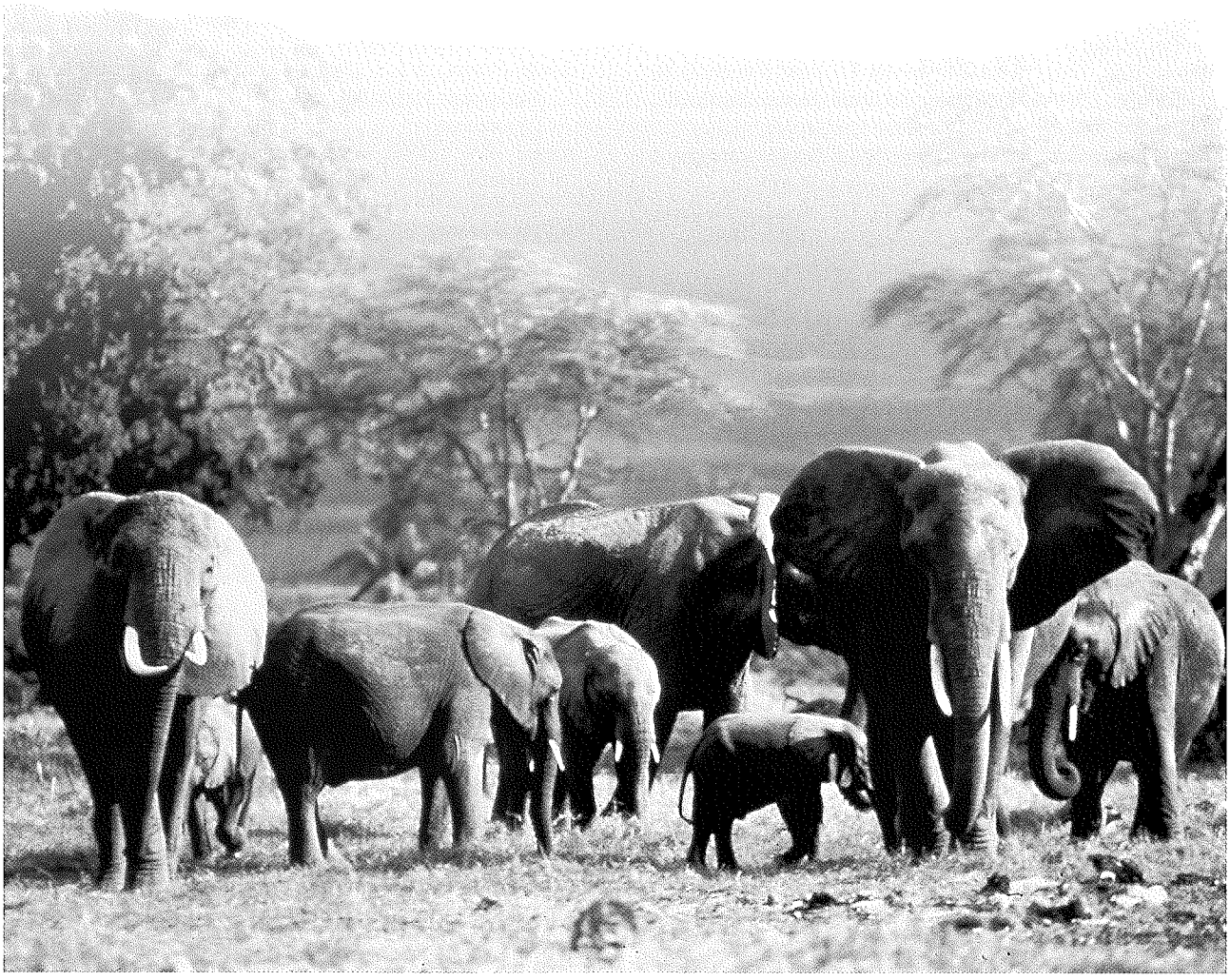

WWF/M. Rautkari

New Information on East Asia's Market for Bear Gall Bladders

J.A. Mills, T.S. Kang, S. Lee, K.H., R. Parry-Jones and M. Phipps

East Asia is the centre of world demand for bear gall bladders and bile, which are used in traditional medicines for conditions ranging from liver cancer to haemorrhoids to conjunctivitis. Results of a regional TRAFFIC investigation in 1995 fuelled concerns that trade in these bear products may continue to place pressure on declining wild bear populations, especially in Asia. Further, the price of bear bile was significantly higher than was recorded in a 1991 TRAFFIC study in the region which found trade to be pervasive. In August 1996, TRAFFIC East Asia conducted a follow-up survey in China, Hong Kong, South Korea and Taiwan. The findings of this investigation indicate that Asian demand for bear gall bladders and bile remains strong, as the following report shows. At the same time, the situation differs dramatically from country to country owing to factors such as bear farming in China, a unique legal situation in Hong Kong, the tenacity of demand in South Korea and a moratorium on trade in Taiwan.

S. Chan/TRAFFIC

Bear specimen in traditional Chinese medicine shop, Daegu, South Korea, April 1995.

INTRODUCTION

Bear parts have been used in traditional Chinese medicine (TCM) for centuries, including the fat, brain, spinal cord, paws, hide, claws and meat. However, the bile stored in the gall bladders of bears is the only bear product commonly found in Chinese *materia medica* today. TCM doctors prescribe bear bile to treat illnesses ranging from liver cancer (Mills and Servheen, 1991) to haemorrhoids to conjunctivitis (Bensky and Gamble, 1993). It is important to note that a particular bile acid found in bear bile (ursodeoxycholic acid, or UDCA) has been both synthesized and medically proven to be effective in treating numerous human illnesses, including gallstones (Mills and Servheen, 1991), hepatitis and cirrhosis (Sano, 1995).

The demand for bear gall bladders and bile as medicine is particularly worrisome in relation to Asia's bear species, most of which are listed in CITES Appendix I. These include the Asiatic Black Bear *Ursus thibetanus*, the Brown Bear *Ursus arctos* populations of Bhutan, China and Mongolia, the Sun Bear *Helarctos malayanus* and the Sloth Bear *Melursus ursinus*. Moreover, there is increasing evidence that Asian demand for bile is having some degree of impact on non-Asian species, namely, the Appendix I-listed Spectacled Bear *Tremarctos ornatus*, Appendix II populations of the American Black Bear *Ursus americanus*, Polar Bear *Ursus maritimus* and Brown Bear *Ursus arctos* (Mills *et al.*, 1995).

A survey by TRAFFIC of the main East Asian markets for bear gall bladders and bile in 1995 (Mills, *et al.*, 1995) looked in particular at bear farming in China, Hong Kong's bear gall bladder registration system, Macau's unregulated trade, the possible impact of Japan's legal trade in bear gall bladders on its declining bear populations, South Korea's unusually high prices for bear gall bladders, and Taiwan's efforts to monitor its domestic market for bear gall bladders and bile. Based on the findings of that survey, the report offered recommendations for actions that were deemed necessary to better understand, monitor and control the trade in bear gall bladders and bile in order to ensure that it did not continue to deplete wild bear populations.

In mid-1996 TRAFFIC re-examined the trade. The findings, recorded below, focus on new developments in China, Hong Kong, South Korea and Taiwan. The status of the bear trade in Japan and Macau is not reported as the situations there are little changed. Recommendations based on the findings of this research were presented to the CITES Animals Committee in September 1996 and communicated to the relevant authorities of the countries and territories investigated in the hope that tighter control of this trade can be effected without delay.

METHODS

In China, survey methods consisted of opportunistic visits to certain international airports in China by staff of TRAFFIC East Asia and WWF Hong Kong. In Hong Kong, a TRAFFIC East Asia investigator surveyed nine department stores specializing in products from China. The South Korea section is based on a review of recent law enforcement operations involving South Korean nationals. Finally, news on the situation in Taiwan is based on interviews with government officials regarding the status of their new registration system for bear derivatives.

RESULTS

CHINA

Guo (1995) reported that approximately 10 000 bears were kept on farms in China for the purpose of bile extraction. Most of these were CITES Appendix-I Asiatic Black Bears and Brown Bears taken from the wild. Bile from their gall bladders is drained through surgically-implanted devices and sold legally on China's domestic market. In 1995, TRAFFIC found farm bile widely available in China. While gall bladders from wild bears were still offered for sale illegally, the abundance of farmed bear bile seemed to have kept black market prices for gall bladders from wild bears low relative to other East Asian markets. Nonetheless, the price was still high enough, compared to China's per capita GNP, to provide incentive for poaching. In addition, TRAFFIC found evidence that bile from China's farmed bears was leaving China illegally and appearing on retail markets in other Asian countries such as South Korea.

During 1996, TRAFFIC repeatedly documented commercially-packaged bear bile on sale in the departure areas of some of China's international airports. Since none of China's bear farms is registered with the CITES Secretariat and most farm bears are of Appendix I species, any bile from those farms is banned from international trade. The bile products seen in China's international airports were clearly marked as bear bile and offered openly for sale in airport shops frequented by departing passengers after they had exited passport control. Passengers purchasing bear bile to take with them on flights out of China would have been breaking Chinese law, contravening CITES and also, in all likelihood, violating the domestic laws of their country of destination.

TRAFFIC first brought the availability of bear bile at international airports in Beijing and Shanghai to the attention of China's CITES Management Authority and Customs and Excise officials in writing in February 1996. Customs and Excise responded in April (Y.L. Liu, Director of Foreign Affairs, Department of Customs and Excise, *in litt.*, 10 April 1996), reporting that the situation had been investigated and the trade stopped. In April 1996, staff of WWF Hong Kong and TRAFFIC East Asia again documented farmed bear bile for sale in shops near departure gates at Beijing's international airport. TRAFFIC reported this availability to China's Customs and Excise officials and China's CITES Management Authority in June and July 1996.

DISCUSSION

China has repeatedly lauded the efficacy of bear farming as a means of taking commercial pressure off China's wild bear populations. Officials of China's Management Authority within the Ministry of Forestry (MOF) and the State Administration for Traditional Chinese Medicine continue to highlight bear farming as a conservation success (J.H. Qing, pers. comm., 1996; H. Chen, pers. comm., 1996). MOF cites as proof the results of a survey of wild bears by more than 1000 people in 18 provinces over four years. These report that China has 61 700 bears remaining in the wild, including 46 500 Asiatic Black Bears, 14 800 Brown Bears and 400 Sun Bears (Z.Y. Fan, pers. comm., September 1996).

However, the conservation merit of bear farming remains undocumented by independent sources. The limited information available suggests that China's wild bear populations continue to be exploited to stock bear farms, where mortality is said to be high and reproduction low (S. Mainka, pers. comm., February 1997). There is also fear that widespread availability of farmed bear bile at low prices will stimulate demand not only for farmed bile but also for the gall bladders of wild bears (Servheen, 1995).

TRAFFIC's report to the CITES Animals Committee concluded that the availability of farmed bear bile outside China and at international airports in China demonstrated the lack of an effectively implemented regulatory system to ensure that farmed bile is not exported from China illegally. When TRAFFIC presented its findings to Chinese officials prior to the Animals Committee meeting in September 1996, MOF reported that the sale of bear bile at China's international airports had been stopped. TRAFFIC staff have not seen bear bile for sale at Beijing's international airport since that time, though international airports in Shanghai and other cities have not been checked.

