VOL. 15 NO. 3

TRAFFIC

BULLETIN

EAST ASIA'S WHALE MEAT TRADE

THE USE OF SEAHORSES IN MEDICINALS

RAINSTICKS FROM CHILE

AUGUST 1995

The Journal of the TRAFFIC Network disseminates information on the trade in wild animal and plant resources

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Dominica and Belarus Join CITES

Dominica acceded to CITES on 4 August, effective 2 November 1995, and Belarus acceded on 10 August, effective 8 November 1995, becoming respectively the 129th and 130th Parties to the Convention.

CITES Secretariat, 14 August 1995

Zimbabwe to Host Tenth CITES Meeting

The tenth meeting of the Conference of the Parties to CITES will be held in Victoria Falls, Zimbabwe, from 9 to 20 June 1997. The deadlines for submission to the CITES Secretariat of documents, draft resolutions and proposals for amendments of Appendices I and II at that meeting are as follows:

- proposals to amend Appendix I or II by Parties which do not intend to consult range States of the species in question (Resolution Conf. 8.21) should be submitted by 14 July 1996. The text of a proposed amendment to Appendix I or II shall be communicated by 10 January 1997. These proposals must be based on the criteria adopted in Resolution Conf. 9.24 (Fort Lauderdale, 1994).
- proposals pursuant to Resolution Conf. 3.15 on ranching should be received by 14 July 1996.
- the text of any draft resolution and any document submitted for consideration at the tenth meeting should be communicated by 10 January 1997.

CITES Secretariat, Notification to the Parties No. 867, 25 July 1995

Directorship Vacancy at TRAFFIC Oceania

Just before going to press, it was announced that the Director of TRAFFIC Oceania, Debra Callister, had decided to resign her position in order to pursue academic studies. Deb will be sorely missed by her colleagues, her contributions over the past seven and a half years having been invaluable to the development of the TRAFFIC Network.

The TRAFFIC programme is therefore seeking candidates for the position of Director of TRAFFIC Oceania, based in Sydney, Australia. For further details, contact the Executive Director, TRAFFIC International, 219c Huntingdon Road, Cambridge CB3 0DL, UK. Closing date for applications: 20 October 1995.

USA Lifts Wildlife Trade Embargo on Taiwan

Evidence of Taiwan's progress in combating illegal wildlife trade has prompted the US Government to lift trade sanctions they invoked against that country in August 1994 for the perceived failure of Taiwan to adequately control trade in endangered wildlife species and related products.

On 29 June 1995, the US Government reported that Taiwan had made significant strides in shutting down trade in rhino and Tiger parts and products and that it had enacted amendments to its *Wildlife Conservation Law,* promulgated in November 1994, to strengthen enforcement activities and enable law enforcement authorities to impose high penalties on those dealing illegally in endangered wildlife. Further, Taiwan had implemented an awareness campaign and established a new wildlife protection unit.

The US sanctions, which covered mainly fish and wildlife products, were enacted under the Pelly Amendment to the US *Fishermen's Protective Act* of 1967, which enables the USA to take action against a country that is engaged in trade that violates any international conservation programme concerned with endangered or threatened species.

Taiwan shall remain certified under the Pelly Amendment while its progress is monitored by the US Fish & Wildlife Service and the situation will be fully assessed and reported on in one year's time. In the meantime, the US Government will work closely with Taiwan in providing assistance with training in CITES implementation, law enforcement, and education programmes.

US Department of the Interior News Release, 30 June 1995

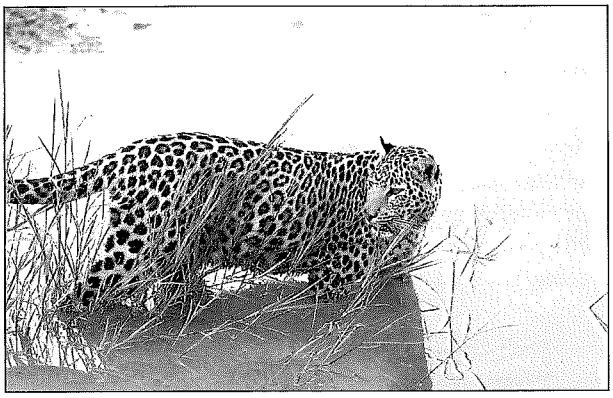
Hong Kong Imposes Strict Fines to Deter Illegal Wildlife Traders

In Hong Kong, a shop selling two bottles of medicines claiming to contain Tiger and rhino ingredients has been fined HK$40 000 (US$5000), the highest fine handed down since wildlife penalties under the *Animals and Plants (Protection of Endangered Species) Ordinance* were increased in January 1995 to a maximum of HK$5 million and two years' imprisonment.

In a separate case in the territory, a shop owner received a HK$20 000 fine for offering to sell three bottles of medicines claiming to contain Tiger bone.

The Agriculture and Fisheries Department hope the high fines will serve as a deterrent to the illegal trade and/or possession of endangered species.

Agriculture and Fisheries Department, Hong Kong



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Leopard *Panthera pardus.*

Concern over India's Failure to Convict Key Wildlife Smuggler

Uttar Pradesh Forest authorities in India have made a number of important arrests in recent months enabling them to close in on one of the most wanted wildlife traders in the country; Sansar Chand, alleged to be the linchpin in the largest-known smuggling network in north-east India, is currently in gaol, although recent efforts to bring him to court have failed to result in a conviction.

Chand, of Sadar Bazar, New Delhi, has at least 14 major wildlife cases filed against him although he has only been sent to gaol for a brief period in 1994, 20 years after he was first convicted (see also *TRAFFIC Bulletin*, 14(2):42). Numerous arrests of poachers and traders have clearly pointed to Chand's orchestration of many cases involving wildlife poaching in the region. In one of the court cases pending against him, Chand is accused of complicity in the seizure, in 1988, of over 30 000 wildlife skins in Delhi. In August 1993, 400 kg of bones of Tigers *Panthera tigris*, bears and Leopards *Panthera pardus*, eight Tiger skins, 165 Leopards and 92 small cats and other mammals seized from two people were traced to Chand.

Poachers Tip-Off

The recent arrests of poachers allegedly in the employ of Chand brought forestry authorities closer to his trail a few months ago. On 1 May, based on information provided by TRAFFIC International investigators, forestry officials in Hardwar arrested a poacher in possession of two fresh Leopard skins; he later admitted to having killed 25 Leopards in Rajaji National Park over the past five years; the poacher, currently in police custody, and two others (who had already left the area) claimed to be working for Chand. A fresh Leopard skin was later recovered by police from Chand's house but they failed to apprehend him.

Two more poachers were arrested in Saharanpur on 28 June 1995 and two Leopard skins that they had poached in Rajaji National Park (one at 3.2 m long and believed to be the largest Leopard skin ever recorded) and 7.2 kg of Leopard bones were seized from them. They, too, confessed to supplying skins and bones to Sansar Chand.

Chand Arrested

On 17 July 1995, police in Old Delhi finally located and arrested Chand, who was in possession of a Leopard skin. The Uttar Pradesh Forest authorities immediately acted to obtain an arrest warrant to present to the court hearing set for the following day. At Tis Hazari courts, on 18 July, Chand was represented by senior lawyers and the case handed over to Delhi administration wildlife authorities. When asked by the magistrate if Chand needed to be placed on remand for further action and whether a bail application should be opposed, a representative of the Delhi wildlife authorities stated that they had no further need to hold him. The magistrate refused to hand over the accused to the Uttar Pradesh Forest authorities, who had failed to obtain an arrest warrant at such short notice. Chand was released on bail of Rs.5000 (US$160) and told that he could be represented by his lawyer at the next court hearing, set for 21 July.

Efforts by the Chief Wildlife Warden of Delhi to cancel Chand's bail application were rejected by the magistrate, who also postponed the second court hearing until 27 July. At the same time, the Delhi High Court took unprecedented legal action by issuing notices to Chand and the State asking them to indicate why bail should not be cancelled. Although in the interim Chand gave two press interviews, the police were unable to trace him in order to serve the High Court notice.

On 26 July, Chand surrendered in the magistrate's court on the grounds that bail granted to him in a much earlier case was no longer valid, as the man who had stood surety for him had died. By surrendering, Chand managed to avoid being taken to Uttar Pradesh, where forestry authorities have issued two non-bailable arrest warrants for him in connection with the Hardwar and Saharanpur cases referred to above; the date for the Hardwar trial has been postponed until 31 August.

The Uttar Pradesh Forest authorities finally received permission to take Chand to Uttar Pradesh on 8 August; his lawyers managed to get this decision reversed on a technicality, however, and he was returned to gaol in Delhi the following day, where he remains.

In the latest development of this case, on 11 August the Uttar Pradesh Government are reported to have transferred all the key officers who had been handling the Sansar Chand investigation and court proceedings to other positions; they gave no reason for this action.

These transfers will have sent a signal to wildlife enforcement authorities throughout the country that pursuing wildlife criminals is not advisable; at the same time it gives wildlife criminals the message that they can operate with impunity.

The Sansar Chand case has received wide publicity in India and has prompted calls for an urgent review of India's judicial system regarding wildlife crimes. The Wildlife Protection Society of India has filed a petition in the Supreme Court asking them to review all wildlife cases in Delhi and neighbouring States - including those that involve Sansar Chand - and to settle them expeditiously.

TRAFFIC International; Wildlife Protection Society of India

Sponge Culture in Micronesia

Diving to gather wild sponges has been a long-standing tradition in the Federated States of Micronesia. According to a report by the Center for Tropical and Subtropical Aquaculture (CTSA), two private sponge farms first established on the island of Pohnpei in 1992 have begun harvesting and selling their crops, which are particularly prized for their use in bathing and general hygiene.

Experiments with sponge farming were initiated on the island in 1979 by a local resident, Dick Croft. By the late 1980s, Croft had developed a method that required minimal investments of labour and materials. The simple technique involved harvesting two-thirds of a large wild sponge which is divided into "cuttings"; these are hung from parallel horizontal lines strung between coral heads, a method which provoked initial scepticism among Pohnpeians, as sponges normally only grow attached to the reef. With basic maintenance, however, the sponge cuttings reach market size after about two years.

Funding from the CTSA and the National Marine Fisheries Service enabled Croft to establish a demonstration farm that is now used to train local residents in sponge farming techniques. Five farmers have set up their own farms, with between 2000 and 4000 sponge cuttings suspended from lines four to six metres deep. Only a mask, snorkel and fins are needed to work on the sites and the lines are brought to the surface with the aid of floats. CTSA funds have also paid for two islanders from Yap, in the Caroline Islands, to travel to Pohnpei to train in sponge culture techniques; Croft will assist in the establishment of their farms on Yap's outer island of Ulithe.

Despite these promising prospects, the journal reports that wild sponge populations in the region may not be large enough to sustain prolonged harvest for establishment of island-wide farms. According to ecologist Michelle Kelly-Borges, who has developed the experimental protocol for several growth rate studies being conducted on the island, the sponges have slow growth rates and low reproductive and replacement rates in the wild. To date, growth rates of the sponges to market size are not uniform, and the animals' overall shape and, thus, value also varies. Taxonomic research indicates that farmed Pohnpeian sponges may be a mixture of at least three wild forms, two of which produce commercially undesirable shapes. Fieldwork suggests that the location of the cutting in the parent sponge may determine the final shape of the farmed product.

Research will be fundamental to ensuring that sponge farming becomes a firmly established and economically viable industry which can both sustain repetitive harvesting techniques, and alleviate pressure on wild sources.

Center for Tropical and Subtropical Aquaculture, Regional Notes, 6(3), 1995.

Marine Environment Report

The State of the Marine Environment Report for Australia (SOMER), the first comprehensive description of Australia's marine environment, was released in February 1995. SOMER addresses the uses, values and management of Australia's marine environment, as well as those influences affecting it. The report consists of 83 technical papers by Australia's leading marine experts and will be an important source of information for the Government's conservation programmes. It will also be useful to non-governmental organizations such as TRAFFIC Oceania, in guiding them in their monitoring of Australia's large commercial fishing industry. According to SOMER, 10000 vessels of the Australian fishing fleet generate a substantial portion of income for the country's economy. A total of 200 species of fish, 60 species of crustaceans and 30 species of molluscs are caught in Australia's fisheries. The country's high-value export fisheries, such as Western Rock Lobster *Panulirus cygnus*, prawns *Penaeus* spp., and cultured pearls of the Gold-lipped Pearl Oyster *Pinctada maxima,* contribute to Australia's annual income from marine product exports, which, in 1992/93, was valued at A$1.1 billion (US$7m).

Although the Australian Fishing Zone is the third-largest in the world, covering an area of nearly nine million square kilometres, the annual fisheries catch of 200000 t a year ranks only 50th in the world. This low productivity is partly a result of naturally limited nutrient availability in Australian waters due to low run-off of nutrients from the land, absence of nutrient-rich deep waters and relatively small area of continental shelf.

Of the 100 fisheries described in SOMER, nine are overfished, 23 are fully or heavily fished, nine are underfished and 59 are of unknown status. Some of the most severely exploited species are Southern Bluefin Tuna *Thunnus maccoyii*, the Gemfish *Rexea solandri*, and the Gummy Shark *Mustelus antarcticus* and School Shark *Glaeorhinus galeus* of the Southern Shark Fishery. Southern Bluefin Tuna, fished by New Zealand, South Korea, Japan, Taiwan, Thailand, Indonesia and Australia, has suffered serious declines from overfishing, causing the adult population to drop below biologically safe levels. There is also increasing concern about the sustainability of high-volume catches on the long-lived, deep sea Orange Roughy *Hoplostethus atlanticus*.

Using information provided in the SOMER report, the Australian Government intends to implement a marine conservation plan that will guide the use and management of Australia's depleted marine resources. Whether such programmes will be able to ensure sustainable fishing practises in the face of significant commercial pressure from lucrative markets remains to be seen.

Details of the report's availability can be obtained from Gerry Morvelle, Coastal and Marine Branch, Department of Environment, Sport and Territories, GPO Box 787, Canberra 2601, Australia.

Tara Bythewood, TRAFFIC Oceania

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Plant medicinals for sale in Yunnan Province, China.

Medicinal Plant Specialist Group

Herbal medicines are used by a high proportion of rural and urban people in developing countries. There is also a renewed interest in industrialized countries in traditional medicinal plants as a source of chemical leads for new pharmaceuticals. Harvesting of medicinal plants, whether for export, sale or local use is highly species specific. Species loss through this process has global implications. Its most immediate and earliest effect is the loss of self-sufficiency of the rural people using these species.

In May 1994, the IUCN/SSC Plant Conservation Sub-Committee recommended that a Medicinal Plant Specialist Group (MPSG) be formed in response to rising concerns from many independent experts about plant conservation issues relating to medicinal plants. The group was set up with Tony Cunningham and Uwe Schippmann appointed as Co-Chairs. Since then, more than 30 members have been invited to join the group and membership is still growing.

The group is still in its formative stage. A draft concept and working programme was prepared in May 1994. A first meeting of the MPSG is planned for late 1995 or early 1996. Details about the group and developments in medicinal plant conservation will be made available in the MPSG Newsletter which will be published on a regular basis. The first issue appeared in April 1995.

The MPSG will be concentrating its efforts on vulnerable species for which demand exceeds supply from wild populations. The major task for the MPSG will be to make a general assessment of the situation, define objectives, set priorities of medicinal plant conservation, and draw up an Action Plan with both taxonomic and geographic focus. The Action Plan will review the conservation needs of taxa and recommend conservation action sufficient to ensure the long-term survival of these species. >

> Any material and news on the conservation of medicinal plants would be gratefully received.

Contact: Dr Uwe Schippmann, Co-Chair, IUCN/SSC Medicinal Plant Specialist Group, Bundesamt für Naturschutz, Konstantinstrasse 110, D-53179 Bonn, Germany.

Mahogany - Appendix III Listing

Costa Rica has requested the CITES Secretariat to include the Americas' population of the Big-leafed Mahogany *Swietenia macrophylla* in CITES Appendix III. The inclusion shall take effect on 16 November 1995 for all Parties except those entering a specific reservation, and covers saw-logs, sawn wood and veneers only.

