

VOL. 15 NO. 1

1

TRAFFIC

BULLETIN

UTILIZATION OF AFRICAN PANGOLINS

Russian Far East:

THE TRADE IN TIGERS, BEARS
AND MUSK DEER

TAIWAN IMPROVES CONTROL
OF BIRD TRADE

Hippopotamus Ivory

CYCLAMEN, CYCADS AND
ORCHIDS: WILD-COLLECTED
FOR THE EU

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

OCTOBER 1994

TRAFFIC

BULLETIN

VOL. 15 NO. 1

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News	1-4
Marine File	5-7
Legislation File	8
Publications	9
CITES File	14

Recent Information on the Status and Utilization of African Pangolins

*Amie Bräutigam, John Howes, Tamsin Humphreys
and Jonathan Hutton*

15-22

Analysis of the Market for Tigers, Bears, and Musk Deer in the Russian Far East

TRAFFIC International

23-30

Imports of Wild-collected Plants to the European Union

Uwe Schippmann

31-35

Flora File Seizures and Prosecutions

36

37-40

Observations on the Impact of Bird Trade Regulations on Bird Populations in Taiwan

*William Chi, Zhuncheng Zhang, Zhengtian Lin,
Zhezhong Jian and Yongmao Zhen*

41-44

EU Orchid Trade Warrants Closer Inspection

J.A. Roberts and H.N. McGough

45-46

Recent Trends in International Trade of Hippopotamus Ivory

P. Weiler, T. De Meulenaer and A. Vanden Bloock

47-49

Centre insert: Index for Vol. 14

October 1994

Oman Joins International Collaboration to Conserve Rhinos

A Ministerial Decision has been issued by the Government of Oman banning the importation of rhinoceros Rhinocerotidae horn. In accordance with hopes expressed at the 31st meeting of the Standing Committee of CITES (see *TRAFFIC Bulletin* 14(3):84), an executive delegation was received in Oman to discuss means of controlling trade in rhino horn, leading to the decision to outlaw its importation, issued on 18 October 1994, during the three-day visit of the joint delegation from the CITES Secretariat and TRAFFIC.

The decision is effective from its date of issue, although penalties for violation of the legislation will be set later by an Executive Order from the Ministry of Commerce and Industry of Oman. The Government also plans to prohibit the sale of rhino horn at a later date, after a period of time intended to allow existing stocks of horn within Oman to be used up.

Recently the significance of Oman's role in the international trade in rhino horn has been better appreciated, and the Government's decisiveness in taking action to control the trade is especially creditworthy given the cultural importance attached to the tradition of making dagger (*khanjar*) handles from rhino horn in the country. During informal observations of merchandise for sale in Muscat and Nizwa, the delegation noted many *khanjars* on display, including handles apparently recently carved from rhino horn and from elephant ivory.

The Ministerial Decision to ban imports of rhino horn is the first restrictive measure of its kind to be taken in Oman, a non-CITES Party, which otherwise has no legislation to control trade in CITES-listed species. However, the Government of Oman is examining the possibility of joining CITES and has meanwhile extended an offer of full co-operation with the Convention.

Report of the CITES and TRAFFIC delegation to Oman, October 1994

Demand for Bears Under Scrutiny

The subject of demand for bear bile for use in traditional Chinese medicine was a recurring theme at the Third East Asiatic Bear Conference, which took place near Beijing, China, from 5 to 8 August 1994. Approximately 50 participants from China, Japan, Hong Kong, Russia and the UK, met to discuss the ecology, conservation and commercialization of Asian bears. Chinese scientists warned that, despite the fact that China now keeps some 10 000 bears on its bile-milking farms, poaching of wild bears for their gall bladders threatens the survival of China's remaining population of Brown Bears *Ursus arctos* and Asiatic Black Bears *Selenarctos thibetanus*.

In response to the dilemma posed by requirements both to conserve bears in the wild and to use their bile as medicine, the Conference hosted an unprecedented

session inviting representatives of countries in the East and West to air their views. As a result, a working group made up of 10 Chinese, one Japanese and three Westerners will work together throughout the coming year in an attempt to resolve cultural conflicts.

On 9 to 11 September, in Seattle, Washington, TRAFFIC USA, along with the Woodland Park Zoo and the IUCN/SSC Bear Specialist Group, sponsored the International Symposium on Trade of Bear Parts for Medicinal Use. The Symposium was intended as a forum for wildlife managers, law enforcement personnel, and researchers to discuss levels and trends of trade of bear parts, conservation implications, and opportunities for improving regulation, law enforcement, and public education.

TRAFFIC East Asia; TRAFFIC International

Lusaka Agreement Approved

An agreement aimed at co-operation in enforcing international law governing wildlife trade has been signed by six African nations.

On 9 September 1994, Ministers from Kenya, South Africa, Swaziland, Tanzania, Uganda and Zambia signed the Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora (known as the Lusaka Agreement). Under the terms of the Agreement, a task force will be established to combat the smuggling of wildlife out of the African continent. Amongst the principal duties of the unit will be the investigation of violations of national laws pertaining to illegal trade and the dissemination of intelligence relating to such activities. Each Party to the Agreement is required to designate a National Bureau which will be responsible for liaison with the task force; at least one officer from each Bureau will be seconded to the task force headquarters and will carry out cross-border operations in co-operation with the National Bureaux.

UNEP News Release, 9 September 1994

Mali, Romania, Eritrea and Sierra Leone Join CITES

The number of Parties to CITES will shortly be increased to 126: on 16 October 1994 Mali's accession came into force, followed, on 16 November, by that of Romania. Eritrea acceded to the Convention on 24 October 1994, effective 22 January 1995 and Sierra Leone's accession on 28 October, will enter into force on 26 January 1995.