Chinese authorities also told TRAFFIC that they have long-term plans to register their bear farms with the CITES Secretariat to enable bile from these farms to be traded internationally as derivatives of CITES Appendix-II specimens (J.H. Qing, pers. comm., September 1996). While there are many criteria that China needs to consider before an application for registration could be put forward, Chinese officials said they have already begun addressing the requirements in CITES Resolution Conf. 8.15, *Guidelines for a Procedure to Register and Monitor Operations Breeding Appendix-I Animal Species for Commercial Purposes*.

MOF told TRAFFIC that bile consumption in China had risen from 500 kg per year in 1990 to about 4000 kg in 1996. It said this was due to an increase in farmed

S. Chan/TRAFFIC

Bear bile advertisement, Yanji, China, March 1995.

bear bile to about 7000 kg per year, which has saturated the domestic market. At the same time, the number of bear farms had dropped from 601 in 1991 to 481 in 1996, while the number of bears in those farms had risen from 6632 in 1992 to 7642 at present. From 1991 to 1996, 1172 cubs were born on farms, among which 852 survived. MOF officials reiterated earlier claims that bear farming saved the lives of 10 000 wild bears annually which would otherwise be killed for their gall bladders to supply the demand for TCM (Z.Y. Fan, pers. comm., September 1996).

TRAFFIC

◀ Man holding tray of dried bile fresh from the oven at a bear farm in Sichuan province, China.

TRAFFIC East Asia has asked China for documentation of techniques used for censusing wild bear populations as well as documentation of reproduction, mortality rates and origin of stock in bear farms. At the time of publication, these requests remained unanswered.

RECOMMENDATIONS

- Bear farms in China should be examined by an impartial international inspection team to assess the conservation impacts of bear farming on wild bear populations. Of particular importance with regard to conservation would be documentation of the origin, reproduction and mortality rates of all farm bears; the regulatory system in place for all aspects of bear farming and trade in products from farmed bears, including trade controls to prohibit the laundering of bear galls and bile from wild bears; and, the effectiveness of the implementation of this regulatory system.

- China's CITES Management Authority should be asked to document enforcement of its domestic and international controls on trade in bear bile and its derivatives, including manufactured medicines.

HONG KONG

In 1995 TRAFFIC East Asia concluded that, while bear gall bladders were still offered for sale illegally in Hong Kong, their open availability had decreased significantly since 1991. This decrease was attributed to the large number of illegal bear gall bladders seized by the Hong Kong Government and by a Government registration system that licenses and tags only those bear gall bladders proven to be of legal origin.

In 1996, TRAFFIC East Asia documented the widespread availability in Hong Kong of manufactured medicines from China containing bear bile. In all likelihood this bile comes from Appendix I bears and most certainly leaves China illegally. While such trade is in violation of China's laws, Hong Kong's CITES implementing legislation does not regulate international or domestic trade in manufactured medicines containing parts of Appendix I or Appendix II bear species.

During July and August 1996, a TRAFFIC investigator surveyed the medicine sections of nine department stores in Hong Kong that specialize in selling products made in China. All stores stocked medicines manufactured in China that contained bear bile. In total, 13 brands of five different manufactured medicines containing bear bile and, in one case, bear's paw, were found. Two of these medicines named the bile and/or paws of the Asiatic Black Bear as an ingredient.

Discussion

All of the bear-bile medicines found by TRAFFIC in 1996 were manufactured in China and should have been subject to CITES trade controls. However, Hong Kong legislation does not regulate trade in manufactured medicines containing the parts of any CITES-listed species other than rhinos Rhinocerotidae and Tigers *Panthera tigris*. This is a major legal loophole, which essentially allows unrestricted import, export, re-export and domestic trade in Appendix I bear products as long as they are made into pills, ointments or other medicinal products.

Since the presentation of TRAFFIC East Asia's findings to the Animals Committee, a delegation from China's CITES Management Authority has visited the Hong Kong Management Authority to encourage better interdiction of bear bile being smuggled out of China into Hong Kong (S. Meng, pers. comm., November 1996). A further significant development was the announcement that the Hong Kong Government had begun the process of amending its legislation to include regulation of medicines containing derivatives of Appendix I bears (P.K. Chan, *in litt.*, 15 October 1996). This amendment was expected to take effect before July 1997. Just prior to going to press, the Hong Kong Management Authority announced that amendment of the law governing bear (and musk) medicines had been postponed.

Recommendation

- Hong Kong should, as a matter of urgency, and before 1 July 1997, amend its CITES implementing legislation to include regulation of medicines containing or claiming to contain derivatives of any Appendix I or Appendix II species.

SOUTH KOREA

TRAFFIC's 1995 findings, coupled with various law enforcement cases around the world involving South Koreans trading illegally in bear gall bladders, indicate that South Koreans remain dedicated consumers of bear gall bladders as medicine and as a health tonic. The survey showed that, while availability of bear gall bladders had decreased in South Korea since Mills and Servheen (1991), prices there - already the highest in the world in 1991 - had risen significantly. In addition, farmed bear bile from China was openly for sale in Seoul.

In July 1996, five South Koreans (one tour guide and four tourists) visiting Thailand were arrested and later convicted in Thailand of illegally killing six bears near the Myanmar border. The tour guide received a custodial sentence, and the tourists were fined from US$600-US$800 (see page 115).

The following month, a TRAFFIC investigator interviewed a Korean tour guide who was based in Bangkok in 1995 to assist South Korean tourists visiting Thailand. The guide alleged that approximately 10% of the 360 000 South Koreans visiting Thailand at that time consumed bear meat and/or bear parts during their visits. They reportedly paid from US$7500 to US$9000 for live bears, which were killed by drowning. The bears' gall bladders were removed for medicinal use, while the meat and paws were cooked and consumed immediately at banquets. According to the guide, illegal hunting trips were arranged for South Korean tourists once or twice each year near the border with Myanmar and China. He reported that there are eight Korean traditional medicine shops in Bangkok where bear gall bladders are ground into powder, mixed with other ingredients and packed in capsules for ease of smuggling. The accuracy of these claims is yet to be investigated in Thailand by TRAFFIC. At US$107 per gramme in Bangkok, bear bile is less than one-quarter the price in South Korea.

While South Korea's Management Authority has allowed the legal import of 66 kg of Appendix II bear gall bladders in 1996, South Korean Customs officials confiscated 122 kg of what were claimed to be bear gall bladders, from the luggage of travellers entering South Korea in 1996. In 1995, Korean Customs seized 55 kg of bear gall bladders and 82 kg in 1994.

Discussion

South Korea withdrew its reservation on Appendix-II bears on 25 September 1996, with effect from 6 October 1996 (Federal Department of Foreign Affairs, Switzerland, *in litt.*, 8 October 1996). In addition, the Association of Korean Oriental Medicine (AKOM) has gone on record as saying that the Korean Government must control the smuggling of bear gall bladders and stop their use for frivolous purposes. In fact, AKOM suggests that trade in bear gall bladders be restricted to legitimate medical use only (K.S. Kim, pers. comm., July 1996).

Around the same time, South Korea's Ministry of Environment hosted a meeting of 10 governmental agencies and seven relevant organizations to discuss the involvement of South Korean nationals in illegal international trade in bear gall bladders. Participants concluded that South Korea needs to strengthen its control of illegal trade in bear gall bladders and increase public awareness of the problem.

At TRAFFIC's suggestion, the Korean Government and AKOM sent a delegation to Hong Kong in September to learn more about Hong Kong's registration system for bear gall bladders. The group also visited one of Hong Kong's government forensic laboratories to gather information about testing the authenticity of bear bile. The CITES Management Authority in South Korea is currently considering adoption of a system similar to that in Hong Kong, which licenses and tags bear gall bladders imported with proper CITES permits.

RECOMMENDATIONS

The Government of South Korea should, as a matter of urgency:

- give stiff penalties to South Korean citizens caught smuggling bear gall bladders and bile, in addition to confiscation of their contraband.

- implement a bear gall bladder registration system that will ensure that any gall bladder sold within South Korea is derived from legal sources.

- train Government laboratories in the technology to test the authenticity of new stocks of gall bladders entering the South Korean market.

- adopt the use of x-ray machines and/or sniffer dogs to detect bear gall bladders being smuggled in the luggage of travellers entering South Korea.

- inform all travellers leaving South Korea of the domestic and international laws regulating the trade in bear bile and bear gall bladders, using pamphlets, airline ticket jackets and/or in-flight videos as a means of communication.

- consider using Government television broadcasts to dissuade illegal trafficking in bears, bear gall bladders and their derivatives.

- encourage similar public awareness activities in bear range states favoured by South Korean tourists.

TAIWAN

Mills *et al.* (1995) reported that prices for bear bile and gall bladders were significantly higher than previously reported by Mills and Servheen (1991), although availability had decreased. At the same time, the Taiwan Government pledged to work with the TCM community to phase out use of bear bile in Taiwan. TRAFFIC's 1995 report recommended that Taiwan enact a regulatory system that would prohibit trade in gall bladders from Appendix I species and control trade in gall bladders from all Appendix II species.

With the addition in December 1995 of the American Black Bear to Taiwan's *Wildlife Conservation Law Schedule of Protected Species (WCL)* (Anon., undated a.), Taiwan now lists all bear species either as "endangered" or "rare and valuable." These categories prohibit possession and all trade, unless under special circumstances, and apply to bear gall bladders, bear bile and manufactured medicines containing bear derivatives. At the same time, the *WCL* allows relevant authorities to approve domestic trade in certain wildlife products under an appropriate regulatory system. No such system is yet in place for the trade in bear gall bladders and bile.

Prior to passage of the *WCL* in 1989, bear gall bladders could be imported legally into Taiwan. Import of gall bladders from American Black Bears was legally possible until December 1995. However, up to 1995, Customs records listed imports of all animal gall bladders (including those of domestic animals) under a single code. Therefore, the number of bear gall bladder imports to Taiwan prior to 1995 cannot be accurately determined.

The Council of Agriculture (COA), as the principal authority responsible for wildlife conservation in Taiwan and implementation of the *WCL*, is in the process of drafting a domestic regulatory system for registration and eventual sale of existing bear gall bladder stocks. The system is being developed in consultation with the Department of Health (DOH) and the TCM community (see pages 117-120). However, several factors complicate implementation of such a regulatory system. Although field staff can be trained to identify wildlife derivatives such as ivory, bear gall bladders cannot be verified by sight alone. The logistics and expense of laboratory verification for all registered stocks of bear gall bladders in Taiwan need to be assessed.

Development of a registration system is further complicated by the experience of the TCM community's experience with Taiwan's rhino horn registration scheme. Initially rhino horn registration was to have been followed by a period during which owners could sell off registered stocks. However, international pressure resulted in a complete ban on the use or sale of rhino horn powder, and TCM practitioners worry that a similar situation will develop with bear gall bladders.

Until a regulatory system for the domestic trade in bear gall bladders is publicly announced by the COA, any sale of bear gall bladders, parts, or derivatives in Taiwan is in violation of the *WCL* and subject to punishment. At present, importation of bear derivatives is not allowed, although import applications could be approved after a regulatory system is in place. Meanwhile, between 1 January 1995 and 30 June 1996, 45 alleged bear gall bladders and 45 vials of bear bile were seized by customs officials in Taiwan (Anon., undated b; c).