The Government of Costa Rica announced its decision to make such a request at the ninth meeting of the Conference of the Parties, in November 1994; official communication of this request was made to the Secretariat on 16 December 1994, before Resolution Conf. 9.25 on *Inclusion of Species in Appendix III* was officially communicated to the Parties. Consequently the recommendations described in that Resolution of the procedure for Parties to follow have not been adopted for this proposal; namely, that the Party informs the range states, the known major importing countries, the Secretariat and the Animals or Plants Committee that it is considering the inclusion of the species in Appendix III and to seek their opinion on the potential effects of such inclusion; and, that the Party informs the Secretariat of its intention at least three months before a meeting of the Conference of the Parties.

The precise text to be included in Appendix III, in particular the parts and derivatives to be covered, was only finalized on 10 August 1995.

A proposal by the Netherlands to include *Swietenia* spp. in CITES Appendix II was narrowly defeated at the ninth meeting of the Conference of the Parties (see *TRAFFIC Bulletin*, 15(2):71).

CITES Secretariat, 18 August 1995

Observations on the Whale Meat Trade in East Asia

S. Chan, A. Ishihara, D.J. Lu, M. Phipps and J.A. Mills

All cetaceans covered by the International Whaling Commission moratorium on commercial whaling are listed in CITES Appendix I which bans international commercial trade. There is evidence, however, that trade in some of these species continues. In recent years there have been reports of a number of illegal shipments of whale meat bound for East Asia, in particular Japan, historically the main consumer of whale meat in the region. In early 1995, TRAFFIC East Asia conducted surveys of the whale meat trade in Japan, South Korea and Taiwan, with the aim of documenting the extent that whale meat is traded within these countries and, where possible, which whale species are used. Their findings indicate that Japan is still the major consumer of whale meat in East Asia and questions remain about the legality of whale meat trading in South Korea and Taiwan. There seems to be minimal demand for this product in China and Hong Kong, but consumption within China's Japanese community and the possible role of Hong Kong as an entrepôt in the illegal international trade in whale meat deserve further investigation. This report documents the findings of the surveys, which were undertaken with financial support from WWF International and WWF US.

Introduction

Large volumes of whale meat have been traded commercially in East Asia during the 1990s, primarily on route to or from Japan, South Korea or Taiwan. Reports of shipments, documented at the ninth meeting of the Conference of the Parties to CITES (Anon., 1994a), include the seizure in Russia, in April 1993, of 232 tonnes (t) of whale meat, apparently on route from Taiwan, via Vladivostok, to Japan; 3.5 t of whale meat seized in October that year in Norway, destined for South Korea; and, in May 1994, the detention of a South Korean freighter in Nagasaki, bound for Japan with 11 t of frozen whale meat on board. While there is anecdotal evidence of occasional whale meat trade in other parts of East Asia, no other country in that region has been documented as a major trader. In May 1988, Hong Kong officials seized 5.4 kg of frozen, salted whale meat. Subsequent analysis at the University of Cambridge Genetics Department showed that the meat was almost certainly Minke Whale *Balaenoptera acutorostrata* (Fincham and Amos, *in litt.*, 3 October 1988). Whale meat is rarely seen in Hong Kong, however. The territory may serve as an important entrepôt for transshipment of whale meat to other consumer countries, but this has not been documented.

The People's Republic of China does not exhibit much of a taste for whale meat. However, as yet unsubstantiated reports say that Japanese communities within China favour whale meat and find ways to obtain it (S. Leatherwood, pers. comm., 27 April 1995). All species of cetaceans are protected as "Category II" under China's 1988 *Law of Animal Protection*, which prohibits hunting and killing of whales, dolphins and porpoises without a permit. However, even prior to implementation of the law, China's officially recorded whale harvest was small, averaging fewer than 100 animals a year in the 1970s (Chen *et al.*, 1992).

Methods

The surveys summarized below were carried out in Japan, South Korea and Taiwan in March and April 1995. Wholesale and retail seafood markets as well as supermarkets of major department stores were visited: in Japan, whale meat markets in 13 cities were surveyed and the southern port city of Pusan was the focus of the investigation in South Korea; investigations in Taiwan were conducted in the ports of Donggang and Amping, and in supermarkets in Taipei.

When whale meat was found, price and quantity as well as the identity and the origin of the species were recorded whenever possible.

JAPAN

Japan's whaling industry

As a Party to CITES, Japan maintains reservations on the Baird's Beaked Whale *Berardius bairdii*, Sei Whale *Balaenoptera borealis*, Bryde's Whale *B. edeni*, Fin Whale *B. physalus*, Minke Whale and Sperm Whale *Physeter macrocephalus*, all listed in Appendix I. Such reservations in theory exempt Japan from the conditions of CITES Appendix I. However, Japan officially stopped importing whale meat in 1992.

© TRAFFIC

Diagram of whale meat parts displayed outside a whale meat shop, Sasebo, Kyushu, Japan.

Year	Bryde's Whale *Balaenoptera edeni* North Pacific	Minke Whale *Balaenoptera acutorostrata* Southern Hemisphere	Minke Whale *Balaenoptera acutorostrata* North Pacific	Sperm Whale *Physeter macrocephalus* North Pacific	Total
1980	307	3 120	379	1 192	4 998
1981	485	3 577	374	869	5 305
1982	482	3 224	324	439	4 469
1983	536	3 027	290	393	4 246
1984	481	1 941	410	400	3 232
1985	317	1 941	320	400	2 978
1986	317	1 941	311	200	2 769
1987	317	-	304	200	821
TOTAL	3 242	18 771	2 712	4 093	28 818

Table 1. Japan's commercial whaling catch (number of animals), 1980-1987. *Source: Japanese Government; IWC Annual Report*

Year	USSR	Norway	Iceland	Spain	Korea	Philippines	Peru	Brazil	Chile	Total
1980	11 884	506	4 712	3 940	1 411	0	1 543	819	563	25 378
1981	9 131	388	3 956	2 312	690	0	846	1 057	562	18 942
1982	10 003	484	4 019	2 041	901	0	1 449	662	0	19 612
1983	8 496	1 316	4 126	1 542	644	0	1 463	1 252	0	18 838
1984	8 493	358	3 871	1 153	936	46	692	1 190	0	16 738
1985	7 373	695	3 265	887	1 059	428	1 473	1 518	0	16 698
1986	459	133	1 365	290	0	279	0	1 076	0	3 603
1987	0	0	1 256	0	0	0	0	0	0	1 256
1988	0	0	972	0	0	0	0	0	0	972
1989	20	90	137	0	0	0	0	0	0	247
1990	0	0	851	0	0	0	0	0	0	851
1991	0	0	820	0	0	0	0	0	0	820
TOTAL	55 859	3 970	29 350	12 165	5 641	753	7 466	7 574	1 125	123 955

Table 2. Japan's imports of whale meat, in tonnes, 1980-1991. *Source: Japanese Customs Statistics*

There remain three sources of whale meat for domestic consumption in Japan: stocks from past whaling and imports; cetaceans excluded from the International Whaling Commission (IWC) moratorium on commercial whaling, established in 1986; and Minke Whale meat taken under Japan's programme of "scientific" research.

Stocks from whaling carried out during 1980 to 1987 totalled 28 818 whales; 123 955 t of whale meat was imported from 1980-1991 (Tables 1 and 2). Minke Whale meat from "scientific" whaling includes up to 300 specimens plus or minus 10% per year in the Antarctic Ocean (Table 3). The catch, fishing grounds and fishing season for Minke Whale are determined by the Japanese Government with advice of the IWC. In 1994-95, research whaling was undertaken both in the Antarctic Ocean, and the northwestern Pacific Ocean from which 21 Minke Whales were taken. Japanese cetacean catches excluded from the IWC moratorium are listed in Table 4.

The Government manages the catch of Baird's Beaked Whale and Short-finned Pilot Whale *Globicephala macrorhynchus* which are species excluded from IWC's competence and, thus, the moratorium. There are four whaling bases in Japan: Abashiri, Ayukawa, Taichi and Wadaura. The number of animals caught annually by each base is determined by the Japanese Government.

Even taking into account the three remaining sources of whale meat in Japan, some organizations have said that supply and demand still do not correspond and that, therefore, Japan must be laundering illegal whale meat supplies. Moreover, more than 500 t of smuggled whale meat were confiscated by Japanese authorities between 1988 and 1994 (Anon., undated, a.).

Year	Number of Animals
1987/1988	273
1988/1989	241
1989/1990	330
1990/1991	327
1991/1992	288
1992/1993	300
1993/1994	330
1994/1995	330
TOTAL	2 419

Table 3. Japan's Minke Whale catch in the Antarctic Ocean, 1987-1995.
Source: The Institution of Cetacean Research

THE IMPORTANCE OF WHALE MEAT TO JAPAN

Whale meat has long been a part of the Japanese diet. After World War II, the Japanese Government and the US occupation forces encouraged whaling to prevent famine. The industry consequently mushroomed: in 1947, whale meat made up 47% of the animal protein consumed by Japan's population. The Japanese say that the serving of whale meat in school lunches after the war and into the mid-1960s and 1970s contributed to the demand today for whale meat among those over the age of 40. Table 5 indicates the types of whale meat foods available in Japan. The meat is eaten raw, boiled, dried, grilled or marinated. Consumption of whale meat is also recommended for people suffering a type of dermatitis.

SURVEY FINDINGS

From 10 to 21 April 1995, a TRAFFIC researcher visited 13 cities: Fukuoka, Nagasaki, Niigata, Sasebo (in Kyushu); Hiroshima, Kobe, Kyoto, Nagoya, Osaka (in western Honshu); Chiba, Sendai, Yokohama (in northern Honshu); and Tokyo. A total of approximately 904 stores and/or stalls in fish markets were visited; 51 were selling whale meat (Table 6).

Regional variations in availability of whale meat were noted by the researcher. For example, greater quantities were found in Kyushu, and Miyagi (in Sendai and the nearby area). However, in Fukuoka, Nagasaki and Sasebo, there are more whale-meat speciality shops and whale meat is more commonly found on restaurant menus in those cities than in other parts of Japan. In Tokyo, whale meat was found primarily in department store supermarkets.

Thirteen types of whale meat products were recorded for sale in Japan (Table 7). Raw meat (sashimi) and "bacon" were the most common. Prices varied markedly in the different regions: from ¥250 (US$3) to ¥3 700 (US$46) per 100 grammes (g).

A total of 53 whale meat samples were purchased during the survey. These samples, preserved in a solution of 75% ethanol, remain in Japan awaiting DNA analysis.

Species		Directed or Incidental	1990	1991	1992	1993	Total
Baird's Beaked Whale	*Berardius bairdii*	Directed	54	54	54	54	216
Pygmy and Dwarf Sperm Whale	*Kogia breviceps/K. simus*	Directed	0	1	0	0	1
Killer Whale	*Orcinus orca*	Directed	3	0	0	0	3
False Killer Whale	*Pseudorcas crassidens*	Directed	126	54	97	20	297
		Incidental	30	0	0	1	31
Melon-headed Whale	*Peponocephala electra*	Directed	80	60	0	0	140
Short-finned Pilot Whale	*Globicephala macrorhynchus*	Directed	167	355	360	337	1 219
Pacific White-sided Dolphin	*Lagenorhynchus obliquidens*	Directed	39	1	136	0	176
		Incidental	4 447	3 802	0	2	8 251
Fraser's Dolphin	*Lagenodelphis hosei*	Directed	0	100	0	0	100
Bottlenose Dolphin	*Tursiops truncatus*	Directed	1 362	433	173	215	2 183
		Incidental	2	5	0	0	7
Pantropical Spotted Dolphin	*Stenella attenuata*	Directed	11	153	637	565	1 366
Striped Dolphin	*Stenella coeruleoalba*	Directed	749	1 017	1 122	544	3 432
		Incidental	0	5	0	0	5
Common Dolphin	*Delphinus delphis*	Directed	232	22	283	4	541
		Incidental	565	1 044	0	1	1 610
Northern Right Whale Dolphin	*Lissodelphis borealis*	Directed	11	1	20	0	32
		Incidental	7 909	9 320	1	0	17 230
Risso's Dolphin	*Grampus griseus*	Directed	115	393	121	505	1 134
		Incidental	1	17	0	0	18
Rough-toothed Dolphin	*Steno bredanensis*	Directed	161	4	0	0	165
Dall's Porpoise	*Phocoenoides dalli*	Directed	21 804	17 634	11 403	14 318	65 159
		Incidental	3 101	3 338	6	5	6 450
Finless Porpoise	*Neophocaena phocaenoides*	Incidental	9	4	1	7	21
Harbour Porpoise	*Phocoena phocoena*	Incidental	5	0	0	0	5
Cuvier's Beaked Whale	*Ziphius cavirostris*	Directed	0	1	0	0	1
Delphinid spp.	*Delphinidae*	Directed	29	93	0	8	130
		Incidental	2	6	57	0	65
Unidentified species		Incidental	639	667	0	3	1 309
TOTAL			41 653	38 584	14 471	16 589	111 297

Table 4. Japan's cetacean catches (by animal) excluded from the IWC moratorium, 1990-1993.
Source: IWC Reports of the Scientific Committee, 1993 and 1994

Name	Distribution	Whale type	Type of meat
Sashimi	All Japan	Baleen	Red meat
Tatsuta-age	All Japan	All species	Red meat
Bata-yaki	All Japan	Baleen, sperm	Red meat
Beikon	All Japan	Baleen Dolphins	"Unesu" (grooves of lower jaw and throat)
Sarashi-kujira	All Japan	All species	Salted "hire" (fins)
Kujira-jiru	Northern Honshu, Hokkaido	Baleen	Skin with fat
Enjo-makko	Northern Honshu, Kita-Kyushu	Sperm	Red meat
Koro	Western Honshu	Big whales	Skin with fat
Hyaku-hiro	Kita-Kyushu, Taiji, Ayukawa	All species	Small intestine
Tare	Southern Boso	Baird's Beaked	Red meat
Dried Iruka	Shizouka	Dolphins	Red meat
Hari Hari Nabe	Osaka	Baleen	Red meat
Gondo sashimi	Taiji	Short-finned Pilot	Red meat
Enba sashimi	Taiji	Baleen	Gum tissue
Makko sashimi	Ayukawa	Sperm	Red meat
Fukurowata	Taiji	All species	Lungs

Table 5. Names and types of whale meat foods in Japan.
Source: Freeman, 1989; TRAFFIC data

City	No. stores/stalls visited	No. *with* whale meat
Chiba	3	1
Fukuoka	23	7
Kobe	100	3
Kyoto	6	1
Hiroshima	35	2
Nagasaki	25	4
Nagoya	3	1
Niigata	20	2
Osaka	65+	12
Sendai	250	6
Sesebo	32	5
Tokyo	338+	7
Yokohama	4	0
TOTAL	904+	51

Table 6. Stores and fish stalls observed to be selling whale meat in Japan, March/April 1995.
Source: Surveys carried out by the authors

Type of whale meat	Price range Kyushu (per 100 g)	Price range W. Honshu (per 100 g)	Price range Tokyo/N. Honshu (per 100 g)
Sashimi (raw red meat)	700-1 500	800-2 600	750-1 380
Skin and fat (raw)	428-800	700-740	-
Salted meat	400-480	600	800-1 300
Salted skin and fat	-	-	980-1 100
Beikon (bacon)	2 400	2 200-3 500	900-4 000
Koro (skin with fat)	1 500-3 000	2 000-3 700	-
Sarashi (salted fins)	480	380	350-480
Tongue	-	2 584	-
Stomach	No price given	-	-
Steak (cooked)	380	-	-
Nanban (sauce)	-	-	250-280
In Mezo (paste)	-	-	1 056
Jerkey (dried meat)	716	-	716

Table 7. Types of whale meat recorded in Japan in March/April 1995, with retail price ranges. (Prices remain in Japanese yen because of the current instability of the US dollar.) *Source: Surveys carried out by the authors*

Source of whale meat

Most merchants claimed that the source of their product was Minke Whales taken legally via Japan's "scientific" whaling. However, one seafood shop openly touted salted Bryde's Whale skin and fat for sale at ¥1650 per 250g (compared to salted Minke Whale skin and fat at ¥2000 per 250g). A shop at the Tsukiji Wholesale Market in Tokyo claimed its meat was from Short-finned Pilot Whale.