CITES Secretariat

US Trade Sanctions Against Taiwan in Effect

Subsequent to the announcement in April 1994 that trade sanctions would be imposed by the USA against Taiwan in order to prompt better control of illegal trade in endangered species on the island (see *TRAFFIC Bulletin* 14(3):83), the US Federal Register carried news that such sanctions would take effect from 19 August 1994. The prohibition applies to importation to the USA from Taiwan of "fish and wildlife products", which include any wild animal, whether alive or dead, whether or not bred in captivity, and any derivative or product of such animals. Domesticated species, fishery products imported for food, and plants are excluded from the ban.

These sanctions will remain in effect until further notice.

US Federal Register, 59(152), 9 August 1994; *US Fish and Wildlife Service Bulletin*, US Department of the Interior, 9 August 1994

Taiwan Wildlife Law Passed

Amendment to Taiwan's *Wildlife Conservation Law*, amongst the provisions of which are increased penalties for illegal traffic in wildlife, underwent its full passage through the legislature on 27 October 1994 (see page 8).

TRAFFIC East Asia

Tiger Products Prohibited in Singapore

Effective 4 November 1994, Singapore has banned the sale and public display of medicines that contain Tiger *Panthera tigris* (CITES Appendix I) parts and derivatives; a similar prohibition on the sale of rhinoceros Rhinocerotidae (Appendix I) parts and products was introduced two years ago. The ban will enter into force following amendments to the *Endangered Species (Import and Export) (Prohibition of Sale) Notification 1992*.

The proprietors of 10 Chinese pharmacies contacted by the *Straits Times* newspaper endorsed the ban and claimed not to be worried since their stocks of Tiger products were low and could be returned to the suppliers. A spokeswoman for one store selling Tiger bone wine, who was also interviewed, noted that there were many herbal alternatives to Tiger bone wine and stated that demand for such tonics had declined over the last 10 years. The managing director of another store was confident that he could sell remaining stock before November. Three Tiger bone suppliers reportedly said that they would try to export their stocks, though did not specify to which destinations.

The Daily Telegraph (UK), 17 September 1994;
Straits Times (Singapore), 16 September 1994

Taiwan Surveys Medicine Shops

Between March and June 1994, Taiwanese authorities carried out an island-wide undercover investigation of traditional Chinese medicine outlets. To date, some 600 kg of stocks of rhino horn in Taiwan have been identified and marked by the authorities. During the survey, a total of 0.95% of shops surveyed were found to have involvement in illegal trading of rhino horn powder or Tiger bone. The table below documents the findings of the survey.

Month	No. stores checked	No. cases trading rhino horn	Weight rhino horn/powder (g)	No. cases trading Tiger bones	Weight Tiger bones(g)	No. of violators	No. of investigations
March	519	8 (1.3%)	NA	27 (5.2%)	NA	35 (6.5%)	NA
April	5623	15 (0.27%)	349.8	22 (0.39%)	4427.7	37 (0.66%)	2198
May	932	1 (0.11%)	23	1 (0.11%)	375	1 (0.22%)	NA
June	856	0 (0%)	0	1 (0.12%)	198	1 (0.12%)	NA
Total	7930	24 (0.3%)	372.8	51 (0.65%)	5000.7	74 (0.94%)	2198

Survey of traditional Chinese medicine shops in Taiwan, March-June 1994.

Hong Kong Enforces Controls on Tiger Medicines

Between January and August 1994, and following Hong Kong's amendment on 28 February 1994 of the *Animals & Plants (Protection of Endangered Species) Ordinance*, Cap. 187 to cover the control of Tiger medicine in the territory, a total of 109 incidents involving the illegal importation of Tiger products have been uncovered by Customs officers. Additionally, some 1756 shops were inspected by officials from the Agriculture and Fisheries Department who reported seizures of alleged Tiger bones and medicines containing Tiger bone from 15 of them.

Altogether, some 2.89 kg of items claimed to be Tiger bone, and 19 012 packages of medicines and 34 bottles of wine claimed to contain Tiger ingredients were seized.

Prosecutions will be carried out pending further investigations.

Agriculture & Fisheries Department Press Releases, 13/26 September 1994

Wildlife to the Test

Research at the US National Fish and Wildlife Forensic Laboratory has preliminary results of analyses carried out for selected species of endangered taxa, which are regularly listed as contained in Oriental medicines. Two and a half per cent of those medicinal products listed in the Chinese Herbal Medicine: *Materia Medica* (Bensky and Gamble, 1986) were found to be based on derivatives of endangered species, following a survey of all 392 substances listed. Of these species, bears Ursidae, rhinoceroses Rhinocerotidae, Tigers *Panthera tigris*, Musk Deer *Moschus moschiferus* and seals Pinnipedia were selected for research.

Bears

Gall bladders and bile are those parts of bears particularly in demand for Oriental medicines. In combining the results of tests on gall bladders from 289 bears with those of previous investigations of the bile acids of Sun Bears *Helarctos malayanus*, Sloth Bears *Melursus ursinus* and Spectacled Bears *Tremarctos ornatus*, authors of research conducted at the National Fish and Wildlife Forensic Laboratory concluded that bears have a bile acid profile unique to them. Moreover, farmed bears generally lack one of the main bile acids (choly-l-aurine) found in wild bears.

Of samples of bile salts and gall bladders received from the USA (seizures) and from Asia, most were found not to be from bears, while 85% of samples received from Canada were identified as coming from bears, as claimed.

Rhinoceroses

A unique pattern for keratin proteins found in rhino horn has been identified but this process of analysis is undergoing further refinements. Analysis of 12 "tea balls" (supposedly including rhino horn) did not reveal the presence of the relevant keratins. This could have been the result of fraudulent listing of rhino horn as an ingredient, or because the levels of horn in the product were too low (0.5% by weight) to be detected. The presence of toxic inorganic elements (including arsenic, mercury and lead), however, was discovered in all the samples, at levels which could present health problems in long-term users of the "tea balls".

Tigers

Samples of products containing bone can be identified using infra-red spectroscopy. Once the presence of bone is established, immunodiffusion techniques may be applied to determine the animal origin of the bone, to family level. In eight different patented musk-and-Tiger-bone plaster preparations examined, no presence of any bone material was found, nor of any muscone, the secretion produced by a ventral gland of the male Musk Deer.