The COA, DOH and the Government Information Office, with various local government agencies and conservation NGOs, have produced materials encouraging the public not to consume medicines containing bear products (Anon., undated b; c) These materials include:

- the airing of a short film entitled "Protect Bears, Please Use Substitute Medicines" on three television stations in January, March, and June 1996;

- production and distribution of posters, stickers, phone cards and advertisements aimed at raising awareness of bear conservation issues among the TCM community and the general public;

- distribution of 13 000 copies of a TRAFFIC publication entitled "Traditional Chinese Medicine and Wildlife Conservation" to TCM practitioners;

- workshops on wildlife conservation for TCM practitioners; and

- a workshop on ivory and bear gall bladder identification for Government officials.

Discussion

Unfortunately, regulation of the domestic sale of bear gall bladders is complicated by the fact that they undergo several physical transformations prior to consumption that make identification difficult. However, the development of a practical and effective domestic management system in Taiwan is critical if the addition of illegally imported gall bladders to existing stocks is to be avoided.

Existing stocks of gall bladders from domestic animals is another complicating factor. More effort needs to be made in encouraging TCM practitioners to state overtly when substitute gall bladders and bile are used, which may encourage consumers to accept substitutes as being efficacious. Explicit labelling of substitutes, called for by the *WCL*, would provide a more accurate picture of the real market for genuine bear gall bladders.

Communication between relevant government agencies and the TCM community is essential to creation of a workable management system for bear gall bladders. Regulation of wildlife products used in TCM involves changing centuries of medical practice. Such changes cannot be achieved through legislation alone, especially if primary user groups do not understand or accept the rationale behind such regulation.

Recommendations

- Labelling of all gall bladders and bile should be explicit, by species, as called for by law in Taiwan, while public acceptance of the efficacy of substitutes should be actively encouraged.

- All relevant administrative agencies and the TCM community in Taiwan should engage in regular dialogue in order to create a practical and effective system for regulating the use of bear gall bladder and bile.

General Conclusions

In general, the trade in bear gall bladders and bile in East Asia continues to raise numerous conservation concerns. In China, farming bears for their bile poses as-yet unanswered questions about its effect on the conservation of wild bears. Hong Kong seems to be on its way to solving a key legal loophole that allows international trade in Appendix-I bear derivatives, though new questions will arise in this regard once China regains sovereignty over Hong Kong in July 1997. The situation in South Korea suggests a large illegal trade in bear gall bladders and bile, despite the legal availability of gall bladders from Appendix-II bears. This phenomenon raises important economic and sociological questions about market forces at play in the bear gall bladder trade. Meanwhile, it is important that a regulatory system in Taiwan be developed in a timely fashion.

Overall Recommendations

All nations and territories that act as consumers or suppliers in the Asian bear trade should:

- devote more resources to interdicting bear gall bladders and bile crossing international borders illegally, especially in personal luggage, and to increasing efforts to investigate and stop illegal domestic trade;

- adopt systems of marking legal gall bladders and bile so that these items are readily recognizable to law enforcement officials;

- explore the feasibility of restricting trade in bear gall bladders and bile for legitimate and licensed medicinal use only; and

- launch communications campaigns to dissuade the public and TCM communities from trading illegally in bear gall bladders and bile.

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J.A. Mills, T.S. Kang, S. Lee, K.H., R. Parry-Jones and M.Phipps

The sources of information from which the cases reported below are summarized, are cited at the end of each country section.

EUROPE

BELGIUM

In January 1997, 160 kg of African Elephant *Loxodonta africana* (App. I) ivory were seized by the Customs' Anti-Drugs team at Brussels National Airport. The eight packages, which contained a total of 2900 semi-worked pieces, had arrived in three separate consignments from Libreville, Gabon, on route to Seoul, South Korea. Documents accompanying the packages listed the contents as "wood and salted fish".

During 1996, the same enforcement team intercepted some 28.5 kg of ivory arriving from Nigeria, bound for China. The items were sent as 10 separate parcels and included both raw ivory (tusks and blocks) and worked pieces, variously labelled as "toy", "gift" and "musical". All except one were from the same address in Lagos, Nigeria.

TRAFFIC Europe

FRANCE

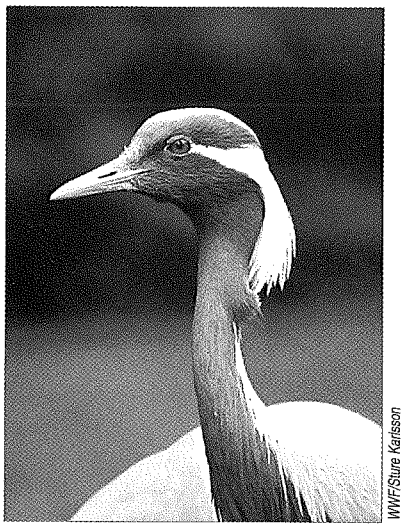
On 10 November 1996, Customs officers at Thionville seized over 30 birds during a search of two vehicles. A number of specimens in the consignment were of species listed in CITES Appendix I and Annex C1 of EU Regulation 3626/92; the requisite CITES permits and sanitary/EU transit certificates had not been issued. The birds included Lesser Rhea *Rhea pennata* (App. I), Demoiselle Crane *Grus virgo*, Baikal Teal *Anas formosa* (App. II), Coscoroba Swan *Coscoroba coscoroba*, Great Argus *Arguisianus argus* (App. II and Annex C1) and Sacred Ibis *Threskiornis aethiopicus* (App. III). Specimens protected under French law included Eider Duck *Somateria mollissima*, Common Merganser *Mergus merganser* and Pied Avocet *Recurvirostra avosetta*. The two French drivers of the vehicles had transported the birds from Belgium. The case is under investigation.

WWF France Press Release, 15 November 1996; TRAFFIC Europe

GERMANY

On 1 July 1996, the Customs Investigation Agency in Munich confiscated a large number of CITES-listed turtles and tortoises from two German citizens arriving from Yugoslavia. These included 88 Hermann's Tortoises *Testudo hermanni*, 122 Spur-thighed Tortoises *Testudo graeca* (both App. II), as well as 118 *Emys orbicularis* specimens (non-CITES, but protected by Germany's *Nature Conservation Act*); all were clearly wild-collected. The animals had been concealed in eight travelling bags. One of the suspects confessed to having smuggled protected turtles since 1991 using the same *modus operandi*. Based on the account of this individual, it is estimated that, since that time, at least 3000 turtles will have been smuggled into Germany by this suspect; these were all sold to private keepers. The case is under investigation.

On 31 July 1996, the Customs Investigation Agency in Munich confiscated a second large shipment of CITES-listed reptiles. These included 3 Radiated Tortoises *Geochelone radiata* (App. I), and the following Appendix II-listed species: 282 Horsfield's Tortoises *Testudo horsfieldii*, 30 Hermann's Tortoises *Testudo hermanni*, 22 Spur-thighed Tortoises *Testudo graeca*, 5 Indian Star Tortoises *Geochelone elegans*, 48 Burmese Pythons *Python molurus*, 20 Boa Constrictors *Boa constrictor* and 14 Rainbow Boas *Epicrates cenchria*. The animals had been smuggled into the country by four Slovakian citizens and were to be sold to reptile traders or private collectors. The tortoises, believed to have been wild-collected, and the other reptiles (provenance not confirmed) are being cared for by 'bona fide' zoological and private collections in Germany. The case is under investigation.



WWF/Sture Karlsson

Two Demoiselle Cranes *Grus virgo* (App. II) were illegally transported from Belgium to France, together with other protected birds.

T. Luffman, CITES Enforcement Team, Heathrow

Strawberry Poison Frog *Dendrobates pumilio* - one of over 300 specimens of poison-arrow frogs (App. II) seized in the UK following their arrival from Panama.

WWF/G. Schulz/WILDLIFE

Large numbers of Hermann's Tortoises *Testudo hermanni* (App. II) have been discovered in illegal trade in recent months.

In November 1996, in a joint Customs and TRAFFIC Network effort, two rhino horns were seized. One had been offered for sale in the *South China Morning Post* (Hong Kong) of 5 October, and the other offered to a TCM pharmacist in Germany on 18 October. The horns, one African and the other of Asian origin, weighed over a kilogramme. The suspects are under investigation.

CITES Management Authority, Germany; Customs Investigations Agency, Munich; TRAFFIC Europe

SWEDEN

On 18 October 1996, Customs officers at Arlanda Airport seized 1000 Horsfield's Tortoises *Testudo horsfieldii* (App. II) from a Syrian national travelling from Tadzjikistan; owing to their poor health, the reptiles were killed (see pages 82-83).

UK

On 4 January 1996, at Felixstowe, Customs officers seized a consignment of packages of traditional Chinese medicines arriving from China and claiming to contain cobra bile, musk *Moschus*, orchid, pangolin *Manis*, bear bile, monkey gall stone and Saiga Antelope *Saiga tatarica* (App. II). The case is pending.

On 15 July 1996, 373 poison-arrow frogs - Strawberry Poison Frog *Dendrobates pumilio* and Green and Black Poison Frogs *D. auratus* (App. II) - were found in plastic tubs in the suitcase of a British passenger arriving from Panama. A number of non-CITES-listed tree frogs, 5 scorpions *Centroides* spp., and 7 spiders were also discovered. Panama prohibits the export of its native wildlife. Most of the frogs, which had been collected in the wild, have been rehoused in zoological institutions in the UK and USA. The case is continuing following raids on several premises in southern England where poison-arrow frogs were also seized; an individual is assisting Customs with their enquiries.

On 3 September 1996, 127 rhino horns were seized in London by police officers of the Southeast Regional Crime Squad. This is the largest-ever seizure of rhino horn in the UK; there were four arrests (see page 82)

On 19 February 1997, police in London seized 138 shawls made of pure Tibetan Antelope wool *Pantholops hodgsoni* (App. I), a luxury fleece commonly known as 'shahtoosh'. This is the largest-known seizure of this commodity. The case is being investigated.

H.M. Customs & Excise, CITES Enforcement Team; Heathrow and London Central Customs Support Team; TRAFFIC International

AFRICA

MOZAMBIQUE

On 16 August 1996, the CITES Management Authority in Mozambique seized 3 Tigers *Panthera tigris*, 6 Lions *Panthera leo* (both App. I) and 1 African Python *Python sebae* (App. II) from a circus that has been under investigation by the CITES Secretariat and TRAFFIC since 1992. During its movement through a number of African countries, Akef Egyptian Circus has allegedly transported wildlife in contravention of CITES; 4 Chimpanzees *Pan troglodytes* (App. I) were previously seized from the circus by enforcement authorities in Uganda and 2 Chimpanzees and 1 African Grey Parrot *Psittacus erithacus* (App. II) in Zambia. The animals are to be temporarily resettled in South Africa because of current difficulties in housing them in Mozambique. No charges have been laid against the circus.

TRAFFIC East/Southern Africa

ASIA

EAST ASIA

HONG KONG

On 25 September 1996, following the largest seizure of ivory in the the territory for four years (292 kg), four men (a resident of Hong Kong and three Chinese seamen) pleaded guilty at Tsuan Wan Magistracy to charges of attempting to export ivory without a valid licence.

The case came to light on 10 September when Customs officials intercepted four men and seized 113 kg of raw ivory tusks and 9 kg of worked ivory chops which were being loaded onto a vessel at the Kwai Chung Container Terminal, bound for China. Semi-finished ivory products were found concealed in the engine room and further enquiries led authorities to stocks of raw ivory at a Hong Kong residence.

The Hong Kong resident and one of the seamen were sentenced to four months' imprisonment, the former to a further four weeks in gaol for possession of ivory without a licence. The other seamen were each sentenced to two months' imprisonment for charges of assisting in the export of concealed cargo.