Identification of the species of whale seen during this investigation cannot be determined without DNA analysis. Of the 53 samples of meat purchased by TRAFFIC, most had been frozen, as evidenced by the texture and the amount of blood and water released from the meat as it warmed after purchase. Japanese fisheries authorities claim that Japan holds frozen stocks of legally obtained meat from Minke Whale, Sei Whale, Fin Whale, Bryde's Whale, Sperm Whale, Pilot Whale, Baird's Beaked Whale, Dall's Porpoise *Phocoenoides dalli*, Striped Dolphin *Stenella coeruleoalba* and other dolphins (Anon., undated, a). Therefore, in addition to DNA analysis, duration of freezing would also have to be proven in order to establish whether meat from species covered by IWC's competence, other than Minke Whale, had been legally taken or not.

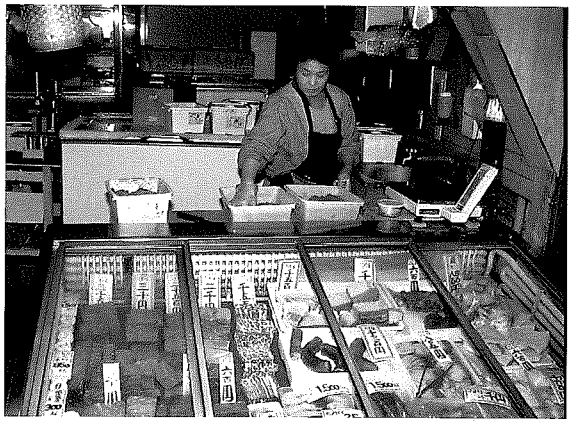
Conclusions regarding Japan's whale meat market

Any conclusions about Japan's current market for whale meat would be speculation at best without laboratory analysis to determine species of origin and length of cold storage. Japan apparently holds legal stocks of more than eight cetacean species, leaving a potential opportunity for laundering illegal stocks. Also of concern is the possibility for illegal whale meat to be passed off as meat from small cetaceans that were legally caught. Given these possible channels for illegal trade, it is extremely important that the Japanese authorities be given the legal powers to prove that stocks are legal. Japanese legislation does not cover the regulation of whale meat. In order to allow regular policing and documentation of outlets offering whale meat for sale, such legislation should be enacted.

SOUTH KOREA

South Korea's whaling industry

South Korea (Republic of Korea) banned the taking of all cetacean species, including whales, in 1986 and has not conducted "scientific" whaling since 1987. The Government has also issued guidelines on how to handle bycatch of whale species, stipulating that a live whale shall be returned to the sea while a dead whale shall be buried or the meat consumed by local people (Young Gyu Kim, *in litt.*, April 1995).



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Whale meat stall, Fukuoka, Kyushu, Japan.

© *TRAFFIC*

Restaurant advertising whale meat for sale, Fukuoka, Kyushu, Japan.

The importance of whale meat to South Korea

The importance of whale meat to South Korea was underscored in 1993 when the South Korean Government contemplated acceding to CITES with reservations on Minke and Bryde's whales. (Those proposed reservations were withdrawn prior to the final accession paper being filed.)

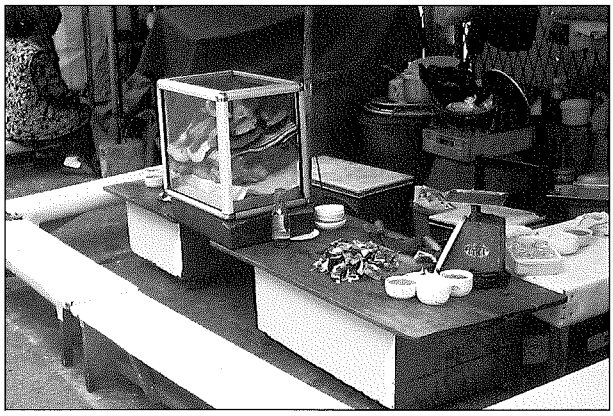
Although whale meat is not a popular food with South Koreans, for historical reasons there remain pockets of Japanese influence in places such as the South Korean sea port of Pusan. Pusan is also home to Chagalch'i Market, which is the country's largest, oldest and most famous seafood market.

During market analysis of rhino horn trade in South Korea in mid-1993, a TRAFFIC researcher documented the sale of meat from baleen whales in Chagalch'i Market, and the meat of "small" whales for sale in the Shin Sewha Department Store (Anon., 1994b). South Korea's continuing involvement in international trade in whale meat became evident when 3.5t of whale meat - later shown to come from Minke Whales - was shipped from Norway for South Korea in October 1993, and a South Korean freighter was found to be smuggling whale meat into Japan in 1994.

Survey findings

Pusan was visited on 6 to 8 April 1995. Outside the main building of Chagalch'i Market, stallkeepers were selling whale meat, as they had been in 1993. Every day, seven or eight stalls offered whale meat for sale. Samples were not purchased because of the difficulty in locating a secure location for storage pending arrangements for DNA analysis.

At least some of the meat at Chagalch'i Market was from baleen whales *Balaenoptera,* the meat pieces bearing grooves characteristic of the lower jaw and throat of species in the genus. A black fin approximately 15cm long was observed in a meat pile and appeared to be the dorsal fin of a porpoise. The price for what is called "high quality whale meat" was about 104 000 won (US$130) per kg. For dolphin or porpoise, which are termed "low quality whale meat", the price was about 20 000 won a kg. Much of the meat was sold steam-cooked by the dish. Approximately 100 g-150g of mixed whale meat sold for 5200 won per dish. Whale fat, believed by South Koreans to be cholesterol-free and good for the skin, was selling at higher prices than the meat. A smaller seafood market in Pusan, near Chinatown, did not have whale meat for sale, nor was there any in stock in the department stores, including one that had sold whale meat in 1993.



Baleen *Balaenoptera* whale meat for sale at Chagalch'i Market, Pusan, South Korea, April 1995.

Some of the whale meat sellers were aware that they were selling illegal goods, but were not nervous in discussing it. A police post is located about 100 metres from the market's whale meat concessions.

According to one merchant, some of the meat for sale was from "small whales", dolphins or porpoises. She claimed the cetaceans were "accidentally" caught in nets set for fish. Although consumption of bycatch whale meat is permitted, the authors understand that sale of the meat is illegal; this is currently being verified with the South Korean authorities.

Conclusions regarding South Korea's whale meat market

South Korea has evidently done little to stop domestic trade since sales are openly occurring in Pusan. Allowing whale bycatches to be "consumed by local people" may leave a potential loophole for laundering of illegally obtained whale meat. No information was available on whale meat stocks in South Korea.

In regard to the whale meat found aboard the South Korean freighter in 1994, the South Korean Government claims the ship owner was not the owner of the whale meat and therefore news reports were incorrect in regard to South Korea's role in the smuggling (Young Gyu Kim, *in litt.*, April 1995).

TAIWAN

Taiwan's whaling industry

All cetaceans are listed as protected species under Taiwan's *Wildlife Conservation Law* (WCL), making it illegal to hunt, kill, or trade in cetaceans and their products since 1990. Certain registered stocks of whale meat acquired prior to 1981 were exempted from this prohibition for both domestic consumption and export, but these stocks were exhausted by the end of 1993 (Anon., 1994c).

Small cetaceans were listed as protected species under the WCL in 1990, principally as a result of domestic and international concern over certain capture practices in the Penghu Islands (Pescadores). Local fishers were opposed to the listing and a series of confrontations occurred which received considerable media attention well before action by CITES and the US Government catapulted rhino horn and Tiger bone issues to the fore. Therefore, both fishers and fisheries authorities are extremely sensitive to cetacean issues, which hindered documentation of reliable information.

Between 1976 and 1978, the Taiwanese Government approved licences for four whaling boats. These boats, operating between April 1976 and February 1980, conducted 29 missions and caught 450 Bryde's Whales, weighing a total of about 5000t.

Following pressure placed on Taiwan by the USA to stop domestic whaling, Taiwan agreed to end its whaling activities with the provision that existing stocks could be sold. In July 1981, Taiwan's Ministry of Economic Affairs publicly announced an end to the issuance of whaling licences and prohibited all whaling. Two of the four licensed ships were purchased by the Government for scrap, while the other two subsequently sank.

THE IMPORTANCE OF WHALE MEAT TO TAIWAN

There does not appear to be a traditional market in Taiwan for human consumption of the meat of large cetaceans. The catch and consumption of small cetaceans appears to be small and limited to certain districts, including the Penghu Islands, as well as Chiayi and Yunlin counties on the western coast of the main island.

The only known directed small-cetacean catch has been in the Penghu Islands. For over 200 years, Penghu was the scene of a directed dolphin drive during the animals' seasonal migrations (Hong, 1993). These migrations do not pass through the islands on a predictable basis, and some years saw no harvest of dolphins. The fishers of Shakung, working with fishers from nearby Yuan Bei Island, were known for their ability to catch dolphins by herding them into a narrow channel leading into one of Shakung's harbours. Catch size varied from 50-60 Bottlenose Dolphins *Tursiops truncatus* and False Killer Whales *Pseudorca crassidens* captured in 1990, to approximately 30 dolphins in 1993 (Anon., 1993). The dolphins captured in the 1993 round-up, which was illegal under the WCL, were subsequently released to the wild.

According to anecdotal information, the meat of small cetaceans is traditionally consumed in Chiayi and Yunlin counties only. In these two counties, women sometimes consume cetacean meat to help rebuild their strength after giving birth. Demand for the meat of small cetaceans in these areas is believed to be met through incidental rather than directed catch. Demand on other parts of the island appears to be limited.

Year	Quantity (in tonnes)	Value (NT$)
1979	979	21 330
1980	1 048	30 626
1981	1 060	29 492
1982	922	20 632
1983	540	14 653
1984	588	14 835
1985	372	8 900
1986	201	3 084
1987	122	1 281
1988	103	13 063
TOTAL	5 935	146 136

Table 8. Fisheries Yearbook Statistics for "Dolphin" Catch in Taiwan, 1979-1988.
Source: Taiwan Fisheries Bureau, Department of Agriculture and Forestry, Provincial Government of Taiwan, May 1989.

Note: This 1989 report is the last to include a category for cetaceans since catch of cetaceans, including incidental, became illegal in 1990. Slightly more detailed information was available for the method of catch for the years 1987 and 1988:
- *according to the Fisheries Yearbook, 12 t were caught in gill nets (inshore fisheries) and 110 t by spear fishing (also inshore); no catch was listed under deep-sea or coastal fisheries.*
- *in 1988, 9 t were captured in gill nets; 94 through spear fishing. In both years, catch was reported in Taitung county only.*

Cases of illegal cetacean trade

Between 1 July 1990 and December 1993, 18 convictions were handed down for violations of the WCL involving cetaceans, and 54 individuals received sentences. Cases included seven of illegal hunting, three of illegal trade, two of illegal sale, three of intention to sell and three of illegal purchase. A further three incidents of illegal killing of dolphins, between 1 November 1994 and the end of January 1995, have been referred to the District Attorney's Office (Anon., 1995a). In March 1995, a newspaper report stated that police had arrested an individual transporting nine dead dolphins, for use as animal feed (Anon., 1995b).

SURVEY FINDINGS

Two TRAFFIC researchers visited wholesale fish markets in the ports of Amping and Donggang in southwestern Taiwan on 9 and 10 April 1995. During the past 10 years, these ports have been frequent sites of dolphin bycatch (Anon., undated, b.). Although Amping was once a major harbour for local fisheries, it has experienced a decline in activity. On the afternoon of the visit, both the volume and the number of species of fish brought in were limited. No cetaceans were seen.

Donggang is the principal local fisheries harbour used by both small and larger vessels. Researchers visited the area twice, surveying both the pre-dawn and afternoon markets. The pre-dawn market is comprised of mostly small fish species. Tuna, shark and other larger species are sold at the afternoon market. One specimen of dolphin (species unidentified) was seen.

According to anecdotal information, dolphin meat was seen occasionally in markets in Chiayi 10 to 15 years ago. However, since the introduction of the WCL in 1990, dolphin meat is rarely seen, although it is sometimes sold off the back of motorcycles. Since it is seldom available, the meat sells very quickly.

On 23 and 24 March 1995, spot surveys were conducted in seven large supermarkets in Taipei that stock a wide variety of imported Japanese products. No products containing whale meat were found.

Difficulties with cetacean research in Taiwan

In the past, Taiwan's cetaceans were not studied extensively and little information regarding their status is available. Current research on cetaceans is being conducted by way of harbour interviews, boat interviews and collection of stranding information, as well as analysis of vocalizations and toxicology. Preliminary results of the research conducted over the last few years is expected to be submitted to the Council of Agriculture (COA).

One academic stated that fear of legal repercussions for capturing dolphins and other small cetaceans, including incidental take, makes gathering of the most

basic data from fishers difficult (L. Chou, pers. comm., March 1995). Harbour police in Penghu were so concerned about negative press that the county had received for past dolphin drives that they would not even allow academic researchers with permits from the COA to obtain bycatch specimens from local fishers.

Export of Taiwan's registered stocks

In November 1987, the COA announced that legally registered whale meat products could be exported only with COA approval. However, by 1988 two of the three companies in Taiwan holding legally registered whale meat - Chiching and Tajen - had sold their remaining stocks. Only Ming Tai Marine Products Company still possessed whale meat stocks in 1988[2]. In March of that year, Ming Tai registered 450t of whale meat eligible for export. Ming Tai subsequently did not export any whale meat, though much of its stock was exported by second parties: from 1988 through 1993, seven companies made eight applications for the export of 321 t of Ming Tai whale meat. Of that amount, 292 t were exported in five shipments: 276 431 kg to Singapore, 9600 kg to Japan and 6300 kg to Indonesia. Another 25t were reported as discarded (see Disposal of damaged stock), leaving the whereabouts of more than 130t in question.

In response to concerns raised by the international community, the COA and the Ministry of Justice Investigation Bureau conducted an investigation of Ming Tai's disposal of its whale meat stocks (Table 9). According to the COA following the investigation, Ming Tai had not actually weighed its remaining stock before registering, but relied on estimates. As a result, the over-estimation of stock on hand occurred.

Ming Tai sold its refrigeration facility in Pingtung county to Yuan Yin Agriculture Company in March 1993, by which time all stock had been sold domestically or given away for animal feed. This marked the end of legal whale-meat stock for export in Taiwan.

Questions have been raised about the actual destinations of several of the legal shipments of Ming Tai stock, particularly the 1993 shipment of 220t by a Taiwanese company which exported more than 14 590 boxes of whale meat classified as fish bait to Singapore. There is speculation that this shipment may have ended up as the aforementioned illegal shipment bound for Japan which was intercepted in Vladivostok. Since Ming Tai had not arranged for the export of any whale meat after 1988, the company could not assist with confirmation of the ultimate destination of its legal whale-meat exports. However, according to the Taiwanese Government, the initial exports did not violate any laws as the export process from Taiwan was legal.

Date	Stock	Processed and Sold	Discarded	Balance
Pre-1988	2 500	1 800	380	320
1988-1993	320	295	25	0

Table 9. Summary of Ming Tai's disposal of whale meat stocks (tonnes).
Source: Council of Agriculture

Disposal of damaged stock

In regard to its total pre-1988 whale meat stock of 2500t, Ming Tai reported that 380t were discarded prior to 1988 and 25t were discarded between 1988 and 1993 owing to freezer burn. The damage was said to have resulted from the whale meat being stored in blocks individually boxed and wrapped in plastic, leaving the exterior blocks exposed to strong blasts of cold air in the refrigeration unit and therefore prone to freezer burn. Depending on the demand, the freezer-burned meat was said either to have been sold, or given away for use as animal feed.

Pirate whaling

Those interviewed in the Government, academic and private sectors had all heard rumours about pirate whaling ships with Taiwan connections operating out of the Philippines, although none had encountered reliable evidence supporting the claim.