Tiger penises, like Tiger bone valued in Oriental medicinal remedies, were also examined by researchers, to distinguish them more accurately from penises of other animals purposely modified to resemble those of Tigers. Under magnification, tiny v-shaped incisions made to a bull's penis, for example, may be visible. When made to the hydrated glans penis, these incisions cause the dehydrated organ to resemble a barbed Tiger penis.

Seals

In examining 13 Oriental medicinal items alleged to contain seal penis, 10 were found to include the genuine ingredient. The remaining three included penis(es) from the Canid family, distinguishable from those of seals by the different morphology of the baculum (a heterotopic bone embedded in the penis of certain animals). The form of this bone in seals is generally sufficient to distinguish it from bacula found in certain other mammals.

Reference

Bensky D. and Gamble, A. (1986). *Chinese Herbal Medicine: Materia Medica*. Eastland Press, Seattle, Washington.

Sources: E. Espinoza, Chief, Criminalistics Section, United States National Fish and Wildlife Forensics Laboratory, in litt., 24 May 1994; *Prescription for Extinction: Endangered Species and Patented Oriental Medicines in Trade*. Published by WWF-US/TRAFFIC USA (see page 9 for details of availability).

South Africa Seeks Trade in Elephant Hide

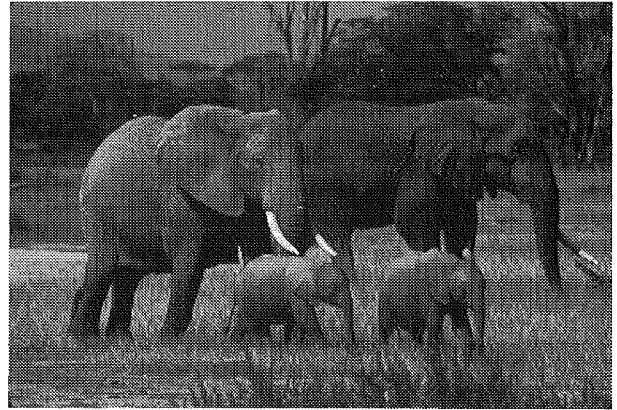
With funding from the US Fish and Wildlife Service, TRAFFIC East/Southern Africa has carried out an assessment of South Africa's trade in raw elephant hide from 1985 until 1991, the year following the CITES ban on international commercial trade in parts and products derived from African Elephant *Loxodonta africana*. The report was intended to provide more information on this industry, in preparation for the ninth meeting of the Conference of the Parties to CITES, where the merits of a proposal by South Africa to transfer its elephant population from CITES Appendix I to Appendix II to allow trade in non-ivory elephant products will be debated.

During the period reviewed for the study, South African wildlife authorities directly earned US\$1.7 million from the sale of raw elephant hide - an annual average of US\$340 000 prior to the CITES trade ban. Thereafter, sales dropped to US\$5500 in 1990 and then ceased altogether as local and international markets disappeared. The hides were taken from elephants annually culled in Kruger National Park (KNP), where a management programme has, since 1967, been deemed essential to prevent unacceptable habitat degradation and pressure on other species. Numbering between 7000 and 7500 and increasing at an average rate of 6.8% annually, the KNP elephant population represents 82% of the country's total. Since 1986, an average of 38 tonnes (t) of dry, salt-cured (raw) elephant hide has been produced each year.

At the height of the trade, most raw elephant hide was marketed to buyers in South Africa, Botswana or Zimbabwe, although in 1986 and 1987, hide valued at US\$251 000 was exported to Asia, primarily Japan. A well-developed tanning industry in South Africa utilized over 600 t of hide, exporting almost half to the USA, 13% to Europe and another 30% to rapidly growing markets in the Far East. In addition, a manufacturing industry in the country also produced a wide range of consumer goods including fashion accessories, footwear, briefcases and golfbags. Overall, the elephant hide trade in South Africa generated more than US\$13 million in the period examined. One year after the CITES ban came into effect, the price of raw elephant hide dropped from a peak of US\$20.04 a kg to US\$3.67 a kg.

Since 1991, the KNP has not received any income from elephant hide and over 95 000 t of salt-cured elephant hide are currently stockpiled. Based on the rate of growth of the elephant population in KNP, it is calculated that some 50 t of hide a year could today be produced on a sustainable basis as well as meet a medium-term demand of 100 live animals a year for translocation purposes.

If the proposal to allow South Africa to resume trade in elephant hide is adopted, and the US and other markets reopen, South Africa can expect considerable financial returns from a revived trade in elephant hide.



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A monograph on the elephant hide trade in South Africa and Zimbabwe is currently in preparation and will be issued in the near future.

C. Steenkamp and P. Massyn, in litt. to T. Milliken, TRAFFIC East/Southern Africa, 13 September 1994

Ivory Stocks in Hong Kong

Following the ban on international trade in African Elephant ivory, some 500 ivory workers in Hong Kong subscribed to a government retraining scheme in 1990/91 to enable them to acquire new skills. The Hong Kong Ivory Manufacturing Workers General Union and Hong Kong and Kowloon Ivory Manufacturing Association estimate that, at present, the number of workers in Hong Kong employed in carving elephant and mammoth ivory, and hippopotamus teeth is fewer than 50.

The stock of ivory in the territory in July 1990 was estimated at 463 t. On 31 July 1994, the total quantity declared on licences held by those registered as being in possession of ivory was 335 t; this included 112 t of worked ivory and 223 t of raw ivory. The difference between the 1990 and 1994 figures is attributed to the domestic consumption of ivory.

P.K. Chan, Agriculture and Fisheries Department, Hong Kong, in litt. to J.A. Mills, TRAFFIC East Asia, 25 August 1994

Taiwan Seizes Ivory

On 5 October 1994, Customs authorities in Keelung, Taiwan, seized 272 tusks and 139 tusk pieces which weighed a total of more than 2000 kg. The haul, believed to have come from Djibouti, had been transshipped from Hong Kong by cargo ship and was registered as sawn lumber. The shipment was bound for Kaohisung, Taiwan. The Investigation Bureau and National Police Administration of Taiwan are investigating the case.