Agriculture and Fisheries Department Press Release, 3 October 1996; South China Morning Post (Hong Kong), 13 September 1996; TRAFFIC East Asia

JAPAN

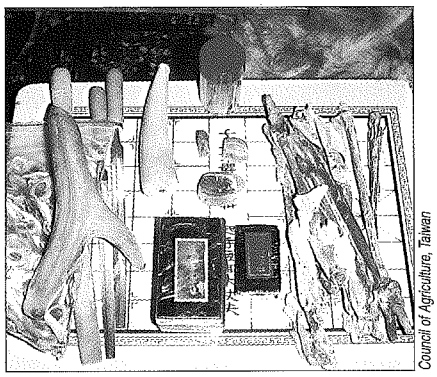
On 16 January 1997, at Kansai International Airport, two Japanese nationals arriving from Singapore were arrested following their attempts to smuggle 352 kg of African Elephant ivory into the country in the form of 13 800 hankos (signature seals). The case is under investigation.

TRAFFIC East Asia

TAIWAN

On 29 October 1996, police in Taipei county seized a number of rhino horns, rhino horn powder and other wildlife parts and ingredients at two locations in Shulin township. The seizures followed a month of undercover investigation by police and the Wildlife Protection Unit of the Council of Agriculture, after information revealed that a man and his wife were selling illegal traditional Chinese medicines at their residence and on the premises of a place of worship. The following were seized: 7 rhino horns; 4 pieces of rhino horn; 2 whole alleged rhino horns; 13 bottles and 2 packets alleged to contain rhino horn powder; 21 antelope horns; 10 deer penises; 1 antler; 1 alleged Tiger *Panthera tigris* skin; 1 packet of deer velvet; 3 pieces of glue made from ginseng, deer velvet and Tiger bone; an ivory pipe; and, 14 whole gall bladders, allegedly bear. Various grinding tools were also seized. Two people were arrested. The case is under investigation.

Council of Agriculture News Release, 29 October 1996; TRAFFIC East Asia



Council of Agriculture, Taiwan

Deer penises and antlers which formed part of a consignment of wildlife seized in Taiwan by police and the Council of Agriculture in October 1996.

INDIA

A summary follows of the seizures/poaching incidents in India since May to December 1996, following on from reports in 16(2):

25 May: 2 Tiger skins (Andhra Pradesh);
27 May: 1 Tiger skin and 20 Tiger nails (Madhya Pradesh);
May-June: at least 10 rhinos poached in Kaziranga National Park (Assam);
12 June: 1 Asiatic Lion *Panthera leo persica* (App. I) skin;
13 May: 1 dead elephant in Kankrajhore - tusks removed (West Bengal);
end June: 1 Tiger found poisoned in Sanjay National Park, (Madhya Pradesh);
mid-July: 1 Tiger skin, 4 Leopard skins, 270 kg ivory (Arunachal Pradesh).
19 August: 1 Leopard skin; 1 wild dog *Cuon alpinus* skin; 3 Chital *Axis axis* antlers. Three arrests in Ambedkar Nagar, Bihar.
end August: 2 Tigers; 2 elephant calves allegedly killed with poisoned arrows by tribal poachers, Palamau Tiger Reserve (Bihar).
9 September: 1 Leopard skin in Rishikesh, Uttar Pradesh. Two arrests.
end September: 1 Tiger skin seized by Uttar Pradesh Forest Department, Kalagarh, near Corbett Tiger Reserve.
17 September: 2 Leopard skins seized by Forest and Wildlife Department. One arrest in Delhi.
27 September: 1 Tiger found dead in Hemnagar, Sunderbans Tiger Reserve, West Bengal (unconfirmed poaching case).
26 October: 1 Leopard, 2 Leopard cubs found poisoned in Dangs District, Gujarat.
30 October: 1.1 kg ivory articles, Palika Bazaar, New Delhi, seized by Delhi Administration and Wildlife Preservation acting on information from TRAFFIC India.
1 November: 1 Leopard skin; 2 Jungle Cat *Felis chaus* skins (Delhi). One arrest by office of Deputy Director of Wildlife Preservation, Northern Region.
3 November: 1 Leopard skin (Indore, Madhya Pradesh). One arrest.
5 November: Fur coats: 2 Red Fox, 5 Jungle Cat and 2 Jackal from shop in Chanakyapuri, New Delhi. Seizure by Delhi Administration.
8 November: Deputy Conservator of Forests seized 10 shawls made of wool of Tibetan Antelope *Pantholops hodgsoni* (App. I) (shahtoosh). 1 person arrested at shop in New Delhi hotel, with assistance of Wildlife Protection Society of India.
12 November: 12 pure 'shahtoosh' wool shawls at Indira Ghandi International Airport. Bound for London, UK.
18 November: 5 pure 'shahtoosh' wool shawls/15 shawls of pashmina/'shahtoosh' mix from shop in Dilli Hat, New Delhi, following information provided by TRAFFIC India.
9 December: 108 articles from taxidermist in Chandigarh including rhino, 1 mounted Tiger cub, 1 piece of Tiger skin, 1 Jungle Cat trophy, 1 Jungle Cat skin, 1 Leopard Cat *Prionailurus bengalensis* (App. II) skin; 1 mounted Jaguar *Panthera onca* (App. I), 2 Leopard skins, Lion *Panthera leo persica*, Sambar *Cervus unicolor*, Chinkara *Gazella gazella*, Chital and Gharial *Gavialis gangeticus*.
12 December: 2 elephant tusks (21.5 kg total) by Jaipur flying squad (Rajasthan), assisted by TRAFFIC India and Wildlife Preservation officials.

In early July 1996, the following articles were seized from a group of Narikorava tribals of southern India: 150 heads/140 tails of jackal, skins of 3 Slender Lorises *Nycticebus tardigradus* (App. II), 7 Chital *Axis axis* skins, and an undisclosed number of skins of monitor lizards, hedgehogs and crocodiles. The tribals claimed that the items were to be smuggled to Malaysia for sale. Some members of this tribe - which is reported to be regularly involved in the trade of wildlife articles - were apprehended two years' ago while trying to sell Tiger parts in Singapore.

On 11 July 1996, the Director General of Border Roads seized 270 kg of ivory, skins of 1 Tiger *Panthera tigris* and 4 Leopards *Panthera pardus* (App. I) at Bomdila, Arunachal Pradesh. The contraband was seized from a Nepali who had concealed the articles in a truck belonging to the Central Public Works Department.

During 24 to 28 July 1996, an undercover operation near Corbett Tiger Reserve yielded the skin and skeleton of a Tiger *Panthera tigris* (App. I) and led to the arrest of two men wanted for involvement in the trade in Tigers.

Members of the Wildlife Protection Society of India (WPSI), acting on information provided by the authorities of Corbett Nature Reserve, posed as decoy buyers at a rest house adjacent to Project Tiger headquarters in Ramnagar, in an attempt to apprehend a well-known Tiger poacher and trader, and his associates, who were known to be operating in the area. After locating the traders and four days spent winning their confidence, WPSI was offered (but not shown) 3 Tiger skeletons and up to 7 Tiger skins. Refusing to give cash in advance, the investigators struck a deal and, on 28 July, a stock of Tiger bones and a large Tiger skin were brought to the rest house by three men. The skin, in poor condition and marked with a bullet hole, and the 12 kg of bones are believed to derive from one specimen that one of the men admitted to having killed near the park over a year earlier. Two men were arrested by Forestry authorities; the third escaped. The pair face up to seven years' imprisonment and a fine of Rs10 000 (US$278). >

> This is the fourth major offence detected within and around Corbett National Park during 1996 as part of Operation Monsoon, initiated in 1994 to maintain and strengthen security measures in the reserve during the monsoon season. This latest operation was carried out jointly by officials of Corbett Tiger Reserve and adjoining forestry divisions.

On 14 August 1996, the Forest Department of Tamil Nadu seized 1016 juvenile Indian Star Tortoises *Geochelone elegans* (App. II) from a vehicle at Vellai Gate, near Kancheepuram. Three people were arrested. A few weeks earlier, one of the three suspects had assisted the Regional Deputy Director, Wildlife Preservation in Madras, during a raid on the residences of two field collectors of Indian Star Tortoises. On that occasion, 222 specimens were seized and three people arrested. All the tortoises allegedly had been destined for export to Southeast Asia, Singapore in particular.

On 31 October 1996, as a result of an investigation by TRAFFIC India, Wildlife Preservation officials in New Delhi seized the mounted head of 1 Leopard *Panthera pardus* (App. I), and skins of 2 Jungle Cats *Felis chaus* (App. II) which had been painted to resemble a Leopard and a Marbled Cat *Pardofelis marmorata* (both App. I). Two Kashmiri youths were arrested.

Wildlife Protection Society of India; TRAFFIC India

SOUTHEAST ASIA

MALAYSIA

On 3 July 1996, a Singaporean was sentenced to one day's imprisonment and fined RM$5000 (US$2000) for removing a Scaly Clam *Tridacna squamosa* (App. II) from Pulau Redang Marine Park. He pleaded guilty to the charge, the first to be instituted by the Fisheries Department under wildlife laws for protected marine areas.

Soh Kay Lin was charged under section 43(1)b of the *Fisheries Act 1985 (Amendment) 1993* and was sentenced under section 25(b) of the same Act, which carries a two-year gaol sentence and a maximum fine of RM20 000.

New Straits Times (Malaysia), 3 July 1996

THAILAND

On 11 July 1996, at Ayuthaya province criminal court, five South Koreans and three Thai nationals were found guilty of killing six bears in violation of the *Wildlife Reservation* [sic.] *and Protection Act 1992*. The Thais were given two-year suspended gaol terms and each fined 20 000 Bhat (US$800 each). The South Koreans - three men and two women - received 18-month suspended gaol terms and were each fined 15 000 Bhat. Should they be prosecuted in Thailand at any time in the future, this gaol term will be added to their sentence.

The eight pleaded guilty to killing the bears to make soup for South Korean tourists. They said that they had purchased the animals from wildlife smugglers on the Thai-Myanmar border. Police arrested the group at a highway checkpoint, after finding the heads of the animals and a number of bear paws in their vehicle.

Between July and December 1996, police recovered 33 bears following a period during which owners were able to hand over any bears in their possession without being prosecuted: most specimens were less than a year old. A further 11 bears were confiscated during August to October at the Nakon Sawan Province. The Government is in the process of tagging captive bears with microchips; of 100 in captivity, 27 have been tagged.

WWF/Gerald Cubitt

Vanda hookeriana. Wild orchids on sale in Bangkok's weekend market included specimens of *Vanda*, *Dendrobium* and *Paphiopedilum* species.

In June 1996, Tahia Customs officials seized a large consignment of caged and boxed animals from a trawler at Samut Sakorn port, south of Bangkok. These included 70 young Saltwater Crocodiles *Crocodylus porosus* (App. II), at least 70 Sulphur-crested Cockatoos *Cacatua galerita* (App. II), and undisclosed numbers of Emus *Dromaius novaehollandiae*, wallabies and crowned pigeons; many specimens were already dead. The crocodiles had been destined for breeders in Thailand who were to raise the animals for their skins. The Thai captain of the ship, which had travelled from Indonesia, was arrested on charges of violating CITES. Surviving specimens are at the Forestry Department Breeding Station at Banglamung.