Conclusions regarding Taiwan's whale meat market

A limited market for the meat of dolphins and other small cetaceans may still exist in Taiwan, but it is underground and opportunistic. Bycatch seems to lead to the market demand.

Taiwan's whaling appears to have stopped in 1981, and there is no evidence of meat from large cetaceans being sold in Taiwan. Questions that remain pertain to the possible use of registered stock to launder illegal stock, and the final destinations of legally exported stocks.

[2] *The COA report uses a different spelling than the company itself. Mingtai and Ming Tai refer to the same company. This report adopts the latter spelling.*

Laundering

Several conservation groups have suggested that Ming Tai could not have stored whale meat for more than a decade and so was surely laundering more recently acquired whale-meat stocks. A spokesperson for Ming Tai categorized this as conjecture and a moot point since Ming Tai has declared its whale meat stock exhausted and sold its whale-meat storage facility. In other words, there is no longer any means or location for laundering.

Summary

Japanese demand for whale meat offers high economic incentive for smuggling of whale meat into Japan, as well as opportunities by which to do so. Japan's frozen legal stocks of meat from numerous whale species make laundering feasible and distinguishing legal from illegal meat virtually impossible.

South Korea is not considered a large consumer of whale meat, although recent whale meat shipments apparently involving that country are documented above. The illegal domestic trade in whale meat in Pusan, where at least some of the meat observed for sale came from baleen whales *Balaenoptera*, continues in apparent contravention of South Korean law. Given that the meat is sold quite openly, the South Korean Government apparently has little interest in stopping it.

Although Taiwan's local market for cetacean meat is minimal, Taiwan has also been linked to numerous incidents of smuggling whale meat to Japan. Taiwan's legal stocks of whale meat have been exhausted and opportunities for laundering have been reduced, but questions remain about past possible use of registered legal stock to launder illegal stock and the final destinations of legally exported stock. It would seem that a limited market for the meat of dolphins and other small cetaceans may still exist, although it is underground and opportunistic.

Acknowledgements

The authors would like to acknowledge the assistance of Bobbie Jo Kelso of TRAFFIC International in the production of this report, and WWF International and WWF US for providing the funding for these surveys.

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EUROPE

BELGIUM

On 6 February 1995, Belgian Customs officials seized 31 shawls made from the wool (known as shahtoosh) of the Tibetan Antelope *Pantholops hodgsoni* (App.I), following receipt of information from Customs officers in France. No CITES documents had been issued for the shawls' export from Tibet. The articles had been obtained from a trader in Hong Kong by a Belgian citizen who then delivered 36 of them to a company in Paris. Five of these were sold and the remaining shawls were returned to the Belgian. The case is under investigation.

TRAFFIC Europe

FRANCE

In March 1995, head ornaments constructed of birds' feathers, American Black Bear *Ursus americanus* claws (App. II) and the tooth of a Yacare Caiman *Caiman crocodilus yacare* (App. II) were seized from a Parisian art gallery by officials of the Office National de la Chasse. Feathers so far identified are from Scarlet Macaw *Ara macao* (App.I), Blue-and-yellow Macaw *A. ararauna* (App. II), Green-winged Macaw *A. chloropterus* (App. II), Roseate Spoonbills *Ajaia ajaja* and possibly Hyacinth Macaw *Anodorhynchus hyacinthinus* (App.I). Ritual objects made with feathers and claws were also found. The articles had come from Brazil. No CITES documents had been issued. The case is under investigation.

Similar articles were being offered for sale at a separate art gallery in the capital in December 1994 (*TRAFFIC Bulletin*, 15(2):92).

TRAFFIC Europe-France

GERMANY

On 3 March 1995, Customs officers at Düsseldorf airport seized 2 Cuban Parrots *Amazona leucocephala* (App.I) that had been transported from Cuba by two German citizens. The birds had been bound with sticky tape and concealed in bags underneath clothing worn by the men. Also contained in the luggage was a treated sea turtle Cheloniidae head, several pieces of coral (unidentified) and 19 Queen Conch *Strombus gigas* (App. II) shells. Later inspection of the residences of the accused uncovered another sea turtle head and the skin of a Cuban Parrot.

The birds are now in good condition after treatment and are in the care of Wuppertal Zoo. The case is under investigation by the German CITES Management Authority.

On 7 June 1995, Customs officers in Freiburg seized 576 specimens of protected cacti from the private homes of two German cacti collectors. The plants, which included *Ariocarpus* spp. (App. I/II) and *Turbinicarpus* spp. (App. I/II), had been removed from the wild in Mexico. Maps of Mexico and detailed literature and photographs of the collection sites were also discovered. The accused had visited Mexico periodically since the early 1980s and reportedly had smuggled many plants into Germany. The confiscated plants are currently at Wilhelma Botanic and Zoological Garden in Stuttgart. The case is under investigation.

German CITES Management Authority

ITALY

Investigations over the past three years by officials of the Forest Corps (the CITES enforcement team), assisted by TRAFFIC Europe-Italy, have resulted in the seizure of some 2000 parrots and other CITES-listed animals.

The enquiry began in 1992 in Salerno, following the introduction of national legislation to implement CITES. Investigations spread to other areas of the country and a total of 19 persons were investigated; seven were tried and imprisoned. Appendix I-listed species seized throughout the period of investigation included 17 Hyacinth Macaws *Anodorhynchus hyacinthinus*, 6 Blue-throated Macaws *Ara glaucogularis*, 7 Blue-winged Macaws *A.maracana* , 30 Military Macaws *A. militaris*, 24 Red-fronted Macaws *A. rubrogenys*, 16 Red-tailed Parrots *Amazona brasiliensis*, 38 Cuban Parrots *A.leucocephala* , 3 Vinaceous Parrots *A.vinacea* , 9 Palm Cockatoos *Probosciger aterrimus* and undisclosed numbers of Scarlet Macaws *Ara macao*, Yellow-shouldered Parrots *Amazona barbadensis*, Red-spectacled Parrots *A.pretrei* , Tucuman Parrots *A.tucumana* , Golden Parakeets *Aratinga guarouba* and Salmon-crested Cockatoos *Cacatua moluccensis*.

Enquiries are continuing.

TRAFFIC Europe-Italy

UK

On 14 June 1995, a shipment of 69 pieces of live coral and 19 starfishes was seized by the Customs CITES Enforcement Team at Heathrow airport. The consignment, from Indonesia and not covered by CITES permits, was destined for the UK ornamental fish trade. As the importers were regular offenders, all species, including non-CITES species, were seized. The Appendix II-listed species included Organ-pipe Coral *Tubipora musica* (8 pieces), Table Coral *Acropora* spp. (7), Vase Coral *Euphyllia glabrescens* (4) and *E. simeriata* (6), Brain Root Coral *Lobophyllia corymbosa* (8), *Trachyphylia geoffroyi* (10), Hump Coral *Porites spirobranchus giga* (6), Spine Coral *Hydnophora* spp. (3), Pearl Coral *Plerogyra sinuosa* (4), Sunflower Coral *Goniopora lobata* (6) and Feather Coral *Polyphyllia talpina* (2). Unlisted species included 5 Blue Starfish *Linckia laevigata*, 14 Red Starfish *Fromia elegans*, Sponge Coral *Halichondria* spp. (2), Marble Mushroom Coral *Actinodischus* spp. (1), and *Sinularia* spp. (2).

The coral has been donated for conservation purposes to the coral section of Kew Gardens.

On 29 June 1995, Guizzeppe Angelo Tanti of Cardiff, Wales, was sentenced to four months' custodial imprisonment (no fines or costs) for illegally importing CITES-listed reptiles into the UK. Tanti, the owner of a pet shop in Cardiff which deals in exotic species, was caught in the green channel at Heathrow airport on July 20 1994 on arrival from Pakistan. Contained in his suitcases were 109 reptiles that he had purchased from a wildlife trading organization in that country. These included 17 Russell's Boa *Eryx conicus* and Blunt-tailed Boa *E. johni*, 32 Hardwick's Spiny-tailed Lizard *Uromastyx hardwickii* (all App.II) and 60 non-CITES-listed specimens. His premises were subseqently raided and further reptile specimens were seized from a garden shed (*TRAFFIC Bulletin*, 15(1):38). A TRAFFIC representative attended the trial to give evidence for the prosecution (HM Customs and Excise). This is one of the first cases where a smuggler caught bringing wildlife into the UK has been sent to prison.

On 15 July 1995, Customs officers at Heathrow airport seized 1 Scarlet Macaw *Ara macao* (App.I), and 1 Green-winged Macaw *Ara chloropterus*, 1 Eclectus Parrot *Eclectus roratus* and 2 Yellow-naped Parrots *Amazona auropalliata* (all App.II). The birds were being flown from the USA to Saudi Arabia via London by a Saudi Arabian national. The individual hand-carried the birds onto the plane and claimed they were personal pets. Under US Fish & Wildlife Service regulations, the quantity of birds was too great to qualify for a personal pet bird exemption. The method of carrying birds on board as hand luggage is also in contravention of IATA regulations. The individual supplied forged health certificates for the birds. The specimens are to be donated to a zoo for conservation purposes.

On 15 August 1995, in the largest seizure of its kind in the country, Customs officers seized approximately 500 dead specimens from the home of a taxidermist, Nicolaas Peter Peters, a Dutch national residing in Newtown, Powys, Wales; 300 of the specimens are native to the Philippines, and include the skull of a Philippine Eagle *Pithecophaga jefferyi* (App. I), the wild population of which is estimated at between 50 and 200. Other animals thus far identified include skins and skulls of Tiger, juvenile (black) Jaguar *Panthera onca*, Geoffroy's Cat *Oncifelis geoffroyi* and Cheetah *Acinonyx jubatus*; 2 frozen specimens and the skin and head of Red Panda *Ailurus fulgens*; a stuffed Chimpanzee *Pan troglodytes*, 1 head and 2 skins of Chimpanzees; 2 Golden Lion Tamarins *Leontopithecus rosalia;* 1 Cotton-headed Tamarin *Saguinus oedipus;* 1 Ruffed Lemur *Varecia variegata*; 5 Ring-tailed Lemurs *Lemur catta*; and the skin of 1 Komodo Dragon *Varanus komodoensis* (all the above are listed in App. I).

Peters has been charged with importing controlled specimens from the Philippines without the necessary documentation. Earlier this year, Peters was fined A$350 (US$260) in Australia after attempting to export 2 bird specimens (see *TRAFFIC Bulletin*, 15(2):94).

Enquiries are underway in the Netherlands and Belgium after similar findings following raids of other properties belonging to Peters. Details will be published in the next issue.

TRAFFIC International and the RSPB assisted H.M. Customs & Excise in the UK raid and subsequent investigation.

TRAFFIC International

AFRICA

MALAWI

On 27 April 1995, law enforcement officials in Lilongwe seized 22 elephant tusks being offered for sale by three nationals of Mozambique, Zambia and Malawi at a hotel in the city. The ivory weighed a total of 124.2kg. Arrests were made and the accused are awaiting trial.

TRAFFIC East/Southern Africa

SOUTH AFRICA

On 22 March 1995, members of the Endangered Species Protection Unit of the South African Police and Eastern Cape Nature Conservation law enforcement officers seized 153 cycads *Encephalartos altensteinii*, some of which were more than 500 years old. The plants ranged in sizes up to 4.7 metres tall. All have been replanted in a protected area because their original site offered no protection; only 20% are expected to survive replanting, however. The specimens had been harvested illegally by a syndicate operating in the Eastern Cape. This is the largest haul of cycads ever seized in South Africa.

One man appeared in court in connection with the theft and was granted bail of R8000 (US$2400) and the case postponed until 17 July. On that date the case was adjourned until 8 October pending further investigation.

On 8 May 1995, Endangered Species Protection Unit detectives seized the largest illegal haul of abalone ever found in South Africa and possibly the largest ivory caches ever uncovered by the Unit.

Two Zimbabweans and a South African were arrested after they had attempted to sell 30kg of semi-polished ivory to detectives during an undercover investigation. The men admitted to having stolen the ivory from a house in Midrand, after allegedly discovering it buried in the garden. At the house police discovered an abalone *Haliotis midae* processing factory; the shellfish were being dried in industrial ovens for export to China. Fresh abalone stored in freezers, and boxes of dried abalone found throughout the house, had allegedly been purchased from a contact on the west coast. Three Chinese citizens were arrested.

Police found dozens of bags of ivory offcuts buried in the garden. The ivory had been used to manufacture seals and other trinkets, allegedly for export to China. Further persons involved in the syndicate have been arrested, one of whom led police to a house in nearby Vorna Valley where another haul of about 300kg of abalone and 50kg of ivory was found. The owner of the house, a citizen of Hong Kong, was arrested and the goods seized. Enquiries are continuing and further arrests are expected.

TRAFFIC East/Southern Africa-South Africa; Sunday Times (South Africa), 26 March 1995; The Star (South Africa), 10 May 1995

ZAMBIA

On 7 February 1995, at Mumbwa Magistrates' Court, David Chibwantu, Chibwantu village headman, and Patrick Njeema of Musumba village, Mumbwa, were found guilty of the unlawful possession of 9 tusks of African Elephant *Loxodonta africana* (App. I) and 1 Leopard *Panthera pardus* (App.I) skin. The pair were arrested the previous day following an operation conducted jointly by the Species Protection Department and wildlife police officers. Both were sentenced to 5 years' imprisonment with hard labour. Three other suspects escaped and are being sought by police.

On 27 February 1995, Ronald Saul Munga of Chipata pleaded guilty to charges of the unlawful possession of a Leopard skin. He was sentenced to 5 years' imprisonment with hard labour.

On 2 March 1995, at Livingstone High Court, Basita Kafulo and Steven Petulo of Chawama Compound, Lusaka, were each sentenced to 6 years' imprisonment with hard labour for illegal possession of rhino horns without a licence. The pair were arrested in 1993.

The Species-Watch Newsletter, 2(2), January/February 1995

ASIA

HONG KONG (see also page 101)

On 22 June 1995, during a routine inspection by the Agriculture and Fisheries Department, 10 giant clams Tridacnidae (App.II) were seized from an aquarium shop in Mongkok district. The specimens were transferred to aquaria at the Swire Institute of Marine Science at Hong Kong University, but later perished.

TRAFFIC East Asia

INDIA

The Madhya Pradesh 'Tiger Cell', with whom TRAFFIC International investigators closely collaborate, has made a number of recent seizures in Madhya Pradesh, in central India. The cell is spearheaded by the State police force:

On 1/2 March 1995, a series of police raids near Kanha Tiger Reserve resulted in the seizure of 3 Tiger *Panthera tigris* (App.I) skins, 35 kg Tiger bones (including 5 skulls), 6 Leopard *Panthera pardus* (App. I) skins and 2 Leopard skeletons. The Tiger bones included skeletons of 1 adult and 2 cubs that had been hidden in a village hut. Police arrested 45 people in Balaghat and Seoni Districts in connection with the seizures.

In April/May 1995, 13 Leopard skins, 2 Tiger skins and 2 Tiger skeletons were seized in separate incidents in Mandla, Chhindwara and Bastar districts.

On 10 June 1995, a prominent wildlife trader was arrested in Mandla with 4 Leopard skins in his possession. He had earlier offered a police undercover agent 46 Tiger skins; it is not known whether these were viewed by the police officer.

© WWF/E. Hanumantha Rao

Chital *Axis axis*

Further seizures in India:

On 15 March 1995, acting on information provided by the Wildlife Protection Society of India, wildlife authorities raided the basement factory of a wildlife trader in Puri, Orissa, and seized the following skins, most of which had been tanned: 1 Tiger *Panthera tigris* cub (white); 2 Leopards *Panthera pardus* (App. I); 1 Lion *Panthera leo* (App.II) cub; 1 Jungle Cat *Felis chaus* (App.II), 2 Leopard Cats *Prionailurus bengalensis* (App. II); 5 Fishing Cats *P. viverrina* (App. II); 3 Chital *Axis axis*; 16 Rock Pythons *Python molurus molurus (App. I)* and Reticulated Pythons *P. reticulatus* (App. II); 160 Indian Monitors *Varanus bengalensis* (including a few Water Monitors *V. salvator*) (App. II); 8 Rat Snakes *Ptyas mucosus* (App.II). Also seized were 1 Chital skull with antlers and a few handbags made from unidentified snake and lizard skins.