Wildlife Protection Unit, Taiwan, 6 October 1994

OCEANS APART: Atlantic Bluefin Fare Better . . .

A study by the National Research Council (NRC) of the USA reviewing scientific data on the population of Northern Bluefin Tuna *Thunnus thynnus* has found that stocks in both the eastern and western Atlantic have stabilized over the past six years. There is also evidence from the study that considerable 'mixing' takes place between the western stock, which breeds in the Gulf of Mexico, and the larger eastern stock, which is spawned in the Mediterranean. Whether the stocks interbreed is not known.

Since 1982, the bluefin tuna have been managed by the International Commission for the Conservation of Atlantic Tunas (ICCAT) as two separate stocks, divided by the 45° longitude, which extends from the tip of Greenland. Although strict quotas are in force for eastern stocks, fishing of the western population continues virtually without restriction. The findings of the NRC report may mean that plans by ICCAT to introduce tighter quotas for US tuna fishermen in the western Atlantic will be dropped.

Carl Safina of the National Audubon Society has branded the report as being "inconsistent and inconclusive" and claims that it "should not be used as an excuse to avoid additional conservation measures in the western Atlantic".

The US National Oceanic and Atmospheric Administration is now discussing the report's conclusions prior to deciding its stance at the next ICCAT meeting in Madrid, in November.

. . . than Southern Stocks in Straits

There is general agreement that the global parental stock of Southern Bluefin Tuna *Thunnus maccoyi* is at an all-time low. In Australia, the issue of over-exploitation of fish species such as *T. maccoyi* is increasingly being seen by environmental groups as a major conservation problem and the species has been proposed for listing under the US federal *Endangered Species Protection Act, 1992*.

On 23 May 1994, the inaugural meeting of the Commission for the Conservation of Southern Bluefin Tuna (the body responsible for discussing matters relevant to the implementation of the Convention for the Conservation of Southern Bluefin Tuna (CCSBT)) commenced in Wellington, New Zealand, attended by delegations from the three member nations (Australia, Japan and New Zealand) and observers from Taiwan and Indonesia. Issues on the agenda for discussion included: management methods and strategies for *Thunnus maccoyi*; agreement of quotas for 1994; rules of procedure for meetings; fishing by non-Party States; and relations with

other international bodies and conventions, including CITES. Only a few issues were resolved during the discussions, however, and Parties dispersed without formally concluding the meeting.

Unresolved, outstanding issues include agreement on the rules of procedure, actions relating to non-Party States, including how to incorporate any new Parties into the global quota allocation, and agreement on the terms of reference for the Ecologically Related Species Subcommittee.

One issue that was decided was the 1994 quota which, owing to a lack of consensus among the Parties, was left at the same level as 1993: Australia - 5265 t; Japan - 6065 t; New Zealand - 420 t.

The CCSBT has been promoted as the appropriate forum for effectively promoting the recovery of this seriously depleted but financially valuable tuna fishery. However, it would seem from this fairly inauspicious start that the Convention has a long way to go to fulfil a significant conservation role.

Nature, Vol. 371, 8 September 1994; TRAFFIC Oceania

Net Discord in Union Waters

International conflict over scarce fishing resources has led to violent confrontation in recent months between European fishing nations.

In August, the British Royal Navy was called in to protect Cornish fishermen under attack by a Spanish fishing fleet whilst fishing for tuna in the Bay of Biscay. In that violent clash - the UK nets were destroyed by axes - the Spanish claimed that the length of British driftnets violated EU rules limiting nets in waters under the jurisdiction of the EU to 2.5 km. The British fishermen say their net sizes comply with the rules and that the lines are longer as their nets have larger gaps to enable dolphins and other sea mammals, often found swimming with tuna, to escape. The Spanish fishery mainly uses poles, lines and barbless hooks which are highly selective, incur little waste and allow greater employment of people.

The French have also been criticised by Spanish fishermen for using driftnets that contravene EU regulations. Although the French were given a special dispensation from the EU driftnet regulation which allowed them to use nets up to 5 km in length until December 1993 (see *TRAFFIC Bulletin* 14(2):49), this exemption from the ban was not extended.

In August, the House of Lords European Communities Committee called for an urgent investigation into the fishing techniques currently in dispute in the EU. The European Commission has stated that it hopes to phase out the use of all driftnet fishing activities "causing ecological difficulties" by 1997.

*TRAFFIC International; New Scientist, 20 August 1994
The Independent (UK), 7 July 1994*



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Canada Tackles Free Agents of the High Seas

The problem of regulating the harvest of fish stocks in international waters (see *TRAFFIC Bulletin* 14(1):7) continues to prompt new conservation measures and legislation. The requirements of the United Nations Convention on the Law of the Sea (UNCLOS), though still not in force until 16 November 1994, have largely been embraced by other multilateral fisheries conventions, including the Northwest Atlantic Fisheries Organization (NAFO). NAFO currently has 15 contracting parties (Bulgaria, Canada, Cuba, Denmark, Estonia, the European Union, Iceland, Japan, South Korea, Latvia, Lithuania, Norway, Poland, Romania and Russia). The organization sets total allowable catches and other regulations for fish stocks within its jurisdiction. Despite this, groundfish stocks (fish that dwell and feed along the seabed) in the north-west Atlantic have declined by 75% to 250 000 t since 1988 and NAFO reports that numbers of cod *Gadus morhua* (commercially Atlantic Canada's most important fish) around the southern Grand Banks off the coast of Newfoundland are at their lowest point ever recorded. In February 1994, NAFO reviewed these cod stocks at Canada's request, and imposed an international moratorium consistent with the ban already in force within Canada's exclusive fishing zone, up to 200 nautical miles from its coastline (*TRAFFIC Bulletin* 14(1):7).