On 8 January 1997, officials of the Forest Protection Division and forest police arrested 20 suspects for their alleged part in the sale of wild orchids to shop owners in Bangkok's weekend market. The orchids, together with other plants, had been loaded onto six pick-up trucks and three six-wheel lorries; included among the orchid specimens were *Dendrobium* spp., *Vanda* spp., and *Paphiopedilum* spp. The suspects claimed the plants had come from Lao PDR, but officials believe them to have been gathered locally in national parks. If that is the case, this is the single, largest haul of wild plants in the country. The specimens are to be returned to their natural habitat.

Some of those arrested had been apprehended in November 1996 for illegal possession of wild plants following a similar raid on the market. On that occasion, only a few orchids were seized.

TRAFFIC Southeast Asia; International Primate Protection League; Bangkok Post (Thailand), 9 January 1997

OCEANIA

AUSTRALIA

On 1 March 1996, the excellent co-operation between enforcement authorities in Australia and New Zealand was demonstrated when a joint investigation by both countries culminated in the conviction of one Heidi Kiskinnin, the last of 11 individuals convicted for involvement in a bird smuggling operation. The case began in September 1993, when a light aircraft under surveillance by enforcement authorities in both countries, was flown from Redcliffe airfield in Queensland, Australia, to Waharoa airfield near Matamata in the North Island of New Zealand. Its illegal cargo of birds was unloaded and transported to a stud farm; the birds were later distributed to a number of individuals. A subsequent search of the property and van of one of these individuals yielded 21 Major Mitchell's Cockatoos *Cacatua leadbeateri* (App. II), and 10 Gang-gang Cockatoos *Callocephalon fimbriatum*; these specimens were subsequently repatriated to Australia.

A similar operation involving the same group was found to have taken place in May 1993 and involved the smuggling of over 100 native psittacines.

The following individuals have been sentenced in New Zealand for their part in the operation: David John Cutmore (to 13 months' imprisonment); Paul Anthony Lewin (six months'); John Banks Price (16 months'); Ivan Edward Baney (eight months' NZ$5000 (US$3400) fine); Wayne Gilbert Macdonald (six months'); Barry Martin Ryan (22 months'/forfeiture of van).

Sentenced in Australia on charges which included exporting scheduled species without a permit, in breach of Section 21 of the *Wildlife Protection (Regulation of Exports and Imports) Act 1982* were: David Cutmore (six months', plus New Zealand sentence); Dallas Albert (Jimmy) Hill (18 months'); Ronald Eric Prince (21 months'); Anne Brodie (two-year good behaviour bond); Heidi Kiskinnin (AU$3000 (US$2300) good behaviour bond).

In April 1996, Huy Chi Chou was convicted and fined AU$5000 (US$3800) for importing two Red-billed Leiothrixes *Leiothrix lutea* without a permit, contrary to Section 22 of the *Wildlife Protection Act.*

On 2 August 1996, at Brisbane District Court, Brian Walter Carter was convicted of illegally importing two Birds of Paradise Paradisaeidae from Papua New Guinea, contrary to Section 22 of the *Wildlife Protection Act.* He was fined AU$4000 (US$3000).

On 29 October 1996, at Brisbane District Court, Menno Okhuijsen, a Dutch national, was charged with exporting native species in contravention of Section 21 of the *Wildlife Protection (Regulation of Exports and Imports) Act 1982.* Okhuijsen had been apprehended on 14 August at Brisbane Airport as he attempted to export 53 parrot eggs. These were later identified as including Red-tailed Black-Cockatoos *Calyptorhynchus funereus* (App. II) and Australian King Parrots *Alisterus scapularis.* He received an 18-month gaol sentence.

TRAFFIC Oceania

AMERICAS

CANADA

On 28 June 1996, Canadian Customs inspectors in Vancouver, together with Canadian Wildlife Service authorities, seized almost 20 000 items of illegally imported Asian medicine products, containing or purporting to contain parts and derivatives of endangered wildlife. The shipment had been sent from Hong Kong and is believed to have been destined for Canada's growing ethnic Chinese communities in Vancouver and Toronto. Reportedly, more than 211 000 illicit items claiming to contain derivatives of endangered wildlife were seized at Canada's west coast port in 1995, compared to 1200 items seized in 1987.

On 20 November, British national Chow Shing Kwong pleaded guilty to charges of attempting to smuggle Indian Star Tortoises into Canada contrary to the *Wildlife and Trade Act.* He was fined CA$7500 (US$5500). Chow had been arrested the previous day following his arrival at Toronto Airport on a flight from southern India. Contained in egg cartons in his hand luggage were 232 Indian Star Tortoises. One specimen was dead, nine later succumbed to dehydration, and about half the remaining specimens were to spend several weeks recuperating before being returned to India; the others were in good health.

TRAFFIC USA

MEXICO

On 28 January 1997, at Mexico City Airport, enforcement officials seized a shipment of 843 orchids in the process of being exported to Australia by Mexico's biggest orchid exporter. Inspectors considered the specimens, which carried a CITES permit for artificially propagated orchids, to be wild-collected. Orchid experts from the Mexican National Autonomous University confirmed this to be the case. Forty species were identified and included specimens of *Laelia speciosa, Encyclia hanburii, E. mariae, Maxillaria densa, Oncidium cebolleta, Alamania punicea, Mormodes maculata* var. *unicolor, Epidendrum stanfordianum, Meiracylium trinasutum* and *Lemboglossum rossii.* At least 10 of the species contained in the shipment are considered to be threatened in Mexico. The exporter faces a penalty of up to six years in gaol.

PROFEPA Press Release, 2 February 1997; TRAFFIC International

USA

On 17 May 1996, in the Western District of Virginia, Rainer Schimpf of Rimbach, Germany, pleaded guilty to charges of falsely labelling wildlife for shipment to the USA. The charge arose out of an investigation conducted by Customs and the US Fish and Wildlife Service after a package containing 18 juvenile Monocellate Cobras *Naja naja kaouthia* (App. II) was intercepted by Customs officers at the United Parcel Service facility in Louisville, Kentucky. Documents accompanying the shipment indicated the package contained bracelets. Schimpf pleaded guilty to falsely labelling a wildlife shipment and, pursuant to a plea agreement, agreed to pay US$17 000. A percentage of this money will go towards national wildlife conservation projects. He was also ordered to remain outside the USA for a period of three years.

Scuba diver August Angelo Vichi faces a three-year prison sentence and up to US$50 000 in fines for his involvement in the largest-ever operation involving the illegal collection of abalone *Haliotis* in the state of California; since 1994, 10 others have been convicted in the case.

The operation was first uncovered in September 1994, when some 20 tonnes of abalone were found to have been collected along a five-mile stretch of the Sonoma County coast and sold to a commercial fisherman. Although up to four abalones may be collected per day in Sonoma County for sport, it is illegal to sell specimens. In this operation, as many as 82 were being gathered daily. Van Howard Johnson, the fisherman responsible for masterminding the operation, was sentenced in May 1996 to three years in prison, ordered to pay US$40 000 into the North Coast Abalone Restoration Fund, and fined US$10 000. Other members of the group have been sentenced to shorter gaol terms and/or probation and ordered to pay into the same fund amounts ranging from US$7000 to US$20 000. The group set up abalone processing centres in residences in Cazadero and Santa Rosa and sold the meat to Johnson, who in turn sold the meat to restaurants and east coast and Asian markets.

Biologists estimate that it will take 15 years to undo the damage to the North Coast abalone population.

On 18 November 1996, a federal court in Chicago, Illinois, sentenced Tony Silva to nearly seven years' imprisonment without parole for his role in leading an international parrot smuggling conspiracy (see page 83 and *TRAFFIC Bulletin* 15(2):95/16(1):32).

On 10 January 1997, in Orlando, Florida, a German national was sentenced to nearly four years' imprisonment for conspiring to smuggle rare and endangered snakes and tortoises into North America; an accomplice was placed on three years' probation (see page 83).

On 3 February 1997, in the Southern District of Florida, Tim Eaton of Tequesta, Florida, was sentenced to two years in gaol and ordered to pay a fine of US$25 000 following his conviction on charges of smuggling snakes. Between February and November 1993 Eaton conspired to smuggle 141 Red-tail Boa Constrictors *Boa constrictor ortonii,* 1 Rainbow]Boa *Epicrates cenchria* and 2 Anacondas *Eunectes murinus* (all App. II) from Peru, in violation of the US *Endangered Species Act,* and without CITES permits. Peru prohibits the export of these species. Eaton is the president of a Peruvian company which imports and distributes 'cat's claw', a herbal remedy (see page 87).

TRAFFIC USA; Front Page (USA), 10 January 1996; Empire News (USA), 10 August 1996; TRAFFIC USA; US Fish and Wildlife Service Press Release, 3 February 1997

The **Indian Star Tortoise** *Geochelone elegans,* with a maximum carapace length of about 35 cm, is a distinctive and popular chelonian in the pet trade. It is distributed over the dry western and southern parts of the Indian subcontinent and numbers are comparatively abundant. The species is listed in CITES Appendix II and, in India, it is listed in the *Wildlife Protection Act,* which bans all trade in the species. There is nevertheless large-scale collection of this reptile in the country, particularly in southern regions, and an estimated 10 000 to 15 000 enter trade each year: a large number have recently been smuggled from India to Southeast Asia, Europe and North America for the pet trade (see Canada and India above).

WWF/John Mitchell

As well as being kept as pets, the Indian Star Tortoise is valued for its meat and for use in medicinals; whole shells are sold as jewellery boxes.

TRAFFIC India; Turtle Trade in India; A Study of Tortoises and Freshwater Turtles. WWF-India/ TRAFFIC India

Strategies for Regulating Medicinal Use of Protected Animals in Taiwan

Chang Hong-Jen

INTRODUCTION

It is difficult for people born into western cultures to understand the importance of the use of rhino horn and Tiger bone in traditional Chinese medicines (TCM) and to appreciate what impact elimination of these substances from the Chinese pharmacopoeia may have. The use of animals in TCM is based on their therapeutic effects, with certain species believed to possess medicinal properties that cannot be substituted. In recent years, however, some species valued for such use have been brought to the brink of extinction as a result of high levels of exploitation for domestic and international consumption. As a consumer, Taiwan has been a focus of international criticism for its role in the trade of endangered species and their parts, in particular of rhino Rhinocerotidae horn and Tiger *Panthera tigris* bone. Efforts (including economic and political measures) by the Taiwanese authorities to fulfil obligations to maintain traditional medicine culture, while at the same time protecting the threatened species utilized for such purposes, remain a challenge. Many nature conservation organizations have put forward recommendations to reduce utilization of endangered or threatened species to a level that is compatible with their survival in the wild. Many TCM users hold the belief that human life is more valuable than that of an animal; further, the medicinal use of some of these species has been seen to have benefited many people throughout history and may be deeply rooted in people's lives. Consequently, conservation programmes cannot be effectively implemented until these needs are taken into account and incentives provided for co-operation of the public.

The Department of Health (DOH), the principal authority in Taiwan responsible for the management of traditional Chinese medicines, possesses close knowledge of the TCM community (the traders and pharmacists dispensing TCM products) and predicts that measures to regulate TCM trade which focus solely on law enforcement will fail. In March 1994, the department proposed a long-term comprehensive strategy that aims to reconcile the traditional medicine culture with the needs of wildlife conservation, the desired objective being to devise a system for sustained use of medicinal species. This paper presents the principles of this proposed strategy with regard to threatened or endangered animal species used in TCM in the hope that it will inform debate on this complex issue.