Three people were arrested in connection with the case, while 3 others in the business are reported to have escaped. This is the first major seizure in the State of Orissa.

© WWF/Alain Compost

Leopard Cat *Prionailurus bengalensis* (App. II).

On 23 March 1995, police in New Delhi arrested a Kanjar tribal after he was found in possession of skins of 12 Leopard Cats (App. II), 13 Jungle Cats (App. II), 7 Golden Jackals *Canis aureus* (App. III/India), 38 Eurasian Otters *Lutra lutra* (App. I), 7 Smooth-coated Otters *Lutrogale perspicillata* (App. II), 4 Masked Palm Civets *Paguma larvata* (App. III/India); 2 Large Indian Civets *Viverra zibetha* (App. III/India), 1 Small Indian Civet *Viverricula indica* (App. III/India), and 1 Indian Grey Mongoose *Herpestes edwardsii* (App. III/India). TRAFFIC International investigators assisted with investigations. The case has been registered with the authorities.

In March/April 1995, 2 Tiger skins and 3 Leopard skins were seized in separate incidents near Palamau Tiger Reserve in the State of Bihar; a Tiger was found shot inside the reserve. Arrests were made.

On 25 April 1995, 3 raids on travelling zoos were carried out by the Uttar Pradesh State Forest Department acting on information provided by the Wildlife Protection Society of India; a TRAFFIC International investigator acted as a decoy customer. Among the animals seized in the first raid, in Meerut, were 1 Lion *Panthera leo* (App.II), 1 Asiatic Black Bear *Ursus thibetanus* (App.I), 4 Golden Jackals *Canis aureus* (App. III/India), 1 Hanuman Langur *Semnopithecus entellus* (App.I); 1 Rhesus Macaque *Macaca mulatta* (App. II), 1 Slow Loris *Nycticebus coucang* (App. II), 1 Indian Giant Squirrel *Ratufa indica* (App.II), and 3 Indian Pythons *Python molurus molurus* (App. I). All were for sale and a python was 'purchased' by the TRAFFIC investigator; the accused were also willing to sell the Lion and Asiatic Black Bear and offered to procure a Tiger and a Leopard cub. Three people were arrested.

A further 2 raids, in Deoband, near Saharanpur, and, again, in Meerut, yielded 1 Sloth Bear *Melursus ursinus* (App. I), 1 Golden Jackal, 1 Assam Macaque *Macaca assamensis* (App. II), a Tiger foetus, 1 Mugger Crocodile *Crocodylus palustris* (App. I) and 1 dead Gharial *Gavialis gangeticus* (App. I). No arrests were made but all specimens were confiscated and sent to Delhi Zoo or the National Museum of Natural History, in New Delhi.

On 30 April 1995, a gang of poachers was arrested by the Chittorgarh police in Rajasthan and the skin of a Leopard (App.I), killed that morning in Sitamata Sanctuary, was seized. Three local men were arrested and 1 rifle recovered. The poaching gang, who had been operating for five years, admitted that they had been supplying the skins and bones of Leopards regularly to two dealers in Madhya Pradesh. The police later raided a *godown* (store or small warehouse) in Madhya Pradesh owned by the dealers and recovered a further 5 Leopard skins and 1.2kg of bones. The dealers, who were also arrested, admitted supplying Leopard skins and bones to a middleman in Kanpur in Uttar Pradesh, who in turn sold these in Delhi.

On 12 June 1995, in Siliguri, West Bengal, police officers arrested five key operators of an international gang of poachers who had offered to sell 62 horns of Indian Rhinos *Rhinoceros unicornis* (App.I) to TRAFFIC International investigators. The horns were reportedly from animals killed in Assam; 2 were seized (one was of a juvenile or sub-adult), and together weighed a total of 680g.

With the arrest of the group leader, who is believed to be a Taiwanese national, international smuggling routes between India, Nepal, Bhutan and East Asia have been uncovered. The group leader, who is known to have connections in Phuntsholing, in Bhutan, claims to have supplied the 22 rhino horns found in the luggage of Princess Dekiy Choden Wangchuk, an offence that led to her prosecution and subsequent imprisonment in Taiwan (see *TRAFFIC Bulletin*, 14(3):116). The arrest of another person links him to the seizure in December 1994 of 89 Leopard skins and 1 Tiger skin on route to Kathmandu, Nepal. These two and three others who were also arrested, were remanded in police custody; four of the rhino horn traders have since been released on bail. The gang is reported to have been involved also in illegal trade of bear gall bladders and musk deer glands.

In May/June 1995, arrests of poachers of Leopards in Rajaji National Park, Uttar Pradesh, led to the arrest in Delhi on 17 July of Sansar Chand, a well-known wildlife trader with at least 14 major wildlife cases pending against him (see page 102).

TRAFFIC International;
Wildlife Protection Society of India

JAPAN

On 25 February 1995, police arrested a passenger who, a few weeks earlier, at Narita airport, had attempted to import in his hand luggage 3 juvenile gibbons Hylobatidae (App. I) that he had purchased in Jakarta, Indonesia. Two of the animals were diseased and later died; the remaining specimen is being cared for at a zoo. Toshiyuki Chiba was sentenced to 2 years' imprisonment and a 3 years' suspended sentence.

On 16 June 1995, following observations made by TRAFFIC East Asia-Japan while carrying out a survey of pet shops, police in Tokyo arrested a pet shop owner and four others for allegedly selling 1 Nile Crocodile *Crocodylus niloticus* (App. I/II) and 1 Desert Monitor *Varanus griseus* (App.I) without a permit, in violation of the *Law for the Conservation of Endangered Species of Wild Fauna and Flora*.

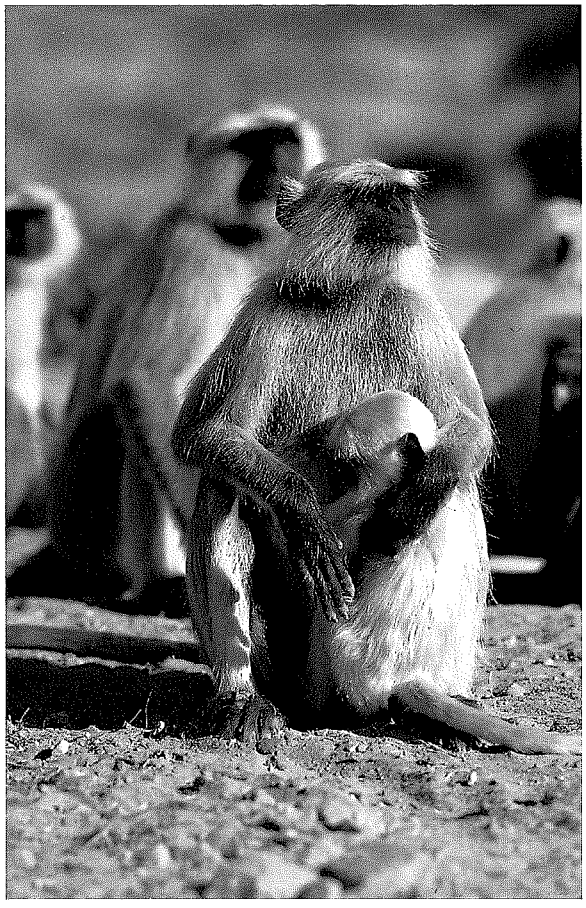
According to police, the same dealer had imported 5 Desert Monitors, incorrectly declared as Ocellated Lizards *Lacerta lepida*, three years earlier. At the time, he claimed that he believed them to be correctly declared as such. Because the time limit allowed for prosecution had expired, the investigation was closed.

Two Japanese nationals charged in October 1994 with illegally importing 15 Black Pond Turtles *Geoclemys hamiltonii* (App.I) and 100 Star Tortoises *Geochelone elegans* (App.II) (*TRAFFIC Bulletin*, 15(2):95) have been sentenced. One of the accused was sent to gaol for 2 years and received a 4 years' suspended sentence (not served by the offender unless he commits a further offence during its currency); the other was sentenced to 1.5 years' imprisonment and received a 4 years' suspended sentence.

TRAFFIC East Asia-Japan

PHILIPPINES

On 25 March 1995, Philippines Navy patrol personnel apprehended 62 Chinese fishermen aboard 4 Chinese fishing vessels near Hasa-Hasa Shoal in the Kalayaan Islands. The vessels were ordered to stop as they were illegally in Philippine territory. An unconfirmed number of live and dead Green Turtles *Chelonia mydas* (App. I) was found on board, some of which had perished and been stuffed, probably on board the boat. Significant amounts of red and blue coral, believed to be *Tubipora musica* and *Heliopora coerulea*, respectively (both App. II), were also found, along with 20 litres of cyanide, several hundred sticks of dynamite and time-delay fuses. The fishermen were detained in the provincial gaol of Puerto Princesa City in Palawan and are to be charged with illegal fishing, possession of explosives and illegal entry. A number of them - below 18 years of age - were released on humanitarian grounds.



© WWF/Yves-Jacques Rey-Millet

Hanuman Langurs *Semnopithecus entellus* (App. I): one specimen was recently seized from a travelling circus in India, where it was being offered for sale.

On 11 April 1995, Philippine officials at Manila airport seized 9 monkeys and 1 juvenile male Gorilla *Gorilla gorilla* (App. I) from two Pakistani nationals as they attempted to smuggle the primates into the country on a Pakistan Airlines flight. The shipment, contained in two crates, included 2 Drills *Mandrillus leucophaeus* (App.I), 4 Vervet Monkeys *Chlorocebus aethiops* (App.II), 2 Patas Monkeys *Erythrocebus patas* (App.II) and 1 baboon Cercopithecidae (App.II).

The primates were taken into the care of environment authorities where they were tested for "nonspecific viral infections"; any testing positive were to be tested for *Ebola* virus. Routine tests for infection carried out on their arrival were found to be negative. After 4 months in quarantine the animals are not showing symptoms of viral illness but will remain under observation. Hopes for their repatriation are thwarted by lack of funds; the centre housing the primates is also short of the funds necessary to keep and maintain the animals.

Embassy of the Philippines, Washington, DC, USA; TRAFFIC International; WWF-Philippines; Department of Environment and Natural Resources, Philippines, in litt. *to TRAFFIC Southeast Asia, 7 August 1995.*

AMERICAS

ARGENTINA

On 14 March 1995, Eric Chail Silberstein was found guilty of the illegal export of more than 5000 caiman *Caiman* skins to Europe. Silberstein had attempted to export the skins to Italy via Belgium in 1989 using a false re-export certificate based on a permit that had been issued legally by Bolivian authorities for another shipment of skins, two years earlier (*TRAFFIC Bulletin*, 11(1):14). On arrival in Antwerp, Customs officials inspected the shipment and found 10 times the number of skins than was recorded on the re-export certificate. In his defence, Silberstein claimed the increased weight of the shipment was a result of chemicals used to treat the skins, a fact described by technical advisers in the case as impossible.

The Belgian authorities called upon the expertise of Dr Dietrich Jelden, head of the German CITES Management Authority and a recognized authority on reptilian skins, and Tom De Meulenaer of TRAFFIC Europe, the country's CITES expert, to inspect and inventory the shipment. A total of 1626 whole skins and 3922 flanks were recorded; most of these were Spectacled Caiman *Caiman crocodilus* (App.II); a few Broad-nosed Caimans *Caiman latirostris* and Black Caimans *Melanosuchus niger* (both App.I) were also identified. The shipment remains in the care of Customs officials in Antwerp.

Silberstein was given a suspended sentence of 3 years' imprisonment (not served unless the offender commits a further offence during its currency). This case represents the first prosecution in Argentina for the illegal trade in skins. Fundación Vida Silvestre Argentina, TRAFFIC South America, a TRAFFIC consultant and the CITES Secretariat assisted the investigation.

TRAFFIC South America; TRAFFIC Europe; La Prensa (Argentina), 16 March 1995; La Nación (Argentina), March 1995

CHILE

On 31 March 1995, following a tip-off, TRAFFIC South America alerted the CITES Management Authority in Chile to a possible smuggling attempt by a well-known Uruguayan trader, on route to Russia via Santiago. As a result, the passenger's hand luggage was inspected by Customs officials on his arrival at Santiago airport and found to contain 3 Hyacinth Macaws *Anodorhynchus hyacinthinus* (App. I); as no legal permit could be produced, the birds were seized. The passenger was allowed to continue his journey to Moscow but the birds were returned to Brazil where they are being held temporarily in Sao Paulo Zoo.

TRAFFIC South America

USA

The following two cases represent the first felony convictions for plant smuggling into the USA.

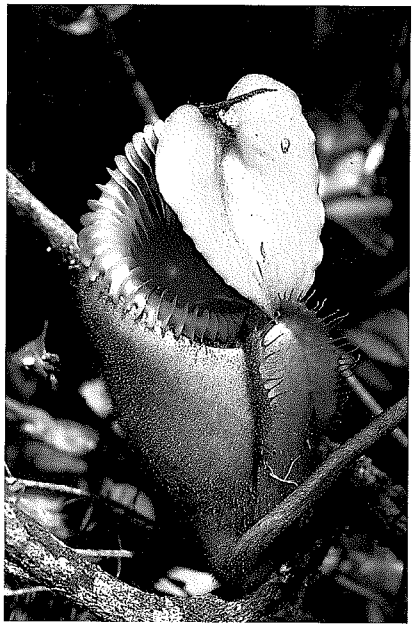
On 10 April 1995, in the Central District of California, Eric Von Geldern, Dr William Baumgarti and Curtis Tom were convicted of smuggling over 200 pitcher plants (App. I/II) into the country from Indonesia and Malaysia in September 1994. The plants were shipped by mail or via Los Angeles International airport. All men, who pleaded guilty, agreed to pay a US$10000 fine and were each sentenced to 3 years' probation and 200 hours of community service.

Von Geldern, a deputy district attorney and government prosecutor for Alameda County, California, also faces professional disciplinary action; Baumgarti is the former President of the Bay Area Carnivorous Plant Society, a branch of the International Carnivorous Plant Society.

On 24 April 1995, in the Northern District of California, Harto Kolopaking of Indonesia was sentenced to 5 months' imprisonment for smuggling over 1500 Asian lady's slipper orchids *Paphiopedilum* (App. I) from Indonesia to California in 1992 and 1993 (*TRAFFIC Bulletin*, 15(2):95). Other suspects involved in this case are under investigation. The investigation was conducted by the US Fish & Wildlife Service.

On 3 May 1995, at the Central District of California, Isabel Bonilla of El Salvador was charged with smuggling eggs of Olive Ridley Turtles *Lepidochelys olivacea* (App.I) to the USA in violation of the *Endangered Species Act* and CITES. In October 1994, Bonilla and co-defendant Sebastian Guerrero-Chacon attempted to bring 3780 Olive Ridley Turtle eggs on a flight from El Salvador to the USA. It is believed to be the largest shipment of sea turtle eggs ever seized in the USA. The contraband was concealed in 8 boxes and was discovered at Los Angeles International airport by inspectors of the Department of Agriculture.

Bonilla was sentenced to 6 months' imprisonment, to be followed by a 2-year period of supervised release. Guerrero-Chacon fled to El Salvador after being freed on US$10 000 bond. He is being sought to face charges.



© WWF/Michel Terrettaz

Pitcher plant *Nepenthes sp.* The illegal import of some 200 pitcher plants to the USA from Indonesia and Malaysia has resulted in the prosecution of three individuals in the USA.

On 5 July 1995, in Los Angeles, California, Theodora Swanson of Memphis, Tennessee, was convicted of charges of conspiracy, smuggling cockatoo eggs and importing wildlife taken in violation of the *Wildlife Protection (Regulation of Exports & Imports) Act 1992* of Australia.