Against the evolving developments to strengthen the conservation of high seas fisheries, on 10 May 1994, Canada announced new legislation to conserve fish stocks adjacent to but beyond its exclusion zone. Various of these so-called "straddling stocks" will be protected under Canada's new legislation, which will prohibit fishing by vessels without nationality and certain foreign vessels in the area managed by NAFO. The legislation will provide for the use of force, if necessary, to arrest those infringing the law. At present, certain ships sailing under flags of convenience and stateless vessels, unlike those from NAFO countries, are able to catch unregulated amounts of cod, Yellowtail Flounder *Limanda feruginea*, Witch Flounder *Glyptocephalus cynoglossus* and Redfish

Sebastes marinus, for example. Furthermore, the take of such fish by unregulated vessels around the Grand Banks is mainly of juvenile fish, on which the rebuilding of these fish stocks depends. Recently, the flags of convenience most prominent in the north-west Atlantic have been those of Panama, Honduras and Belize, although the two first-mentioned countries agreed in February 1994 to address the problems caused by ships registered with their nationalities.

Government of Canada, Press Releases, May 1994;
Christian Science Monitor, April 1994

Whale Sale

Meat from Minke Whales *Balaenoptera acutorostrata*, captured as part of Japan's quota for scientific research in late 1993 and early 1994, was released for sale in that country at the end of July 1994. The average price of the 497 tonnes (t) offered for sale was the highest achieved to date and 7% higher than that fetched for last year's stock. The highest-quality red meat sold for ¥59 000 (US\$600) per 15 kg (compared with ¥2900 last year).

Since 1987/88, Japan has been capturing about 300 Minke Whales each year for research purposes.

TRAFFIC Japan

Fish With Chips - Licence to Export Captive-bred Bonytongues

A technique that can reveal the parentage of Asian Bonytongues *Scleropages formosus* to determine whether the fish are of wild or captive-bred stock, has been developed in Singapore.

The Primary Production Department (which is the CITES Scientific Authority in Singapore), in collaboration with a fish farm, Rainbow Aquarium, has developed an identity chip, or tag, that will now enable the farm to export captive-bred Asian Bonytongues legitimately, where first-generation specimens of this species were successfully bred nearly 10 years ago. The species is listed in CITES Appendix I.

A fine glass-covered chip - less than 1 cm long - is injected under the skin of the fish. Contained in the device is electronic information on the parentage of the specimen, the date it was first tagged, and a unique bar code, which can then be read with a scanner.

As a consequence of this development, Rainbow Aquarium has become the first fish farm to be issued with a CITES licence to allow the legal commercial export of Asian Bonytongues that have been reared on a farm.

Straits Times (Singapore), 20 August 1994

Marine Medicinals

The compound *isohomohalichondrin-B*, which is being investigated by the National Cancer Institute as a cure for skin and ovarian cancers, has been found in a recently discovered species of sponge belonging to the genus *Lissodendoryx*. The Yellow Slimy Sea Sponge is found only in deep waters off the Kaikoura coast of New Zealand; because of its rarity, aquaculture projects are now being set up in the Marlborough Sounds to enable easier harvesting of the species. Cultivation of the sponge will also allow the chemical to be manipulated to 50 times the amount that occurs naturally. Owing to its complex formula, scientists have been unable to synthesize the compound.

A species of marine alga has been found to possess a compound shown to be effective in the treatment of cerebral and cardiovascular diseases. The drug, named PPS and developed by the Drug and Food Institute of Ocean University of Qingdao, China, is said to possess anti-blood-clotting properties up to 50% as effective as those produced by the anticoagulant *heparin*, but without side-effects. The compound reduces adhesion between red blood cells and between the cells and the wall of blood vessels, thereby reducing the viscosity of the blood and lowering blood pressure.

The compound is reported to have a 65% success rate in treating cerebral infarction and nearly 80% success in treating hypercoagulating diseases.

Infofish International 1,2/94, cited in FFA News Digest 2,4/94; New Scientist, 30 July 1994

BOOK REVIEW

Nearshore Marine Resources of the South Pacific: Information for Fisheries Management and Development

Edited by Andrew Wright and Lance Hill

Published jointly by the Forum Fisheries Agency (FFA), the Institute of Pacific Studies of the University of the South Pacific, and the International Centre for Ocean Development. For details of availability contact FFA, PO Box 629, Honiara, Solomon Islands.

This book deals with resources mainly of interest to village fishermen. It addresses constraints experienced by most island fisheries personnel in collecting and reviewing plentiful information that is scattered widely throughout the scientific and general literature, covering resource biology, fisheries information and resource conservation and management issues. The publication will help focus attention on increasing pressure to exploit nearshore resources commercially, exploitation that may lead to extinction, and will help promote consideration of financial and manpower resources for rational fisheries management and conservation practices.

Turtle Survey in Cuba

Observations in 1992 of large turtle carapaces on beaches along the southwest coast of Cuba and other turtle products for sale in local tourist shops in the area, prompted an investigation in July 1994 into the status of marine turtles in this region of the Caribbean. The ten-week survey was undertaken by a group of volunteers from the Exploration Society and the Tropical Marine Research Unit at the University of York, UK. The group mapped the feeding and nesting areas of the Loggerhead Turtle *Caretta caretta*, Green Turtle *Chelonia mydas*, Hawksbill Turtle *Eretmochelys imbricata* and Kemp's Ridley Turtle *Lepidochelys kempii* and investigated the fate of those specimens captured in local waters. The continued loss of nesting beaches to coastal construction (mainly associated with development of the tourist industry), was also examined.

This expedition formed the first of an anticipated group of three annual expeditions to Cuba to assess the status of marine turtles. It is hoped that the surveys' findings with regard to the capture and sale of turtles can be included in a future issue of the *TRAFFIC Bulletin*. The Scientific Co-ordinator of the expedition, Timothy Austin, welcomes any comments or advice for the further two expeditions that are proposed, and can be contacted at the Tropical Marine Research Unit, Biology Department, University of York, York YO1 5DD, UK.