BACKGROUND

Since 1977, when all five species of rhinos were listed in CITES Appendix I, there has been a need to address the issue of rhino conservation on numerous occasions: CITES Resolution Conf. 6.10, adopted at the sixth meeting of the Conference of the Parties, recommended a complete prohibition on all sales and trade, both domestic and international, of rhino products. A number of further measures to curtail the market for rhino horn in consumer states which involved the introduction of stricter legislation and law enforcement were subsequently taken.

Taiwan is ineligible to become a Party to CITES in its own right owing to its non-recognition as a sovereign state by the United Nations. Taiwan began controlling the importation of Tiger bone in August 1985. In March 1986, Taiwanese pharmaceutical manufacturers were prohibited from applying to register new medicines containing Tiger bone (Mills and Jackson, 1994); these controls also applied to rhino horn. In June 1989, Taiwan enacted the *Wildlife Conservation Law (WCL)*, which incorporates some of the requirements of CITES. This law regulates both international and domestic trade in all species listed as protected, including their parts and products (including the majority of fauna species listed in Appendices I and II of CITES), with the effect that the importation and export of Tiger bone and rhino horn was prohibited, without permission of the COA. In November 1990, holders of privately-held rhino horn were required to register their stocks and, in 1993, holders of Tiger bone had three months in which to register their stocks (Mulliken and Haywood, 1994). However, in August 1994, the US Government imposed limited trade sanctions on Taiwan for failing to take stronger action to control illegal wildlife trade, in particular of products derived from Tigers and rhinos. Taiwan responded by amending the *WCL* in October of that year to cover a prohibition on the importation, export, sale or display of all listed species and their derivatives, in particular rhino horn, Tiger bone and related products. The legislation introduced in Taiwan in October 1994 does not take into account the needs of the TCM community for such items, however, nor does it provide incentives for public co-operation with such a ruling, considerations now recognized as crucial by many conservationists. While commending the measures taken by countries to control and reduce use of rhino horn, especially countries where use is part of a cultural tradition extending back many centuries, CITES Resolution Conf. 9.14 concludes that such efforts have not arrested the decline of rhino populations. The Resolution further expresses awareness that, given the social, economic and cultural realities in many producer and consumer states, emphasis solely on law enforcement has failed to remove the threat to rhinos.

In an effort better to address the cultural aspects of wildlife conservation legislation in Taiwan affecting TCM use, the DOH put forward its proposed strategy to minimize the impact of trade restrictions on TCM practice to the Council of Agriculture (COA) - the principal authority for wildlife conservation in Taiwan.

Proposed Strategy

The DOH classified medicinal animal parts sourced from protected species into five categories for the purposes of its proposed strategy to govern wildlife trade in the future. In order to determine which medicinal animal parts were derived from endangered or threatened wildlife, reference was first made to an update of the *Chinese Herbal Medicine Materia Medica*, produced during the Ming dynasty (1368-1644) as a revision to the *Divine Peasant's Herbal Compendium* of *circa* 100-200 AD, and regarded as the standard treatise upon which TCM is based (Chen, 1970). The *Chinese Herbal Medicine Materia Medica* lists 1892 medicinal products that are derived from plants and animals: just over 20% of these (n=391) are from animals. Following review of this document and of the CITES Appendices, the DOH identified ingredients from 13 species which are now considered to be endangered or threatened and/or protected in some countries and/or listed in CITES (Table 1).

Common name	Scientific name	Main part utilized
Rhinoceros	Rhinocerotidae spp.	horn
Tiger	*Panthera tigris*	bone
Bear	Ursidae spp.	gall bladder
Otter	Lutrinae spp.	liver
Elephant	Elephantidae spp.	skin
Pangolin	*Manis* spp.	scales
Musk deer	*Moschus* spp.	musk
Antelope	Bovidae spp.	horn
Hundred-pace Snake	*Deinagkistrodon acutus*	whole body
Many-banded Krait	*Bungarus multicinctus*	whole body
Turtle	Testudines spp.	shell
Tokay	*Gekko gecko*	whole body
Leopard	*Panthera pardus*	bone

Table 1. Protected medicinal taxa included in the *Chinese Herbal Medicine Materia Medica*. *Source: Anon., 1977*

The five categories designed to regulate TCM use of these 13 species and any other species and related products that may become associated with TCM use in the future are described below:

Category I: Category I would provide for the regulation of trade in CITES Appendix II-listed species and their derivatives, and allow for phasing out stocks of CITES Appendix I-listed animal parts, with concerted efforts made to encourage the use of substitutes. As a first step, a comprehensive survey of stocks of Appendix I-listed items would be made, followed by a period of time for these to be registered. Only registered stocks would then be permitted for use, exchange or sale, and only within a specified period (buffer time). Once the buffer time has elapsed, a total ban on the medicinal use of the animal parts concerned would be considered. The length of the buffer time would be determined by the results of the stock surveys.

WWF/Mandal Ranjit

Tokay *Gekko gecko*.

With regard to medicinal use of parts of CITES Appendix II-listed species, a specific mechanism to regulate such trade has been designed that complements the requirements of Article IV of CITES, and which is currently in practice: traders are required to present proof of legal acquisition and legal export of a specimen/product from the Management Authority of the country of origin or export, before applying for import or re-export permits from the Board of Foreign Trade (BOFT), which would require prior approval of the COA; to date, no permission for such permits has been given.

Category II: Category II would cover medicinal animal parts of species, which are part of a higher taxon, some of which are listed in CITES. The priority for species/products listed in this category, therefore, is to identify their origin/species so that CITES-listed species, which would be subject to the same regulation as those species listed in Category I, can be distinguished from non-CITES species, which would be subject to control under the *Foreign Trade Act*. Although this would appear to introduce a degree of redundancy into the system, it must be kept in mind that the system is designed for TCM practitioners who may not have zoological or taxonomic knowledge; such a listing would serve to remind the TCM community to pay attention to the species they are utilizing. The DOH has

Category	Description	Examples of Listing	*WCL*	CITES Listed
I	Animal parts from species which are part of a higher taxon and which are listed in CITES App. I or II	Rhino horn Tiger bone Otter liver	Yes	Yes
II	Animal parts from species which are part of a higher taxon, some of which are listed in CITES App. I or II	Turtle shell Antelope horn	Yes	Yes
III	Animal parts from species listed as endangered in the *WCL* but not listed in CITES	Hundred-pace Viper	Yes	No
IV	Animal parts from species listed as threatened in Taiwan but not listed in CITES	Banded Krait Tokay	Yes	No
V	Animal parts listed in CITES but not in *WCL*		No	Yes

Table 2. Proposed classifications of medicinal animal parts sourced from protected species. *Source: 1994b*

commissioned various research institutions to investigate the origin/species of animal parts found in trade (Chen *et al.*, in prep.). The results of these studies should be helpful in guiding the public, so that unintentional violation of current regulations can be avoided.

Category III/IV: Categories III and IV would cover medicinal animal parts of species which are endangered or threatened in Taiwan only, but which are not listed in the CITES Appendices. The two categories were established to comply with the revised *WCL*, which recognizes the responsibility of conserving wildlife, protecting species diversity and maintaining the balance of natural ecosystems. In this respect, trade in the species or product concerned is allowed provided that particular specimen did not originate in Taiwan.

Category V: Category V identifies parts of species listed in CITES but not in the *WCL*. As Taiwan is a non-Party to CITES, this Category is applied to cover the time-lag between the listing of species in the CITES Appendices and the *WCL* list being updated accordingly. During this period, the DOH would initiate preparatory actions such as conducting surveys of the current situation with regard to trade in these species in order that any necessary future administrative measures can be prepared. This category is designed to inform the public that trade in listed species/products will be controlled in the future; it will have no immediate effect on domestic trade in these taxa.

One of the roles of the DOH is to provide advice and recommendations to the COA on ways in which trade controls can be improved as well as on the need for amendments to the *WCL*. Prior to any amendments to the *WCL*, however, the DOH conducts surveys of the current status of the trade in the parts (and products) of species concerned, as a basis for deciding the necessary administrative measures.

In view of the need for a standard operating procedure for the enforcement of the strategies, in 1994 the DOH adopted a draft procedure designed to co-ordinate operations among governmental agencies (Anon., 1994a), and which clarifies the responsibility of each enforcement authority. For example, the BOFT is responsible for issuing import and export permits, the COA registers and marks specimens, and the DOH is responsible for education and communication with the TCM community (Anon., 1994b).

Testing TCM Community Co-operation

Revision of the *WCL* in October 1994 to effect a complete ban on species listed as protected in the *WCL*, and the limited trade sanctions imposed on Taiwan by the USA, aroused hostility in the TCM community towards the authorities of Taiwan and the West. To apprise the TCM community of the potential of the proposed strategies and of any possible difficulties in their application, three public awareness campaigns had been launched in April and May 1994, before the *WCL* was amended. Public reaction indicated wide acceptance of the proposed Categories, suggesting that the TCM community is willing to co-operate with the Government. However, during subsequent market surveys on the trade in bear gall bladders by the DOH in 1994, before the *WCL* was amended, the response rate to questionnaires used in the surveys was disappointingly low (Chang *et al.*, 1995). This reaction could be attributed to the high level of anxiety and distrust of the Government by the TCM community following earlier bans that did not allow holders of rhino horn and Tiger bone a period of time in which to phase out their stocks (Anon., 1992).

Recognizing that co-operation of the TCM community is a prerequisite to effective control of illegal trade, the DOH launched a second bear gall bladder market survey in September 1995. The TCM community was asked to provide detailed and reliable reports on their stocks of bear gall bladders. In the hope of restoring mutual understanding between the two sides, it was announced that the results of the survey would serve as a basis for determining the length of the buffer time required to phase out stocks. The findings of this survey are now under review (Chang *et al.*, in prep.).

Fundamental to the success of controlling illegal trade is the TCM community's willingness to co-operate with the Government. Therefore, the building of mutual understanding has been and will continue to be the first priority of the DOH. In this context, the DOH is endeavouring to negotiate, under the principles of the proposed strategies, a rule that will allow the use of bear bile to be phased out, trade and use of which is currently prohibited.

COMMENTARY

It must be understood that economic profit alone is not always the principal reason for the dedication of TCM practitioners to the medicinal use of animals and plants, including endangered species. Such use is part of a time-honoured cultural tradition which places the use of natural substances above synthetically manufactured chemicals. Discouraging the use of certain medicinal products is therefore not a simple matter of convincing people to substitute an "aspirin" for ingredients sourced from the wild.

The medical use of animal parts proven to have curative effects has been a long tradition within the Chinese culture. At any time the international community has worked together to ban the global use of certain substances, the medical use has often been preserved. For instance, despite a global ban on the use of halogenated hydrocarbons, the continued use of freon as a propellant for drugs in treating asthma (Anon., 1978a; 1978b) has been permitted, and the global ban on the use of BHC (benzene hexachloride) as an insecticide did not preclude its continued medical use in the treatment of lice infestation. The possibility of continued medical use of products from certain endangered species, under strict regulation, should similarly be explored.

CONCLUSION

It is clear that the development of appropriate strategies to regulate medicinal trade must be based not only on economic considerations, but also on social and cultural circumstances. Respect for TCM practice on the part of non-users is necessary if support of the TCM community for wildlife conservation work is to be secured. This is the key factor to the success of effective control of illegal trade in wildlife medicines, with the aim being to reduce the demand. Therefore, the DOH firmly believes in the need for a buffer time to phase out the stocks of products derived from CITES Appendix I species. Such action would help promote dialogue and mutual understanding with the TCM community, while communicating the concept of sustainability.