Swanson was a member of a cockatoo egg smuggling ring involved in the importation of over 400 cockatoo eggs from Australia to the USA between 1983 and 1993. The birds were hatched, reared and sold for up to US$13 000 each. The eggs, which had been removed from nests in protected areas, were of Red-tailed Black-Cockatoo *Calyptorhynchus banksii*, White-tailed Black-Cockatoo *Calyptorhynchus baudinii*, Pink Cockatoo *Cacatua leadbeateri*, Yellow-crested Cockatoo *C.sulphurea* , Long-billed Corella *C. tenuirostris* and Galah *Eolophus roseicapillus* (all App. II). Couriers fitted with special vests to conceal the eggs during the flights from Australia were allegedly instructed to flush the birds down an airline toilet if they hatched during the flight.

Swanson and four others, including the ringleader in the operation, await sentencing. A sixth person, John Barth, was sentenced to 2 years' imprisonment in September 1994 for his involvement (*TRAFFIC Bulletin*, 15(1):40).

The case forms part of an ongoing investigation called Operation Renegade, conducted by the US Fish & Wildlife Service.

US Fish & Wildlife Service Division of Law Enforcement, in litt., *21 April 1995; US Department of Justice News Release, 3 May 1995; TRAFFIC Oceania*

Notes on Freshwater Turtle Exploitation, Uttar Pradesh, India

Fahmeeda Hanfee

The consumption of freshwater turtle meat in India is particularly popular among the people of west Bengal, in northern India. All major towns and cities along the Ganges river in Uttar Pradesh (Kanpur, Lucknow, Moradabad, Etawah) are reported to be collection centres for turtles sent to markets in Calcutta. The banks of the river are heavily populated by a number of tribes and castes, including the Mallah, Machuare, Kanjars, Aheris, Lodhes and Harijans, all of whom are known to exploit turtles for their meat and carapaces. Reports by Moll (1991) of a thriving turtle industry in the Gangetic plain and a TRAFFIC study on the trade in turtles in India (Choudhary and Bhupathy, 1993) prompted this brief investigation of the trade in areas around the Narora barrage (approximately 100 km from Delhi), situated on the Ganges river in the district of Bulandshahar, in Uttar Pradesh, where there is a sizeable population of freshwater turtles. Some 70 villages elsewhere in the state were also surveyed, in the months of October 1993 and July 1994.

Emydidae (Pond Turtles)	**Protection Status**
Red-crowned Roofed Turtle*	
Kachuga kachuga	Schedule I
Three-striped Roofed Turtle	
Kachuga dhongoka	not listed in *WPA*
Indian Roofed Turtle	
Kachuga tecta	Schedule I (App.I)
Indian Tent Turtle	
Kachuga tentoria	not listed in *WPA*
Brown Roofed Turtle	
Kachuga smithii	not listed in *WPA*
Black Pond Turtle	
Geoclemys hamiltonii	Schedule I (App. I)
Crowned River Turtle	
Hardella thurjii	not listed in *WPA*
Trionychidae (Softshell Turtles)	
Indian Flapshell Turtle	
Lissemys punctata	Schedule I (App. I)
Indian Softshell Turtle	
Aspideretes gangeticus	Schedule I (App.I)
Indian Peacock Softshell Turtle*	
Aspideretes hurum	Schedule I (App. I)
Narrow-headed Softshell Turtle*	
Chitra indica	Schedule IV

Table 1. List of freshwater turtles occurring in the Gangetic plain, India.
**not seen during the current survey*
WPA - Wildlife (Protection) Act

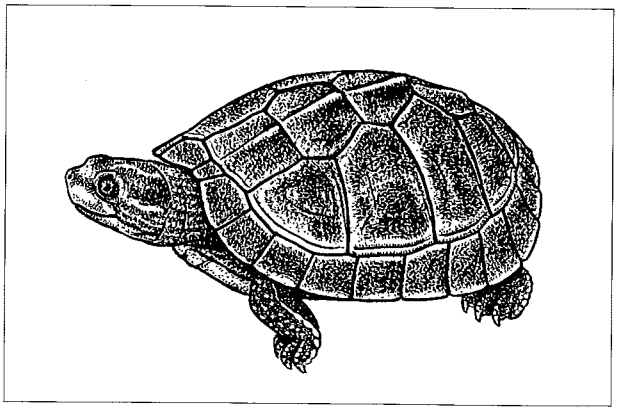
Eleven species of freshwater turtles are reported to occur in the gangetic plain (Moll, 1991), of which eight were seen during the course of this survey. Some are listed under Schedule I of the Indian *Wildlife (Protection) Act* of 1972 which includes "all species threatened with extinction which are or may be affected by trade". Hunting of animals specified in this Schedule is prohibited and trade subject to particularly strict regulations. Several of these species are listed in CITES Appendix I (see Table 1).

The study focused on Rajghat and Bhartinagar, where most fisheries activities around the barrage take place. Each of these settlements has between seven and eight families of the Kanjar tribe - former nomads who have settled in particular localities. Those based in the study area are employed primarily in rope-making and the production of 'kuchi' - a hand-brush made from grass *Sacchrum munja*, and used for whitewashing. Most members of this tribe harvest turtles for their own subsistence and, to a lesser extent, for trade. The animals are captured with nets, and by "probing" - a method, used mainly for capturing softshells, in which the muddy areas along the river are explored with a sharp instrument (usually a spear) upon which the turtle is impaled; turtles are also captured by "hooking", whereby bait is attached to a piece of metal placed on the end of a curved rod, thin rope, or piece of wire and placed in the water. Fishing for turtles is less frequent during the monsoon season (July to September), when fish are breeding and the area is closed by law to fishing activities. However, Kanjar villagers are reported to catch between eight and 10 turtles a day, per family, during this period using baited traps; pond turtles constitute the bulk of this harvest.

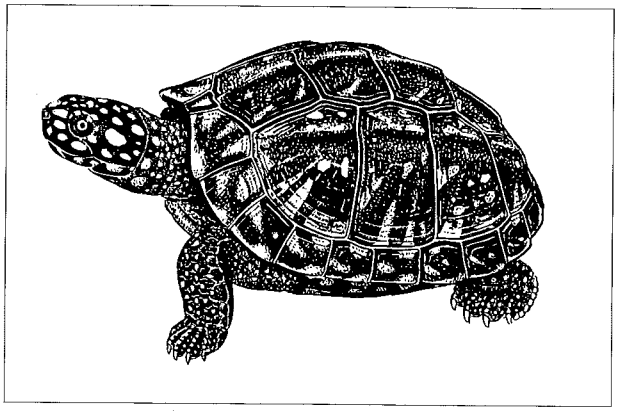
Nearly 100 turtle carapaces were found during the survey in Rajghat. The shells had been concealed in dense Kikar *Prosorpis juliflora* shrubs after being discarded following extraction of the meat. Infrequently, an agent visits to collect shells for a small-scale comb-manufacturing company in Sambhal, in Muradabad district. As such visits are infrequent, however, the shells are often left by the villagers to decay. The shells seen comprised 6 *Geoclemys hamiltonii* (20.1 cm-27.4 cm (straight length)); 1 *Hardella thurjii* (49.7 cm); 75 *Kachuga dhongoka* (26.5 cm-47.6 cm); 7 *K. smithii* (13.9 cm-18.4 cm); 5 *K. tecta* (15.0 cm-20.2 cm); and 3 *K. tentoria* (18.2 cm-20.5 cm).

A few carapaces of *Aspideretes gangeticus, Kachuga dhongoka* and *K. smithii* were seen lying near huts in the village of Bhartinagar. Villagers stated that turtle shells from this area are supplied to the aforementioned comb-manufacturing company at Sambhal.

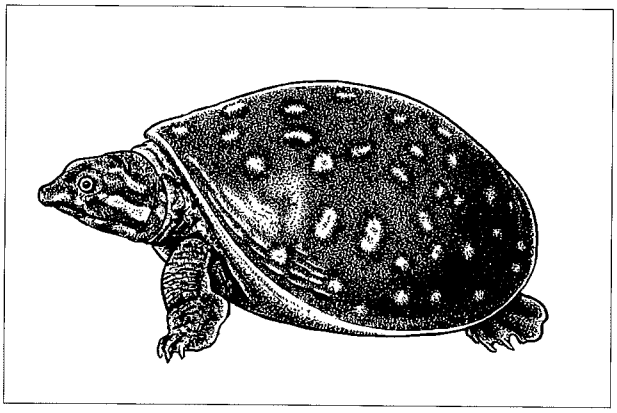
A further 73 villages in the neighbouring districts of Bulandshahr and Mathura, and the district of Aligarh, were also surveyed and turtle exploitation recorded in 26 villages. These villages comprised over 200 families, 85% of which were Kanjars. It is difficult to estimate the extent of exploitation and whether the turtles are for local use or commercial trade. On the basis of the information gathered, however, the bulk of consumption seems to be confined to those villages surveyed. An increasing trend of transporting turtles outside of the state was noted, however. For example, turtles are sent via Aligarh by



Indian Roofed Turtle *Kachuga tecta* (Appendix I).



Black Pond Turtle *Geoclemys hamiltonii* (Appendix I).



Indian Flapshell Turtle *Lissemys punctata* (Appendix I) - the most widespread, and most exploited freshwater turtle in Uttar Pradesh, India.

Drawings by Urs Woy, CITES Identification Manual Vol. 3.

train for illegal sale to Calcutta market. The limbs of the turtles are tied and the animals placed in baskets, or 'jhillis' - thin mesh gunny bags - which are concealed in consignments of fish. The major marketing centre for turtle meat is located at Howrah, Calcutta, and other markets for turtle meat include Murshidabad, Malda, Siliguri and Raghunathgarh.

Turtle shells, irrespective of the species, are each sold for approximately Rs.5/- (US$0.15) direct to manufacturers for processing into combs and brush-handles. Ground turtle shell (preferably of softshells) is used by villagers in the treatment of eye allergies and the meat is considered beneficial in the treatment of tuberculosis. Juveniles are kept as pets by village children.

Being the most widespread species of turtle in the region, *Lissemys punctata* is also the most exploited and, according to the findings of the survey followed, in order of importance, by *Kachuga dhongoka*, *K.smithii*, *Geoclemys hamiltonii*, *Kachuga tecta*, *K. tentoria*, *Aspideretes gangeticus* and *Hardella thurjii*.

Although the present level of trade in turtles in the region appears to be low, there are indications that it is in the process of going underground and that new trade routes are opening up. Further studies are needed to determine the extent of turtle exploitation in this area and the implications for the conservation of these species. In the meantime, recommendations by Choudhary and Bhupathy (1993) to improve public awareness among riverside peoples, and to encourage vigilance by road/rail authorities, upon whom illegal traders are dependent for the transport of their cargo, should be acted upon.

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Fahmeeda Hanfee, Project Officer, TRAFFIC-India.

Application of the CITES-listing Criteria to Plants

Marianne Syrylak Sandison

New criteria for the amendment of the CITES Appendices were adopted at the ninth meeting of the Conference of the Parties, one of the most important decisions ever taken by the Parties. Throughout the drafting process, the CITES Plants Committee contributed significantly to the development of the criteria, particularly those relating to Appendix I-listing, through a series of validation exercises. At the most recent meeting of the Plants Committee it was decided to continue this work as an ***application exercise*** *and to extend it to include the Appendix II criteria. The results will be presented to the next meeting of the Plants Committee, in July 1996. Preliminary results of the application of the Appendix I criteria are briefly described.*

Introduction

Throughout the drafting process the CITES Plants Committee maintained a keen interest in providing input into development of the new criteria. Work on validating the criteria, with particular respect to the Appendix I criteria, was carried out at the Royal Botanic Gardens, Kew, on behalf of the Plants Committee (see Sandison and McGough, 1994).

Main Features of the Criteria

The new criteria in Resolution Conf. 9.24 (Anon., 1994) consist of biological and trade criteria for Appendix I and Appendix II, a suite of precautionary measures, recommendations for the use of split and higher taxon listings, definitions of terms used and a format for presenting the information relating to proposals to amend the Appendices.

Appendix I

The Convention states that to qualify for inclusion in Appendix I, taxa must be "threatened with extinction" and that they "are or may be affected by trade". The criteria set out to define these statements, by means of both biological and trade criteria respectively.

Summary of the Biological Criteria for listing in Appendix I

A taxon may qualify for inclusion in Appendix I if it satisfies any **one** of the 'biological' criteria:

A. it has a small wild population (<5000);
B. it has a restricted area of distribution (<10 000km^2);
C. the number of individuals in the wild is, has been or is inferred to be, in decline (20% within 10 years or three generations, or 50% in five years or two generations);
D. it is likely to meet one of the above within five years if not listed in Appendix I.

N.B. The numerical values are guideline figures and are ***not*** *intended to be absolute values.*

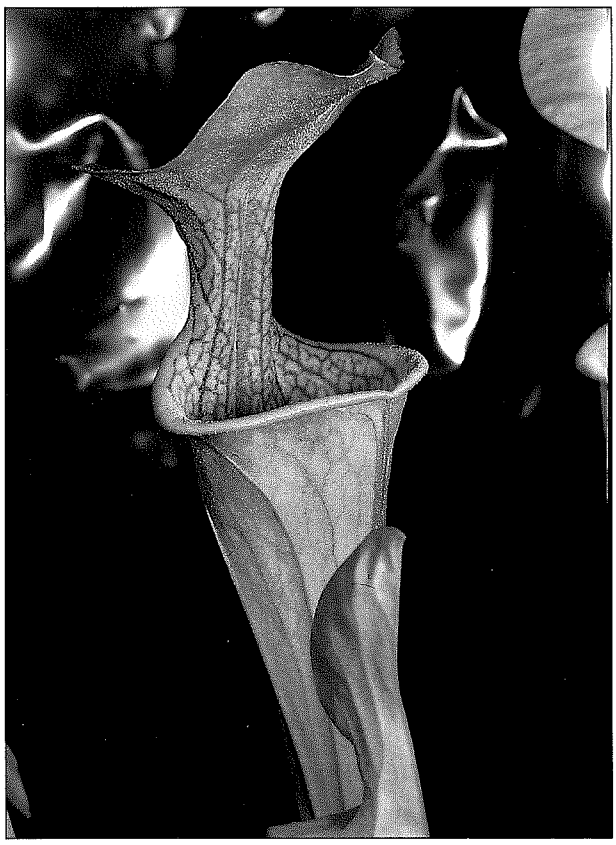
Trade Criteria for Appendix I

A species "is or may be affected by trade" if:

i. it is known to be in trade;
ii. it is probably in trade;
iii. there is potential international demand for it; or,
iv. it would enter trade if not subject to AppendixI controls.

Appendix II

According to the Convention, Appendix II should include species which although "not now necessarily threatened with extinction, may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival". Under this definition it is clear that some degree of vulnerability of the population as a result of trade and other factors should be demonstrated, although it need not be actually occurring at the present time.



Green Pitcher-plant *Sarracenia oreophila* (App. I) - one of the three species in this genus found to qualify for CITES Appendix-I listing after application of the new biological criteria.

Table 1. Summary Table: Appendix I Biological and Trade Criteria.

The following summary of information clearly shows under which criteria *Ariocarpus bravoanus*, a small spineless cactus found in northern Mexico, qualifies for inclusion in Appendix I.
The information in the table and the explanations for the decisions should be read in conjunction with the AI Criteria (Annex 1) and Definitions, Notes and Guidelines (Annex 5) in Resolution Conf. 9.24.

A species is considered to be threatened with extinction if it meets, or is likely to meet, *at least one* of the 'biological criteria' (A,B,C or D) *and one* of the 'trade' criteria (i-iv).

Biological Criteria >	**A** The wild population is small, and is characterized by *at least one* of the following (i-v):					**B** The wild population has a restricted area of distribution and is characterized by *at least one* of the following (i-iv):				**C** A decline in the number of individuals in the wild, which has been either (i-ii):		**D** If not included in AI, species would satisfy A,B, or C within 5 years	**Trade Criteria** *At least one* of the following (i-iv)				**Result**
Taxon **V**	i	ii	iii	iv	v	i	ii	iii	iv	i	ii		i	ii	iii	iv	
Ariocarpus bravoanus	*	✓	✓	✓	-	-	*	✓	-	-	✓c	*	-	✓b	-	*	-	✓	-	-	Q ABC

Key: *taxon satisfies the criterion; ✓*indicates subcriterion, letters indicate reason where appropriate;* - *does not qualify or insufficient/no information;* Q - *qualifies under criterion, letters specify criterion.*

Information used to determine qualification: *Source: Anderson* et. al., *1994.*

Criterion A: Population is less than 5000, around 230 individuals.
- (i) - Observed decline in numbers due to collecting. No evidence of habitat destruction.
- (ii)/(iii) - Only one population containing few individuals (ii), and the majority, in fact all, are concentrated in one sub-population (iii).
- (iv) - Large short-term fluctuations (does not qualify).
- (v) - High vulnerability due to the species' behaviour or biology (does not qualify).