*T. Austin, University of York, in litt., 26 May 1994/
6 October 1994*



Rock-lobster fishermen working in shallow sub-tidal waters.

Reproduced courtesy of CONSERVA, magazine of the Department of Environment Affairs, Pretoria, South Africa © Roy Melville-Smith

QUOTAS

SOLOMON ISLANDS

An annual export quota for 1994 has been set by the Solomon Islands for the following species:

Pacific Lizard	<i>Varanus indicus</i>	800
Eclactus Parrot	<i>Eclactus roratus</i>	500
Ducorps Cockatoo	<i>Cacatua ducorpsi</i>	500
Yellow-bibbed Lory	<i>Lorius chlorocercus</i>	400
Cardinal Lory	<i>Chalcopsitta cardinalis</i>	400
Rainbow Lory	<i>Trichoglossus haematodus</i>	400

Ministry of Natural Resources, Solomon Islands, in litt.,
1 August 1994

SURINAM

Surinam has agreed the following 1994 export quotas:

Reptiles

Anaconda	<i>Eunectes murinus</i>	330
Boa Constrictor	<i>Boa constrictor</i>	1010
Spectacled Caiman	<i>Caiman crocodilus</i>	925
Red-footed Tortoise	<i>Geochelone carbonaria</i>	633
Yellow-footed Tortoise	<i>G. denticulata</i>	692
Yellow-headed Sideneck Tortoise	<i>Podocnemis unifilis</i>	572

Mammals

Red-handed Tamarin	<i>Saguinus midas</i>	100
Squirrel Monkey	<i>Saimiri sciureus</i>	150

Birds

Orange-winged Parrot	<i>Amazona amazonica</i>	3762*
Blue-cheeked Parrot	<i>A. dufresniana</i>	38*
Mealy Parrot	<i>A. farinosa</i>	269*
Yellow-crowned Parrot	<i>A. ochrocephala</i>	164*
Blue-and-yellow Macaw	<i>Ara ararauna</i>	610*
Red-and-green Macaw	<i>A. chloropterus</i>	201*
Red-bellied Macaw	<i>A. manilata</i>	481*
Red-shouldered Macaw	<i>A. nobilis</i>	266*
Chestnut-fronted Macaw	<i>A. severa</i>	261*
Peach-fronted Parakeet	<i>Aratinga aurea</i>	57*
White-eyed Parakeet	<i>A. leucophthalmus</i>	845*
Brown-throated Parakeet	<i>A. pertinax</i>	2759*
Painted Parakeet	<i>Pyrrhura picta</i>	886*
Dusky Parrot	<i>Pionus fuscus</i>	783*
Blue-headed Parrot	<i>P. menstruus</i>	1554*
Caica Parrot	<i>Pionopsitta caica</i>	32
Red-fan Parrot	<i>Deropterus accipitrinus</i>	217*
Green-rumped Parrotlet	<i>Forpus passerinus</i>	4933*
Golden-winged Parakeet	<i>Brotogeris chrysopterus</i>	1252*
Black-headed Parrot	<i>Pionites melanocephala</i>	1439*

* includes residue from 1993 quota

UK Department of the Environment CITES Newsletter No. 11,
August 1994

BURUNDI

The Management Authority of Burundi has informed the CITES Secretariat that its Government has now terminated the suspension of exports of native reptiles.

CITES Secretariat, Notification to the Parties, No. 817, 25 August 1994

JAPAN

With effect from 29 July 1994, the Government of Japan's reservation with respect to the listing in CITES Appendix I of Hawksbill Turtle *Eretmochelys imbricata* was withdrawn.

CITES Secretariat, Notification to the Parties, No. 823, 25 August 1994

TAIWAN

On 27 October 1994, amendment to the Wildlife Conservation Law was passed by the Legislative Yuan of Taiwan. Penalties relating to illegal hunting and wildlife trade infractions have been established at six months' to five years' imprisonment and/or a fine of NT\$300 000 to NT\$1.5 million (US\$12 000 to US\$60 000) with sentences increasing from one to seven years in gaol and/or a fine of NT\$500 000 to NT\$2.5 million for repeat offenders. Species that are protected, endangered or rare, and related products, may not be traded or displayed in public areas without permission of the authorities. Anyone who falsely labels merchandise as containing protected wildlife or derivatives shall be subject to a fine of between NT\$150 000 and NT\$750 000. Private owners of endangered species and/or related derivatives are required to register such possessions with the local authorities or face confiscation of the specimen(s) and a fine.

Council of Agriculture, Executive Yuan,
27 October 1994; Taipei Representative Office
in the United Kingdom

Trade in Agarwood*K. Chakrabarty, A. Kumar and V. Menon*

August 1994. 51pp. US\$10 incl. postage. Published by WWF India/TRAFFIC India. Available from TRAFFIC India, 172-B Lodi Estate, New Delhi-110003, India.

The fragrant fungal infestation that can appear in some specimens of the tree Agarwood *Aquilaria malaccensis* has for centuries been highly prized in the perfume industry for its oil. Further demand for chips of the wood as incense and, to a lesser extent, the bark (as writing paper) and timber (crafted into tea boxes and for inlaying furniture), has led to large-scale felling of the tree in India such that the species is now considered to be rare throughout much of its range in that country. With the decline of supplies in India, increased harvesting pressure appears to have been placed on the species in Southeast Asia.

This report documents the distribution of Agarwood, its status, the trade practices in Assam, and the flourishing market in Agarwood derivatives in the Middle East. It offers recommendations for a sustainable legal trade, while ensuring the survival of this tree in the wild.

A proposal to include this species in CITES Appendix II will be presented by India at the ninth meeting of the Conference of the Parties.

CITES and the Regulation of Wildlife Trade for European Circus*Elizabeth H. Fleming*

September 1994. 40pp. Price: BFr.250 (US\$8)
Published by and available from TRAFFIC Europe, Chaussée de Waterloo 608, 1060 Brussels, Belgium.