The need for urgent action to protect the remaining wild populations of rhino, Tiger and other endangered species in their range states cannot be ignored, but neither can the social, cultural and economic conditions in consumer states. Any conservation strategy that ignores these factors, no matter how well crafted, is doomed to failure. It is hoped that the strategies proposed by the DOH to improve regulation of medicinals containing endangered species in Taiwan will prompt comments and ideas on ways in which such a system can be improved and, it is hoped, assist in the conservation of these species.

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US Medicinal Plant Trade Studies

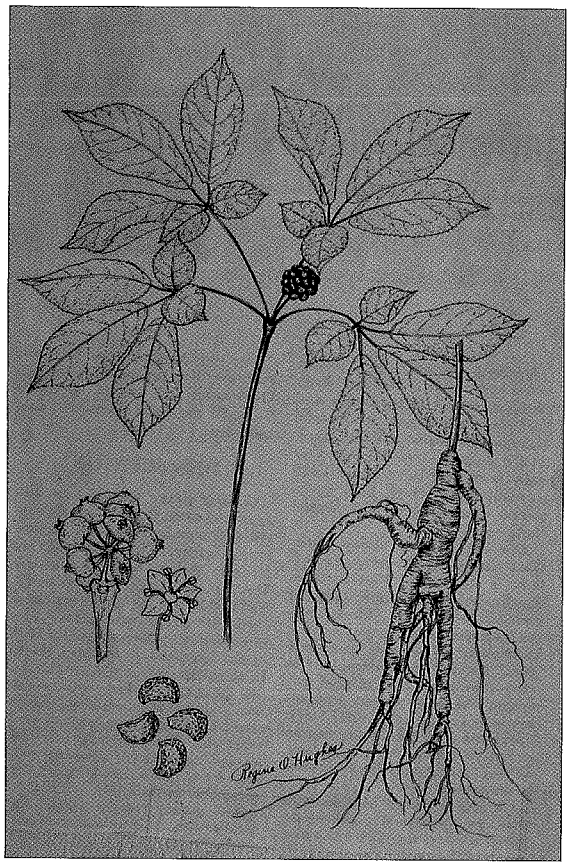
C. Robbins

INTRODUCTION

The rebirth of natural medicine use in the USA may be contributing to what appears to be escalating commercial demand for medicinal plants used in certain dietary or nutritional supplements[1], known as herbal medicines. Additionally, rising health care costs in the USA may be resulting in increasing reliance on alternative forms of self-medication, such as herbal remedies, in the treatment of chronic medical conditions. Herbal preparations, in the form of capsules, tablets, teas, tinctures, extracts, etc., may be purchased at pharmacies, supermarkets, natural food shops, convenience shops, traditional Chinese medicine outlets, as well as by mail order (Brevoort, 1995). The annual retail value of the US medicinal herbal industry is estimated to be US$1.6 billion (Brevoort, 1995). About 1400 species of medicinal plant are regularly traded in the USA (M. McGuffin, pers. comm., October 1996). About 75% of these plants are imported, while 25% are obtained domestically (Brevoort, 1995), the majority of native plant taxa reportedly harvested from the country's eastern deciduous forest biome (Foster, 1990; Israelsen, 1990). Many of the medicinal plants harvested in the USA are also exported. For example, nearly 2000 t of American Ginseng *Panax quinquefolius* were produced from wild and cultivated sources in 1995, 800 t of which were reportedly exported to Hong Kong, China, Canada, Taiwan and a handful of other Asian and European countries (Anon., 1995).

TRAFFIC USA is undertaking two studies to gain a better understanding of the burgeoning trade in native North American medicinal plants and the potential implications of such trade for the long-term conservation and management of wild plant populations in the USA and Canada. An insight into the reporting requirements for US trade in medicinals and recent trade data are presented below, followed by a brief introduction to TRAFFIC USA's two studies: on US trade in American Ginseng and a joint study to be undertaken with The Nature Conservancy (TNC).

[1] *Legally, herbal remedies in the USA are treated as dietary supplements, which is a special category of foods that includes vitamins, herbs or other botanicals, minerals, amino acids, or any other substance taken to supplement the diet.*



American Ginseng *Panax quinquefolius*, plant and root.

BACKGROUND

Methods of Reporting US Trade

The USA is undeniably one of the world's largest consumers of medicinal plants, importing an estimated 10 times the volume of herbs and spices that it exports (Schumann and Thomas, 1993). Generally, species-specific US trade data for medicinal plants are not readily obtainable from international trade statistics or any US Government agency. Records of the importation and export of medicinal plants are classified with those of other plants under the harmonized tariff heading "plants and parts of plant of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered" (Commodity Code No. 1211). Customs has prepared a schedule of about 130 plant taxa believed to represent examples of the types of vegetable products imported into the USA and reported under this tariff heading. Vegetable products may be in the form of whole plants, mosses or lichens, or of parts (such as wood, bark, roots, stems, leaves, flowers, petals, fruits and seeds). The author believes that most of the taxa listed in this schedule are used in, but not necessarily limited to aromatics, cuisine, and herbal remedies marketed in the USA.

The tariff subheading "[plant] substances having anesthetic, prophylactic or therapeutic properties and principally used as medicaments or as ingredients in medicaments" (Commodity Code Nos. 1211908090 and 1211909000) are used to further separate and classify, respectively, imports and exports of medicinal plants. Extracts of medicinal plants (excluding ginseng) are also imported under tariff heading "vegetable saps and extracts for anesthetic, prophylactic or therapeutic purposes (Commodity Code No. 13021940). Plants used in medicinal or herbal preparations are thought to represent a significant portion of these imports. Statistics for exports in this category do not exist owing to the absence of a commodity code for medicinal plant extracts. This method of reporting - the aggregation of medicinal plants by commodity - clearly poses a problem to conservationists seeking accurate and reliable trade data to document species and their volumes in commercial trade, and to determine which species might be at risk from such trade.

The US trade in medicinal plants of species listed in CITES is also difficult to assess because the reported trade is not necessarily a reflection of actual trade: many of these plants are not documented in the trade data, or their processed parts and derivatives may be exempt from CITES controls. The native North American plant taxa traded for medicinal purposes (and, for most of the following, for horticultural purposes) which are listed in CITES are: Pink Ladyslipper *Cypripedium calceolus pubescens*, Venus Flytrap *Dionaea muscipula*, American Ginseng *Panax quinquefolius*, Purple Pitcher Plant *Sarracenia purpurea*, Prickly Pear Cactus *Opuntia humifusa* and Peyote *Lophophora williamsii* (all Appendix II).

US Medicinals Trade in 1995

Imports: In 1995, the USA imported over 12 000 t of plants, or parts of plants (Commodity Code No. 1211908090) (valued at US$42 million), from 63 countries (Anon., 1995) (Table 3). China was the principal exporter, followed by Mexico, India, Germany, Jamaica, Bulgaria, among other countries. In addition, nearly 2000 t of medicinal plant extracts (excluding ginseng) (valued at US$18 million) were imported in that year (Commodity Code No. 13021940) (Anon., 1995).

Exports: In 1995, exports recorded in Commodity Code No. 1211909000 amounted to 8000 t (valued at US$29 million) to 54 countries (Anon., 1995) (Table 4). The top five destinations for these plants were Canada, Germany, Saudi Arabia, France, and Kuwait; the first three countries were also the primary destinations in 1994.

CITES trade data: Of the CITES-listed plants mentioned above, American Ginseng is the only species harvested exclusively for the medicinal trade. Between 85% and 90% of US exports of wild and cultivated American Ginseng are destined for Hong Kong. In 1995, the USA reported exporting 46 t and 640 t of wild and cultivated ginseng, respectively, to Hong Kong, which was down from 57 t and 996 t in 1994, respectively. Other countries and territories of importance to which the USA exported ginseng in 1994 and 1995 were Canada, China (all cultivated), Malaysia, Singapore, Taiwan, and a few European countries (Tables 1 and 2).

1994	1995	Destination
57 039	46 474	Hong Kong
3 466	4 141	Singapore
2 796	3 065	Taiwan
414	223	Canada
23	375	Malaysia
18	-	Unknown
63 756	54 278	Total

Table. 1. US exports (kg) of wild American Ginseng root.
- = no trade records *Source: US Fish and Wildlife Service*

1994	1995	Destination
996 601	640 366	Hong Kong
60 529	35 553	Taiwan
30 305	43 250	China
19 646	12 070	Canada
3 876	5 431	Malaysia
1 786	1 642	Singapore
50	1	Australia
32	-	Netherlands
23	-	France
-	97	Unknown
-	45	Japan
-	20	Czech Republic
-	20	Belgium
1 112 848	738 495	Total

Table 2. US exports (kg) of cultivated American Ginseng root.
- = no trade records *Source: US Fish and Wildlife Service*

Traffic USA Studies

TRAFFIC USA is reviewing the harvest, trade, conservation status, and management of wild American Ginseng in the USA and Canada in order to assess whether levels of exploitation are compatible with the long-term survival of the species. Despite regulatory controls, heavy exploitation of wild American Ginseng has prompted concern for the species' conservation and called into question the adequacy of State protection programmes. Phase I of this project is underway and involves a literature review, analysis of US and Canadian production and trade data, a summary and preliminary evaluation of federal requirements to which states must adhere for the export of ginseng, and a general review of state compliance with federal requirements. Together with The Nature Conservancy, TRAFFIC USA will also be documenting the number of other native North American medicinal plants that are sold on the US and Canadian herbal market, and assess ing their status in the wild.