Criterion B: Species has a restricted distribution - occurs at one site, approximately 1km^2.
- (i) - It occurs at few locations - only one.
- (ii) - Large fluctuations in area of distribution or the number of sub-populations (does not qualify).
- (iii) - A high vulnerability due to the species behaviour (does not qualify).
- (iv) - An observed, inferred or projected decrease in any one of the following:
  a) the area of distribution (does not qualify); b) the number of sub-populations (does not qualify); c) there has been a reduction in the number of mature individuals due to collection; d) the area or quality of habitat (does not qualify); e) reproductive potential (does not qualify).

Criterion C: A decline in the number of individuals in the wild.
- (i) - Observed as ongoing or as having occurred in the past (but with a potential to resume) (does not qualify).
- (ii) - Inferred or projected on the basis of: a) a decrease in area or quality of habitat (does not qualify); b) should the site of this plant become known to collectors, levels of exploitation could lead to the removal of the entire population.

Criterion D: The status of the species is such that if not included in Appendix I, it is likely to satisfy one or more of the above criteria within five years - does not qualify.

Result: **Qualifies for inclusion in Appendix I under A, B and C.**

Summary of Appendix II Criteria

A taxon should be listed in Appendix II if:

a. unless trade is strictly regulated it may meet one of the Appendix I criteria in the near future; *or*
b. harvesting of the species has or may have a detrimental effect on the species;
c. a non-expert would be unable to distinguish it from a species already listed in Appendix I or II - the so-called 'look-alike' basis.
d. the species is a member of a taxon most of the species of which are included in Appendix I or II - the so-called 'higher taxon' listing.

Application of the Appendix I Criteria

The groups used in this exercise were Asian slipper orchids of the genus *Paphiopedilum* (Appendix I), the Appendix I-listed Cactaceae and the genus *Sarracenia* - carnivorous plants found in North America (Appendix I/II). Table 2 summarizes the results of this exercise. The first two groups were also tested in the previous validation exercises carried out on draft new criteria (see Sandison and McGough, 1994).

Taxon	Criteria A	B	C	D	No. Taxa Qualifying	Total No. Tested
Cactaceae	31	49	20	0	59	59
Paphiopedilum	15	71	61	0	78	81
Sarracenia	0	3	3	0	3	10

Table 2. Application Exercise: Results for AI Biological Criteria.

Conclusions

Each criterion makes use of different information:

- Criterion A makes use of population information;
- Criterion B makes use of information on the distribution of the taxon;
- Criterion C makes use of information on declines that may be occurring, but does not require the specific detail on exact numbers required by Criterion A;
- Although no taxa in this exercise qualified under Criterion D, this criterion provides the basis for continuing to list a taxon, even if evidence suggests that it may not qualify for Appendix I, but would do so very quickly if transferred to Appendix II and traded. It also supports the 'Precautionary Principle' which states that in the case of uncertainty regarding the conservation status or the impact of trade on a taxon, listing should be conservative - an Appendix I-listing instead of Appendix II, for example.

In brief this initial exercise indicates that the new criteria for Appendix I:

- Require no more information than the Berne Criteria
- Do not require comprehensive data
- Make the reasons for listing more apparent
- Make the best use of the available information
- The numerical values applicable to the Appendix I criteria, which are presented only as guidelines, have been found to be surprisingly robust when applied to plants.

Recommendations of the CITES Plants Committee

At the sixth meeting of the Plants Committee, in June of this year, the Plants Committee recommended that:

- When presenting proposals for listing amendments to the Plants Committee, summary tables should be completed. The summary tables present the criteria for Appendices I and II in a concise form; by using the data available to apply the criteria to a taxon, the table can subsequently be completed, providing a valuable summary of information and decisions. An example of how to complete a table for the Appendix I cactus, *Ariocarpus bravoanus*, can be seen in Table 1. It is intended that these tables should supplement the information provided using the proposal format, not replace it. Blank tables for Appendix I and II are available in English and Spanish from the author.
- The validation exercise should continue, but as an **application exercise** and should be extended to include testing of the Appendix II criteria. Participants were invited to test taxa of particular interest to them against the criteria. It was also requested that this information, completed summary tables and full supporting data, be supplied to the author (address below).
- Finally, the Plants Committee requested that consolidated replies be presented in the form of a report to the next meeting, in July 1996.

Acknowledgements

Acknowledgement is made to Nigel Taylor, Phillip Cribb and Noel McGough of the Royal Botanic Gardens, Kew, and to the Department of the Environment for their assistance and support.

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Trade in Seahorses for Traditional Chinese Medicines, Aquarium Fishes and Curios

Amanda C.J. Vincent

Introduction

Seahorses are not usually regarded as economically important fishes. Yet these attractive animals are now threatened by heavy exploitation for use as medicines and aphrodisiacs, aquarium fishes, curios and foods. This trade - hitherto overlooked - is increasing rapidly, primarily because of the great demand for medicinal products provoked by China's economic growth. The volumes of seahorses traded appear sufficient to threaten wild populations globally. Seahorses are currently afforded no formal protection: no seahorse species is included in the CITES Appendices, although the IUCN Red Data book (Groombridge, 1993) classifies the Knysna Seahorse *Hippocampus capensis* as Vulnerable and some national Red Data Books (e.g. Portugal, Spain, Vietnam) mention other seahorse species without protective status.

What we know of their biology suggests that seahorses are very vulnerable to fishing pressure (Vincent 1994a, 1994b,1994c; Vincent and Sadler, 1995): only the male seahorse becomes pregnant, undergoing repeated pregnancies for much of the year, and killing the father also condemns the young; lengthy parental care combines with small brood size to limit potential rates of reproduction; strict monogamy means that social structure is easily disrupted and their sparse distribution retards re-pairing; adult mortality rates are usually low and not density dependent so fishing exerts a new selective pressure; low mobility and small home ranges restrict recolonization of depleted areas.

Seahorses live in coral, seagrass and mangrove habitats in temperate and tropical regions. Their taxonomy is a chaos of synonymy and misnomers but we can estimate about 35 valid species, all in the genus *Hippocampus*, family Syngnathidae. Even those species with wide latitudinal and longitudinal ranges occupy only a small portion of seemingly suitable habitats. Adult seahorses range in size from about 10 mm-300 mm and can weigh more than 25 grammes (g) (live weight).

This paper focuses on direct exploitation of seahorses, particularly in Southeast Asia, but it must be remembered that habitat destruction - as a consequence of dredging, dumping, polluting, silting and clearing - also poses a grave threat to seahorse survival.

Methods

This report is based on fieldwork carried out during April and May 1993 and January to May 1995 in China, Hong Kong, Indonesia, the Philippines, Taiwan, and Vietnam. The material is derived from a total of 376 interviews (with fishers, buyers, exporters, importers, wholesalers, retailers and related experts) and surveys of retail outlets. The interviews were generally conducted in the local language and were rather loosely structured. Local biologists acted as interpreters and later verified the author's notes. Information was cross-checked by rephrasing the same question at different stages during an interview and by asking the same questions of people at all levels of the trade. Information on trade volumes was recorded in whatever units the respondent offered (e.g. liang or catty per day, number of seahorses per week, or kilogrammes per month) and later converted to weights and seahorses per year. Multiplying by the number of people at each particular level of the trade enabled calculation of the total trade volume at each level in each region. Comparing volumes across trade levels allowed general verification of estimates.

The few published trade statistics on seahorses contain gaps and discrepancies but provided an indication of changes in the trade. Correspondence with biologists, consultants and conservation officers in many countries contributed to a global view of the seahorse trade, as did the few local published reports of seahorse fishing.

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Escalating demand for their use in traditional Chinese medicines is seriously depleting seahorse populations.

RESULTS

Uses

Seahorses are primarily destined for use in Traditional Chinese Medicine (TCM), whatever their country of origin. Seahorses do not appear in the ancient compendium which provides the basis for TCM (Divine Peasant's Herbal Compendium: *Shen Nang Ben Cao Jing*) but are included in the revised version from the Ming dynasty (1368-1644), and are now generally available from pharmacies (TCM and mixed Western/TCM) and market stalls.

Chinese communities use seahorses to cure asthma, arteriosclerosis, broken bones, incontinence, impotence, kidney disorders (for Chinese, the word kidney may denote general health beyond the specific organ), skin ailments, thyroid disorders including throat goitres, and excessive phlegm. In Taiwan, seahorses are taken primarily as an aphrodisiac or general tonic. Seahorses are usually bought whole then ground with other (mostly plant) ingredients to meet the patient's individual needs. Alternative cures involve boiling seahorse and drinking the resulting broth, while not ingesting the seahorse. Seahorses may also be left to ferment in strong alcohol, again with other medicinal material including pipefishes, and the liquid eventually drunk as a strong restorative or general tonic.

At least 10 species of IndoPacific seahorses (and more species from elsewhere) are utilized in TCM, but we can be confident of the identity of only one of these species, *Hippocampus trimaculatus*. Medium-sized dried seahorses for sale in Hong Kong, China and Vietnam in 1995 weighed 3.6 g (n=20). Consumers prefer to buy seahorses that are smooth and large. Many seahorses sold in Hong Kong have been bleached white; consumer demand dictates that these command premium prices although consumers have begun to express concern about the chemical residues left by the bleaching process. Bleached seahorses are commonly re-exported from Hong Kong or China to TCM shops in the producer nations such as Indonesia and the Philippines.

Seahorses are used to a lesser extent in other oriental medicines, such as Jamu (Indonesian) medicine and folk medicine in the central Philippines. They are also in demand as aquarium fishes, even though they generally die quickly in captivity. Curio shops the world over sell seahorses as souvenirs, or processed into keychains, jewellery, ornaments and paperweights. Although rarely consumed as food *per se*, the occasional health food restaurant offers seahorses on the menu.

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Dried seahorses for sale in Hong Kong.

Trade routes

The growing list of countries found to trade seahorses (and/or their pipefish relatives) includes Australia, Belize, Brazil, China, Dubai, Ecuador, India, Indonesia, Japan, Kuwait, Malaysia, Mexico, New Zealand, Pakistan, the Philippines, Singapore, Spain, Sri Lanka, Tanzania, Taiwan, Thailand, United Arab Emirates, USA, and Vietnam. Nations on this list with a significant ethnic Chinese community may both import and export seahorses, sometimes the same individuals.

Fishers may target seahorses specifically, may seek them while targeting other species, or may obtain them as a by-catch of other fishing (trapped in trawls, seines or barrier nets); seahorses from all sources represent commercial value. Some fishers that target seahorses collect them during the day, wielding long-handled scoop nets from small rafts. In other areas, collectors catch seahorses by hand at night, claiming they are easier to find then. Still other seahorse fishers employ hookah rig breathing-apparatus for lengthy dives to greater depths to obtain other, less-exploited species.

Seahorses can be kept alive for the aquarium trade or killed for the medicine and curio trades. Two factors lead most fishers to kill the larger animals, even where there are ready buyers for live seahorses: it is more difficult to keep seahorses alive and large seahorses are worth more dead than alive, because the price for dead seahorses increases by weight whereas live specimens generally fetch a fixed price. For example, in early 1995, collectors in the central Philippines received up to US$0.50 per dead seahorse but only about US$0.25

per live seahorse. In the more remote areas, fishers kill all seahorses, amassing them until a buyer next visits.

Dead seahorses are usually exported by ethnic Chinese living in producer countries, often together with shark's fins and sea cucumber (bêche-de-mer). The markets for live seahorses are primarily in North America and Europe but Japan and Taiwan also purchase seahorses for aquaria.

Volumes and values

The global trade in seahorses is clearly huge but enormous gaps and discrepancies in the data make it difficult to deduce exact numbers. TCM consumes vastly more seahorses than do the aquarium and curio trades. China is the biggest user (perhaps 6 million (m) seahorses, based on estimates by TCM importers, dealers and retailers), followed by Taiwan (11.26 tonnes (t) recorded imports in 1994, representing 3 m seahorses), Hong Kong (approaching 3 m based on surveys and industry estimates), and Singapore (2 m-3 m based on export data from source countries). Japan and Korea are known to import seahorses and may absorb large volumes since their medical traditions derive from the same roots as TCM; Japanese import commodity companies persistently advertise in Australian fisheries literature for dried seahorses and a single Japanese order placed in Indonesia requested 100 kg (about 28 000) seahorses. Other countries that absorb seahorses include the USA (200 000 dried seahorses imported from the Philippines alone in 1987) and Australia (one import commodity company alone requested 500 kg dried seahorses - approximately 140 000 individuals - in May 1995).

The aquarium trade may account for another million live seahorses globally (interviews indicate that Manila exporters alone sell 300 000 - 400 000 seahorses annually) and the curio trade is also substantial in tourist areas such as Thailand and Florida.

Dried seahorses can fetch high prices: costs in Hong Kong in April 1995 ranged from US$280 per kg for mixed-species, medium-sized, unbleached seahorses, to US$1200 per kg for large bleached seahorses. They are reported to be among the most valuable export fisheries from at least Vietnam and the Philippines (C. Cheung, pers. comm., 1993, S. Ganaden, pers. comm., 1993). Interviews revealed that the trade in seahorses (dead and live) provides more than 50% of the annual cash income of many Filipino fishers and buyers, although its contribution is declining as the seahorse fishery deteriorates.

Effects of the Trade

Current levels of exploitation are seriously depleting seahorse populations. In assessing conservation status, this finding matters far more than producing a definitive global tally of the number sold; precise trade figures are only useful if the total number of seahorses in the oceans is known, which is not the case.

There are reports and strong circumstantial evidence of both recruitment overfishing (declining numbers) and growth overfishing (diminishing size). Almost without exception, seahorse fishers in Southeast Asia report diminishing catches. Fishers in one focal village in the Philippines each caught an average of 20-30 seahorses a night in 1993 but now catch fewer than 10 seahorses per night (pers. obs., March 1995). Collectors from Java and Bali agree that numbers have declined by as much as 50% over the past five years. A seahorse fishery in India - monitored by the Indian Fisheries Service - is deteriorating just two years after opening, apparently as a result of overfishing. These are but a few examples.

Findings indicate that all exploited populations of seahorses are in decline. TCM importers in mainland China offer comments such as "seahorses are heavily fished in China which may explain why they are so small and of such poor quality [small, spiny and dark]", and acknowledge that they have to import most seahorses (from Southeast Asia). The author found that seahorses in waters off Penghu (the Pescadores islands in the Taiwan Strait) are approximately 30% the length of those caught five years ago. The aquarium trade now consists largely of juvenile seahorses, partly because greater demand for TCM (and thus higher prices for dried seahorses) is encouraging fishers also to kill smaller adult seahorses. In conservation terms it makes no difference whether a seahorse is caught for Chinese medicine or the aquarium trade; wild populations are depleted in any case.

Supply clearly does not meet demand. Indeed, the dearth of seahorses is such that one pharmaceutical company official in mainland China asked to buy one tonne of seahorses as soon as the author indicated an

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Pregnant male *Hippocampus reidi*.

interest in culturing seahorses. The supply of large, smooth ("good quality") seahorses has dwindled sufficiently, with consequent price increases, that small and spiny ("poor quality") seahorses are increasingly acceptable in the TCM trade. In fact, virtually any seahorse of any size can now be absorbed into TCM thanks to the rapidly growing trade in pre-packaged proprietary medicines, already accounting for 30% of the seahorse consumption in mainland China; whereas the consumers used to select the raw ingredient themselves, they now purchase pills labelled simply as containing seahorse. The conservation consequences of unrestricted consumption are clearly worrying.