This report highlights the special difficulties of enforcing wildlife trade regulations with respect to European circuses. Although internationally agreed resolutions exist for the control of trade in circus animals, these are unobserved in many cases, as a variety of case studies in the report's annex document.

Tigers in the Wild. A WWF Status Report*Peter Jackson and Elizabeth Kempf*

September 1994. 20pp. Published by WWF International. Limited copies are available free of charge from WWF International, CH-1196, Gland, Switzerland.

A concise history of the status of the Tiger throughout the 14 range states and an account of the threats that now jeopardize the animal's survival. The report documents the conservation work currently being undertaken by WWF and others in an attempt to reverse the decline of Tiger populations.

TRAFFIC has recently published the following *Species in Danger* reports which, except where specified, are available from TRAFFIC International.

Prescription for Extinction: Endangered Species and Patented Oriental Medicines in Trade*Kurt A. Johnson and Andrea L. Gaski*

May 1994. 300pp. US\$30.00 + US\$2 postage. Available from TRAFFIC USA, 1250 24th Street, NW, Washington, DC 20037, USA

The product of extensive research initiated in the late 1980s, this report is an important reference work on patented Oriental medicines, and an analysis of their use of endangered species of wildlife, in particular.

International Trade in Reptile Skins: a Review and Analysis of the Main Consumer Markets, 1983-1991*Compiled and edited by Martin Jenkins and Steven Broad*

August 1994. 68pp. £5 (US\$10)

This report describes and evaluates the present-day international trade in reptile skins. A review of the main taxa in trade is followed by an analysis of the main consumer markets, the problem of illegal trade, and a discussion of the conservation implications and future of the trade.

Hard Times for Hardwood: Indigenous Timber and the Timber Trade in Kenya*Nina T. Marshall and Martin Jenkins*

August 1994. 53pp. £5 (US\$10)

In Kenya, rising demand for hardwood has led to illegal harvest and over-exploitation of some species and areas. This report documents the extent and dynamics of the Kenyan trade in hardwoods and suggests solutions of international relevance in recommending the identification of alternative timber sources and development of sustainable supplies.

Killed for a Cure: a Review of the Worldwide Trade in Tiger Bone*Judy A. Mills and Peter Jackson*

August 1994. 52pp. £5 (US\$10)

A focus on the use of Tiger bone as a medicinal, this review compiles what is known of the status of Tiger populations, the uses and value of Tiger bone, the extent to which it is traded globally, and offers recommendations for Tiger conservation based on the report's findings.

Criteria for Amendment of CITES Appendices I and II

A Summary of the Position Statement of IUCN-The World Conservation Union, WWF-The World Wide Fund for Nature and TRAFFIC

Perhaps the most fundamental issue to be discussed at the ninth meeting of the Conference of the Parties to CITES in Fort Lauderdale, 7 to 18 November 1994, will be proposed new criteria for listing species in the CITES Appendices. IUCN, WWF and TRAFFIC have for a long time been aware of the need for greater objectivity in the listing process and have therefore been strongly supportive of the need to develop new criteria. A validation exercise of draft CITES criteria against selected plant taxa was examined in *TRAFFIC Bulletin* 14(3).

In June 1994, a draft resolution of the Conference of the Parties, (Annex 3 of Document Doc. 9.41), "Criteria for Amendment of Appendices I and II", was issued by the CITES Secretariat and will be considered at the forthcoming CITES Conference. It is on this version of the draft resolution that IUCN, WWF and TRAFFIC have based their position statement, which is summarized below.

PROBLEMS WITH THE BERNE CRITERIA

At the first meeting of the Conference of the Parties to CITES, in 1976, a set of guidelines which became known as the Berne Criteria was adopted to help the Parties make decisions to change the listing of species in Appendices I and II. Since 1976, there have been enormous advances in the understanding of processes involved in extinction, and the effects of both sustainable and non-sustainable harvesting techniques, revealing serious inadequacies with the Berne Criteria. The lack of definitions of terms used and subsequent subjective interpretation of the criteria, has very often led to difficulty in assessing the merits or demerits of individual listing proposals. Moreover, the Berne Criteria have proved impracticable at times, for example requiring evidence of population recovery before downlisting can take place, which is impossible to provide if the status of the population was not known at the time of listing.

The eighth meeting of the Conference of the Parties was unquestionably correct to agree that the Berne Criteria "do not provide an adequate basis for amending the Appendices" (Conf. 8.20).

MERITS OF THE PROPOSED NEW CRITERIA

Although the proposed new listing criteria set out in Document Doc. 9.41 still need amendment, they nonetheless represent a remarkable step forward. If the changes recommended by IUCN, WWF and TRAFFIC are adopted, the new criteria would:

- facilitate listing based on conservation merit;
- be objective and based on quantitative guidelines, without reducing the listing process to a purely mechanical operation;
- be sufficiently precautionary to prevent any downlisting or delisting likely to damage the conservation status of a species;
- reduce the number of unnecessary listings that add a needless administrative burden to the implementation of the Convention;
- be practical and easy to follow, without compromising scientific accuracy;
- test poor decisions, and expose vested interests at play;
- clarify the nature of disagreements surrounding listing decisions, thus making it easier to resolve such disagreements.

It is fundamentally important that the listing process be as objective as possible, so that

- the most threatened species, which are actually or potentially affected by trade, may be listed;
- sustainable-use options, where appropriate, may be permissible for non-threatened species;
- the listing process is lucid and unequivocal and that any issues of disagreement be clearly understood;
- the standards by which different species are listed are more or less equivalent, thereby allowing exposure of blatantly political decisions in the listing process, in turn reducing the risk of pressure from groups with vested interests to give lower protection to certain species with high economic value;
- the CITES Appendices are authoritative and respected.

It is also essential that the criteria have a quantitative element, at least in the biological criteria for Appendix I-listing. Without quantitative guidelines, the criteria will be based on undefined terms likely to repeat the confusion, circular logic and vagueness experienced under the Berne Criteria. The new quantitative criteria¹ allow a choice of options without being so flexible as to allow abuse by groups with vested interests.