Country	1994 (kg)	1994 (US$)	1995 (kg)	1995 (US$)	Country	1994 (kg)	1994 (US$)	1995 (kg)	1995 (US$)
Albania	36 179	109 023	111 915	289 898	Japan	36 853	348 378	59 111	1 968 123
Argentina	2 928	107 320	5 230	159 200	Korea (Rep. of)	31 734	502 115	10 985	95 749
Australia	444	6 907	1 418	61 570	Lebanon	250	1 305	-	-
Barbados	1 925	8 830	200	1 474	Macedonia	-	-	517	1631
Belgium	4 638	43 387	14 531	58 486	Mexico	517 991	968 333	1 416 056	1 648 420
Bolivia	272 000	323 100	366 158	443 450	Morocco	109 499	177 512	299 161	358 237
Brazil	126 567	744 187	127 977	551 746	Netherlands	102 920	464 512	21 628	135 052
Bulgaria	151 355	305 961	388 280	706 435	New Zealand	2 237	110 844	11 597	295 773
Cambodia	-	-	3 600	2 400	Nigeria	11 905	16 712	12 000	22 174
Cameroon	-	-	23	22 779	Norway	5 000	7 650	-	-
Canada	28 980	65 118	26 558	254 260	Pakistan	50 035	73 783	34 132	79 765
Chile	537 338	765 215	266 649	678 434	Paraguay	20 000	58 000	18 500	53 650
China	4 098 267	13 865 864	4 278 237	16 162 199	Peru	106 129	255 255	176 735	438 560
Colombia	1 417	7 468	33 072	83 657	Philippines	155 401	98 349	35 962	42 563
Costa Rica	48 280	276 577	23 693	154 335	Poland	43 482	129 078	45 668	157 561
Croatia	63 477	53 107	45 898	59 654	Portugal	41 779	60 122	12 760	22 612
Cyprus	2 800	3 722	-	-	Romania	400	24 956	-	-
Czech Rep.	1 831	11 525	3 643	24 059	Russia	997	6 798	-	-
Denmark	5	4 927	462	10 341	Singapore	-	-	161	1 875
Dom. Rep.	17 897	20 550	34 473	4 560	Slovakia	3 292	10 540	-	-
Ecuador	2 780	5 903	2 825	6 013	Slovenia	1 510	5 391	1 040	4 795
Egypt	204 594	398 688	191 054	490 514	Somalia	670	4 091	-	-
Ethiopia	313	1 328	-	-	South Africa	11 116	55 635	23 787	150 809
Fiji Is	3 274	24 672	6 999	80 405	Spain	356 131	902 391	299 501	1 553 860
France	66 321	442 969	127 270	777 851	Sudan	99 203	60 980	-	-
Germany	817 789	3 267 012	733 272	3 964 142	Sweden	851	214 447	760	66 158
Ghana	-	-	13 475	21 000	Switzerland	3 425	86 416	7 400	158 071
Greece	51 702	117 853	28 399	55 907	Taiwan	1 056	64 324	57 810	388 569
Guatemala	53 622	16 308	39 960	14 830	Thailand	364 516	653 007	288 890	543 605
Guyana	-	-	860	4 266	Trin. & Tobago	13 000	16 989	-	-
Haiti	-	-	4835	4 910	Turkey	259 042	324 795	388 039	497 524
Hong Kong	571 864	2 361 115	276 715	1 874 769	UK	13 008	113 477	20 505	182 864
Hungary	11 639	33 517	16 563	66 212	Vanuatu	-	-	1 981	43 582
India	1 334 476	1 323 279	1 333 486	1 722 673	Venezuela	25 953	244 169	19 662	160 182
Indonesia	401 693	750 881	184 167	372 259	Vietnam	9 180	25 634	-	-
Israel	16 428	90 156	31 214	176 061	Western Samoa	22 500	19 800	-	-
Italy	53 310	11 269 408	39 712	2 719 866	Yemen	-	-	1 008	4 976
Ivory Coast	1 950	2 046	-	-					
Jamaica	593 916	756 483	466 304	557 193	**Total**	**12 003 064**	**43 690 192**	**12 494 483**	**41 714 548**

Table 3. US imports of plants having "anesthetic, prophylactic or therapeutic properties and principally used as medicaments or as ingredients in medicaments (Commodity Code No: 1211908090), 1994-1995. - = no trade records
Source: US Department of Commerce; Bureau of the Census Customs Data for 1994

American Ginseng Study

Distribution and Use

American Ginseng is native to North America and occurs naturally from southern Ontario and southwestern Quebec, in Canada, to Oklahoma, Louisiana and northern Florida, in the USA. For nearly three centuries, the root of this herbaceous plant has been collected in the wild and exported mostly to East Asia, where it is processed for international and domestic use in traditional Chinese medicines (TCM). Adherents to TCM believe American Ginseng root aids and restores bodily functions and acts as a tonic for the lungs, stomach, spleen and heart; the "neck" of the plant is sometimes used to induce vomiting and the leaf is taken to alleviate alcohol intoxication (Gaski and Johnson, 1994).

Today, this plant supports a lucrative commercial trade in the USA and Canada. While wild ginseng roots represented only 10% of the volume of 1994 ginseng exports, they accounted for 50% of the declared value (Anon., 1994); wild-dug roots can fetch over US$1000 a kg wholesale in the USA compared to US$365 a kg for cultivated roots. The higher price of wild ginseng roots reflects the belief in TCM that wild roots are older and have improved form, taste, and colour and, therefore, are more efficacious than cultivated roots. In addition, there is clinical evidence that wild ginseng contains a higher concentration of active ingredients, dammarane saponins, which are commonly referred to as ginsenosides (Cottrell *et al.*, 1996). The ginsenoside content of American Ginseng, which ranges from 8%-14%, is generally 5%-8% higher in wild than in cultivated plants (R. Romang, pers. comm., 12 December 1996).

Country	1994 (Kg)	1994 (US$)	1995 (kg)	1995 (US$)	Country	1994 (Kg)	1994 (US$)	1995 (kg)	1995 (US$)
Argentina	2 613	7 200	556	3 210	Korea (Rep. of)	101 056	431 613	98 549	310 936
Aruba	-	-	1 960	5 400	Kuwait	280 849	582 999	335 889	724 832
Australia	93 109	472 464	156 817	686 240	Latvia	-	-	1 870	3 603
Austria	642	6 864	7 315	20 155	Macao	4 264	11 750	-	-
Bahamas	1 814	2 900	8 493	20 000	Malaysia	1 256	3 460	1 330	8 988
Bahrain	35 299	65 998	1 359	3 744	Mexico	434 797	1 026 634	237 139	61 4 677
Barbados	-	-	6 789	18 708	Netherlands	302 453	898 720	167 751	516 019
Belgium	44 499	110 467	8 207	35 998	New Zealand	3 296	8 748	3 259	14 537
Bermuda	-	-	3 024	10 272	Nigeria	4 641	12 763	-	-
Brazil	19 466	74 822	87 400	362 196	Norway	-	-	5 968	16 446
Bulgaria	2 660	7 329	-	-	Panama	1 960	8 100	285	2 635
Canada	2 317 566	8 199 490	2 450 855	9 730 187	Peru	1 769	4 875	929	2 560
Cayman	-	-	12 647	16 686	Philippines	1 496	8 316	-	-
Chile	-	-	6 403	17 641	Poland	51 604	144 825	2 120	9 327
China	1 067	2 939	1 449	6 425	Portugal	3 869	10 662	-	-
Colombia	-	-	6 887	18 975	Qatar	25 702	54 260	11 792	27 500
Costa Rica	680	3 330	4 939	21 905	Russia	216 040	1 160 961	20 620	65 357
Denmark	19 372	61 900	33 940	193 036	Salvador	-	-	526	3 132
Dominican Rep.	628	4 678	-	-	Saudi Arabia	840 823	1 287 818	707 277	1 073 224
Ecuador	-	-	586	8028	Singapore	9 081	25 023	16 296	47 807
Finland	679	4 605	-	-	Slovakia	550	8 409	-	-
France	181 946	822 590	503 019	4 266 406	South Africa	182	6 780	1 698	33 950
Germany	986 567	2 673 652	1 948 772	6 314 868	Spain	248 617	673 501	57 839	277 985
Guatemala	7 819	21 546	-	-	Sweden	2 496	22 791	3 343	11 359
Haiti	-	-	1 275	3 513	Switzerland	3 037	16 917	65 659	198 445
Honduras	1 981	5 460	109	3007	Taiwan	35 548	101 441	-	-
Hong Kong	37 871	221 004	13 114	42 939	Thailand	-	-	1 350	3 720
Hungary	-	-	5661	15 600	Trinidad & Tobago	909	2 900	1 750	11 560
India	289	7 871	5 099	14 050	UK	125 495	562 190	160 346	588 681
Indonesia	590	6 245	3 261	8 979	Utd Arab Em.	160 521	351 394	275 805	579 352
Israel	121 100	677 207	49 049	198 095	Venezuela	1 070	4 612	13 747	46 841
Italy	78 689	258 516	185 200	473 766					
Japan	197 079	721 511	328 024	1 019 823	**Total**	**7 017 406**	**21 873 050**	**8 035 346**	**28 733 325**

Table 4. US exports of plants having "anesthetic, prophylactic or therapeutic properties and principally used as medicaments or as ingredients in medicaments (Commodity Code No: 1211909000), 1994-1995. - = no trade records
Source: US Department of Commerce; Bureau of the Census Customs Data for 1994

Cultivation of Ginseng

As well as being collected from the wild, American Ginseng is a valuable agricultural crop in North America and one of the most widely cultivated medicinal plants in the USA and Canada. Approximately 20 US States were authorized by the US federal Government to export cultivated American Ginseng roots for the 1994-96 harvest seasons - four States more than a decade earlier. In 1995, the USA produced about 1800 t of cultivated ginseng roots: Wisconsin accounted for about 98% of production, while Tennessee, Maryland, Kentucky, Minnesota and a number of States producing ginseng on a smaller scale, made up the balance of cultivated ginseng production (Anon., 1995). Over 730 t of cultivated ginseng were reportedly exported from the USA to 12 countries in 1995, with Hong Kong accounting for 90% of the total exported (Anon., 1995) (Table 2).

Controls

American Ginseng is listed in CITES Appendix II, and export of both wild-collected and cultivated specimens which, typically, may consist of the whole root, and/or root chunks and slices, requires the approval of the US or Canadian Government. In Canada, the export of wild ginseng roots is prohibited.

The US Government approves the export of American Ginseng on a State-by-State basis. Approval or reapproval to export ginseng roots is not granted until the Government has determined that a State's ginseng management programme meets the minimum federal requirements, and that export will not be detrimental to the species' survival. For example, States are required to certify whether the plants and roots originated in or out of State, and that specimens have been lawfully harvested in the designated season (usually mid-August to

late-December). Although State officials must inspect and certify the origin of wild-dug ginseng roots prior to export, cultivated ginseng roots do not have to be inspected and may be certified by registered dealers approved by the State in which they reside. The reason for this exemption is that wild-dug ginseng roots can be physically distinguished from cultivated roots, and this fact, combined with the corresponding disparity in value, makes it fairly unlikely that ginseng roots harvested in the wild would be sold as cultivated ginseng. Another federal requirement is that States annually submit information on ginseng harvest and the biological status of wild populations to the US Fish and Wildlife Service.

Illegal Collection

Illegal collection of American Ginseng has been reported by some States in recent years. From 1989 to 1995, over 350 violations involving illicit ginseng harvest or commercialization were reported to the US Fish and Wildlife Service by 13 States.

Other Ginseng and Related Species

There are a number of other ginseng species and varieties used in TCM, but the species most coveted is Chinese Ginseng *Panax ginseng* of China and Korea; the wild-dug roots of plants from Manchuria are extremely rare and reportedly the best (Gaski and Johnson, 1994). Other herbs are sometimes called "ginseng"; *Eleutherococcus senticosus*, closely related to *Panax*, for example, is known as Siberian Ginseng, widely used in TCM for chronic pneumonia and tuberculosis, to inhibit malignant growths, and to reduce the debilitating effects of radiotherapy and chemotherapy in cancer patients (Gaski and Johnson, 1994).

Market Review of Native North American Medicinal Plants

The long-term study by TRAFFIC USA and TNC on native North American medicinal plants sold in the USA and Canada is divided into two phases: I) the compilation of baseline market information; and II) the preparation of a "priority list" of commercially important taxa that are at risk from overcollection, habitat loss, or both. During Phase I, TRAFFIC will review the US and Canadian herbal market to garner information on the variety of medicinal plants in North American commerce. From its computerized repository of biological and conservation data, TNC will extract information on the global conservation status, distribution and biology, including ecology, of those herbs identified in TRAFFIC's market review. The complementary data of TRAFFIC and TNC will enable identification of medicinal plants that are commercially important but which may be threatened. This information will be disseminated as a reference tool to conservation groups, field botanists, the herbal industry, the general public and other interested groups, as well being made available to those in a position to effect better controls.

WWF/Daniel Gagnon

American Ginseng *Panax quinquefolius* plants bearing fruit.

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