Demand for seahorses is likely to continue increasing steadily as China's economic boom leads to greater wealth, fuelling greater consumption of animal products in medicines and tonics; senior sources in China report that seahorse sales are 10 times greater than 10 years ago. This escalating demand does not bode well for the seahorses' future.

Conservation Measures

Innovative measures are needed to stem the loss of wild seahorses but it will be futile to ignore the many people who depend on this fishery. Thus conservation options include (a) localized community-based protection in the form of reserves; (b) fishery modifications to limit catch size (e.g. no juveniles) or reproductive state (e.g. no pregnant males) or timing (e.g. not during the breeding season), or to rotate harvest areas; and (c) enhancement of seahorse numbers through improved aquaculture (currently unsuccessful) and re-seeding of depleted areas. Liaison with the TCM community is also vital.

Community-based seahorse management projects in seahorse fishing areas of the Philippines and Vietnam, initiated by the author and local counterparts, are promoting local commitment to healthy wild seahorse populations. The level of participation by seahorse fishers and other villagers in the Philippines is already most encouraging: they have established no-exploitation zones which they patrol effectively and are re-seeding with seahorses; they now hold pregnant males in cages in the sea until they give birth (then release the young before killing the male); they participate in seahorse censuses and surveys; and they also report daily catches, providing vital data about changing catch per unit effort and seahorse growth and reproductive parameters. Adjacent villages are gradually becoming involved.

Promoting and enhancing seahorse culturing could also pay important dividends for conservation, by reducing pressure on wild seahorse populations. The author is currently liaising between seahorse captive breeding initiatives, underway in at least eight countries, to facilitate solutions to the many husbandry problems.

Conclusions

Populations of seahorses are certainly collapsing under exploitation. The author urges caution with respect to the implementation of trade restrictions, however. A ban (such as an CITES Appendix I listing) would not be justifiable according to the CITES biological criteria. An Appendix II listing could drive the trade underground because some people fail to recognize the distinction between the two levels of protection. Trade restrictions could be particularly difficult to enforce because these small and easily transported animals are generally traded in small units by small dealers along unorthodox trade routes.

Given the difficulties in controlling the seahorse trade and the conservation threats to wild seahorses, it is important that TCM demand be reduced and seahorse populations be enhanced. The TCM community should seek and promote alternatives to seahorses that are both medically acceptable and ecologically sustainable. But other consumers must also recognize that they contribute to conservation problems with their demand for seahorses as aquarium fishes and ephemeral souvenirs, and should regulate their own consumption.

A TRAFFIC *Species in Danger* report on the trade in seahorses is currently in preparation by the author and will provide detailed findings.

Acknowledgements

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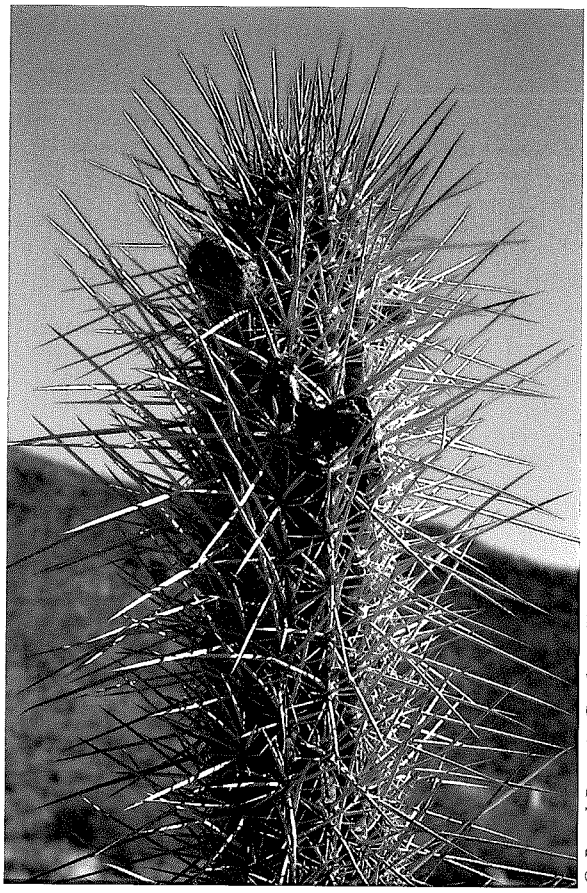
The International Trade in Rainsticks

Marianne Syrylak Sandison

Introduction

Rainsticks are 'musical instruments' and curiosities manufactured from the dead stems of shrubby and arborescent columnar cacti that occur in the wild in Chile and other South American countries. Sealed cylinders of the wood are filled with various materials, such as volcanic sand or pebbles, that run up and down when the stick is tilted. As the material moves it is deflected by 'baffles' - often cactus spines which are pushed through the cylinder into the central cavity. The effect produced is a rather beautiful sound, like that of running water, which has led to the use of rainsticks as percussion instruments. The sticks are often decorated or coated with gum to give them a varnished appearance. Rainsticks may also be made from bamboo or cedar wood (C. Glass, pers. comm., 1995), although these are clearly distinguishable from those made from cactus wood.

The trade in rainsticks made from cactus wood has been increasing in recent years, giving rise to concern over the impact on the wild populations involved.



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***Echinopsis chiloensis* growing in the wild, Chile.**

Species

Rainsticks are made from species in the Appendix II-listed genera *Echinopsis* and *Eulychnia*, the two main species involved being *Echinopsis chiloensis* and *Eulychnia acida*. Both these species are Chilean endemics. Occasionally other species, *Echinopsis skottsbergii*, *Eulychnia breviflora* and *Eulychnia castanea* may be used. The stems of *Eulychnia* species generally have a rough, fibrous texture, and are thinner than those of *Echinopsis,* which are smooth and thick. The structure of the wood, the central vascular cylinder of which is strongly lignified in shrubby and arborescent species, makes these taxa suitable for the manufacture of rainsticks. The rainsticks range in length from 5 cm to 2 metres (m), but are usually between 25 cm and 1 m.

Harvesting

Demand from producers of rainsticks appears to be satisfied by the availability of the dead plant material. In Chile, harvesting of the 'normata', or dead wood, involves the collection of loose pieces, the removal of completely dead plants and the pruning of dead branches from living plants. Kraus (pers. comm., 1995) reports that the abundance of this material makes it highly unlikely that manual cutting and cleaning of the living branches or stems is carried out; the work involved is not justified by the present market price of rainsticks. Cutting living stems, with the intention of allowing them to rot, only results in the cut stems taking root and the plant

Taxon	Synonym	Common names	Distribution
Echinopsis (c. 60 spp.)[1]			
Echinopsis chiloensis	*Cereus chiloensis, C. chilensis, C. quisco, Trichocereus chiloensis*	cacto, quisco, quisca	Chile
E. skottsbergii	*Trichocereus skottsbergii*	quisco, quisca	Chile
Eulychnia (5-10 spp.)[2]			
Eulychnia acida	*Cereus acidus*	acido, copado, copao	Chile
E. breviflora	*E. spinibarbis, E. procumbens*	copado, copao	Chile
E. castanea	*Philippicereus castane*	copado, copado de Philippius	Chile

Table 1. Species profiles.
[1]many intraspecific taxa [2] in part poorly differentiated

Taxon	Year	Term	Importer	REPORTED TRADE Quantity Exported	Quantity Imported	Purpose	Source
Echinopsis chiloensis	1992[1]	other	Germany	-	12 units	S	-
E. chiloensis	1992[1]	carvings	Germany	1400 units	-	-	W
E. skottsbergii	1992[1]	other	Germany	-	12 units	S	-
Eulychnia acida	1992[1]	other	Germany	-	12 units	S	-
E. breviflora	1992[1]	other	Germany	-	12 units	S	-
E. castanea	1992[1]	other	Germany	-	12 units	S	-
Echinopsis spp.	1993[1]	other	Germany	-	2200 units	T	-
E. chiloensis	1993[1]	carvings	Germany	-	1660 units	T	-
E. acida	1993[1]	carvings	Germany	-	5270 units	T	-
E. acida and *E. chiloensis*	1993[2]	-	France	-	40 pcs/25 m	-	-
E. chiloensis and *E. acida*	1993[4]	rainsticks	USA	-	11 200 rainsticks	T	W
E chiloensis and *E. breviflora*	1993[4]	rainsticks	USA	-	13 868 rainsticks	T	W
E. chiloensis and *E. acida*	1994[4]	rainsticks	USA	-	18 569 rainsticks	T	W
E. chiloensis and *E. breviflora*	1994[4]	rainsticks	USA	-	98 041 rainsticks	T	W
E. acida and *E. chiloensis*	1994[2]	-	France	-	3623 pcs/4126 m	-	-
E. breviflora and *E. chiloensis*	1994[2]	-	France	-	6440 pcs/6832.5 m	-	-
E. chiloensis, Maihuenia poppigii and *Opuntia ovata*	1994[2]	-	France	-	60 pcs	-	-
E. chiloensis	1994[2]	-	France	-	350 pcs/362 m	-	-
E. chiloensis	1994[3]	-	Germany	-	6550 pcs	-	-
E. acida	1994[3]	-	Germany	-	4497 pcs	-	-
E. breviflora and *E. chiloensis*	1994[2]	-	Italy	-	1000 pcs/600 m	-	-
E. breviflora and *E. chiloensis*	1995[2]	-	Italy	-	1330 pcs/860 m	-	-
E. acida and *E. breviflora*	1995[2]	-	France	-	1170 pcs/902.5 m	-	-
E. acida and *E. chiloensis*	1995[2]	-	Italy	-	925 pcs/735 m	-	-
E. chiloensis and *E. acida*	1995[4]	rainsticks	USA	-	79 371 rainsticks	T	W
E. chiloensis and *E. breviflora*	1995[4]	rainsticks	USA	-	20 210 rainsticks	T	W

Table 2. Exports of rainsticks from Chile, 1992-1995.
- = data unavailable; m = metres; pcs = pieces
Purposes: S = scientific purposes; T = trade Source: W = wild
Sources: [1]CITES annual report data provided by the World Conservation Monitoring Centre; [2]CITES Secretariat, 1995; [3]German CITES Scientific Authority; [4]US CITES Management Authority. US data for 1995 up to 25 August.

Taxon	Year	Term	REPORTED Imports	Exports	Purpose	Source
Live						
Echinopsis spp.	1990	live	8415	5470	T	A
E. chiloensis	1990	live	-	135	T	A
E. skottsbergii	1990	live	-	5	T	A
Echinopsis spp.	1991	live	13	99	T	A
E. chiloensis	1991	live	-	4	T	A
Eulychnia breviflora	1991	live	-	4	T	A
Echinopsis spp.	1992	live	-	165	T	A
Echinopsis spp.	1992	-	5	-	P	I
E. chiloensis	1992	live	-	1	T	A
E. breviflora	1992	live	-	1	T	A
Echinopsis spp.	1993	live	5	340	T	A
E. chiloensis	1993	live	-	2207	T	A
E. breviflora	1993	live	-	1	T	A
Other						
Echinopsis spp.	1992	timber	1400	-	T	-
E. chiloensis	1992	other	12	-	S	-
E. chiloensis	1992	carvings	-	1400	-	W
E. skottsbergii	1992	other	12	-	S	-
Eulychnia acida	1992	other	12	-	S	-
Echinopsis spp.	1993	other	2200	-	T	-
E. chiloensis	1993	carvings	1600	-	T	-
Eulychnia acida	1993	carvings	5270	-	T	-

Table 3. Global trade figures (in units) for *Echinopsis* and *Eulychnia* species, 1990-1993 (all trade).
- = data unavailable; Purposes: P = personal; S = scientific purposes; T = trade
Source: A = artificially propagated; I = confiscated; W = wild
Source: CITES annual report data provided by the World Conservation Monitoring Centre

Exporters:
Argentina
Brazil
Canada
Dominican Republic
Japan
Malta
Mexico
Morocco
Netherlands
Peru
UK
USA

Importers:
Austria
Canada
Cayman Islands
Chile
Denmark
France
French Polynesia
Germany
Italy
Japan
Thailand
Trinidad & Tobago
UK
USA
Yugoslavia

continuing to grow (R. Kraus, pers. comm., 1995). Spines for use as 'baffles' within the rainsticks are harvested from living plants (N.P. Taylor, pers. comm., 1995), or collected from the ground.

International trade

Chile is the main exporter of rainsticks, primarily to the USA, Germany and other European countries. According to the US Management Authority (MA), there are no records of imports or exports of *Echinopsis* or *Eulychnia* species in the US annual reports for 1992, and no exports were recorded in 1993. Import data for that year have yet to be compiled; from examination of used permits, however, the US Management Authority observes that, in 1993 some 25 068 rainsticks made from *Echinopsis chiloensis, Eulychnia acida* and *E. brevifolia* were imported from Chile. This increased to 116 610 rainsticks in 1994; by 25 August of this year, some 99 581 rainsticks had been imported.

In 1992, Germany imported 1400 'units' of *Echinopsis chiloensis* (described as 'timber', 'carvings' and 'other') from Chile; figures for 1993 rose to 9070 'units' ('carvings' and 'other') (Anon., 1995a). At the sixth CITES Plants Committee meeting in June 1995, it was reported that Chile exported approximately 560 000 rainsticks in 1993. This figure differs significantly from the CITES data (presented in Tables 2 and 3). In 1994, Germany imported 4497 pieces of *Eulychnia acida* and 6550 pieces of *Echinopsis chiloensis* (U. Schippmann, pers. comm., 1995). In 1994 imports into France from Chile amounted to some 25 908 metres (m) with 902.5 m being imported in the first half of 1995 (Anon., 1995b). Some 600 m were recorded as having been imported into Italy in 1994, with imports to date in 1995 at around 20925 m (Anon., 1995b).

Rainsticks range in price from a few US dollars up to about US$100. Large-scale trade appears to have started about 10 years ago and it is thought to have already reached its peak.

Other uses

Besides their use in the relatively recently developed trade in rainsticks, the wood of these cacti is used as fuel and for the construction of agricultural enclosures. The fruits are eaten on a small scale by humans and, on occasion, the stems are eaten by livestock.

Conservation status

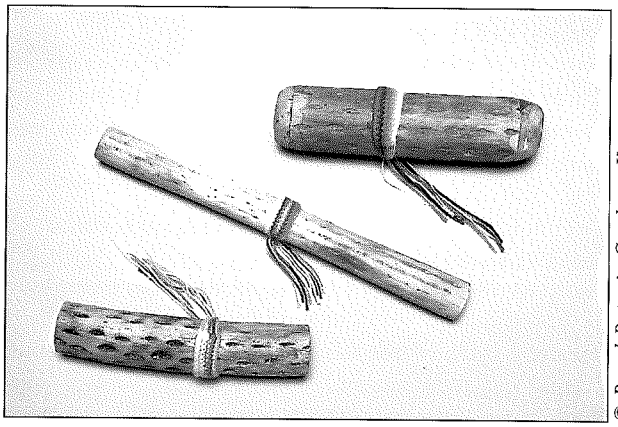
Echinopsis chiloensis and *Eulychnia acida* are classified in the CITES Cactaceae Checklist as 'not threatened' (Hunt, 1991). It is reported that, of the present, recent or historical uses of these species in Chile, the extraction of plants for collections and gardens has had the greatest impact on populations. Yangas (1992) indicated that the amount of dead specimens available may not be sufficient to satisfy the demand, and recommended that a study be initiated to determine appropriate collecting methods.

Conclusion

The trade in rainsticks has been growing in recent years, although it may now have peaked. It appears that only dead material is used to make rainsticks and that this is having little, if any, effect on the status of wild populations of plants used for this purpose. It is clear that the reporting of the trade in rainsticks, which as "parts and derivatives" of Cactaceae species fall under CITES control, is generally very poor.

CITES Plants Committee recommendations

The international trade in rainsticks was discussed at the sixth meeting of the CITES Plants Committee, in June 1995. Although it was recognized that this trade is not a cause for concern, the Committee called for improved reporting of the trade. A report on the rainstick trade will be produced for the seventh meeting, in July 1996.



Rainsticks made from *Echinopsis* and *Eulychnia* (middle).

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