The criteria have been designed to be workable in practice, both by developing and developed countries. They do not require collection of any type of data which was not already required under the Berne Criteria. Instead, the new criteria provide a means of using what little information may be available to best effect. Tests of hundreds of species against the criteria carried out by IUCN have shown that the system is easy to use and applies appropriately to all groups of species.

In general, IUCN, WWF and TRAFFIC feel that the proposed new criteria achieve the difficult balance between objectivity and scientific rigour on the one hand and flexibility and practicality on the other.

SUGGESTED IMPROVEMENTS TO THE CRITERIA

Notably, the changes recommended by IUCN, WWF and TRAFFIC include:

- provision to allow the listing of species which resemble Appendix I species in that Appendix when this is important for conservation reasons;
- refinement of the biological criteria for Appendix I-listing, including the incorporation of selected suggestions submitted by the USA²;
- alteration to the wording of the criteria for Appendix II-listing to minimize ambiguity;
- clarification of the precautionary measures, in particular to ensure safeguarding species downlisted from Appendix I, if they should no longer meet the basic criteria for inclusion in that Appendix;
- improvement of the definitions of some of the terms used.

¹ Further consideration of the quantitative values for the biological criteria for Appendix I-listing, in particular, by IUCN and the Animals and Plants Committees has resulted in a well-balanced approach. The resultant revised biological criteria (included in Doc. 9.41 as Annex 1 of Annex 4) do not act as inflexible thresholds but rather as guidelines. This revised text is expected to provide the basis for discussion at the next meeting of the Conference of the Parties.

² Useful comments on the proposed new listing criteria, including a clearer formulation of those for Appendix II-listing, have been suggested by the Government of the USA. IUCN, WWF and TRAFFIC recommend that these be considered during revisions to be made during the upcoming meeting of the Conference of the Parties but are concerned about the absence of any quantitative guidelines in the criteria put forward by the USA and the fact that they are excessively convoluted and would be very difficult to apply in practice since none of the terms used is clearly defined.

THE EFFECTS OF THE CRITERIA ON SPECIES LISTINGS

If the changes recommended by IUCN, WWF and TRAFFIC are applied to the new criteria, it is unlikely to result in a massive trend for downlisting or uplisting between Appendix I and Appendix II. "High profile" species (elephants, chimpanzees, rhinoceroses, whales, etc.) already in Appendix I will continue to satisfy the criteria for such a listing. Other species, for example, Black-winged Lories *Eos cyanogenia*, Wood Turtles *Clemmys insculpta*, and Manus Green Tree Snails *Papustyla pulcherrima*, may qualify for uplisting to Appendix I under the new criteria. No species could be downlisted from Appendix I without checks to ensure that resumption in its trade would not be detrimental to its survival.

CONCLUSION

IUCN, WWF and TRAFFIC believe that there is adequate scope for addressing their proposed changes during the course of the ninth meeting of the Conference of the Parties. It is however recognized that sufficient time for debate and a commitment to objectivity, as far as possible, will be crucial to successful negotiation of the desired amendments.

	Proposal	Proponent
Brown Hyaena		
<i>Hyaena brunnea</i>	App. I-II	CH
Leopard Cat (excl. CN pop.)		
<i>Felis bengalensis bengalensis</i>	App. I-II	CH
African Elephant (ZA pop.)		
<i>Loxodonta africana</i>	App. I-II	ZA
African Elephant (SD pop.)		
<i>Loxodonta africana</i>	App. I-II ²	SD
White Rhinoceros (ZA pop.)		
<i>Ceratotherium simum simum</i>	App. I-II	ZA
Hippopotamus		
<i>Hippopotamus amphibius</i>	incl. App. II	BJ/BE/FR
Vicuña (PE pop.)		
<i>Vicugna vicugna</i>	App. I-II ³	PE
Vicuña (CL pop.)		
<i>Vicugna vicugna</i>	Amend annotation ⁴	CL
Giant Muntjac		
<i>Megamuntiacus vuquangensis</i>	incl. App. I	VN
Vu Quang Ox		
<i>Pseudoryx nghetinhensis</i>	incl. App. I	DK
Saiga Antelope		
<i>Saiga tatarica</i>	incl. App. II	US
Saiga Antelope (MN pop.)		
<i>Saiga tatarica</i>	incl. App. I	US
AVES		
Kiwis		
<i>Apteryx</i> spp.	incl. App. I	NZ
Auckland Island Teal		
<i>Anas aucklandica</i>	App. II-I	NZ
Brown Teal		
<i>Anas chlorotis</i>	App. II-I	NZ
Campbell Island Teal		
<i>Anas nesiotis</i>	Change listing	NZ
Udzungwa Forest Partridge		
<i>Xenoperdix udzungwensis</i>	incl. App. I	DK
Black Crowned-crane		
<i>Balearica pavonina</i>	App. II-I	NL
Tanimbar Corella		
<i>Cacatua goffini</i>	App. I-II	ID
Orange-fronted Parakeet		
<i>Cyanoramphus malherbi</i>	incl. App. I	NZ
Red-fronted Parakeet		
<i>Cyanoramphus novaezelandiae</i>	App. I-II	NZ
Red-and-blue Lory		
<i>Eos histrio</i>	App. II-I	ID
African Grey Parrot (Sao Tomé/Príncipe pop.)		
<i>Psittacus erithacus</i>	incl. App. I	GB
OR		
African Grey Parrot		
<i>Psittacus erithacus princeps</i>	App. I-II	GB
Turacos, Plantain-eaters, Go-away Birds		
Musophagidae spp.	incl. App. II	NL
Swiftlets		
<i>Collocalia</i> spp.	incl. App. II	IT
Saffron-cowled Blackbird		
<i>Agelaius flavus</i>	incl. App. I	UY

REPTILIA

	Proposal	Proponent
Box Turtles		
<i>Terrapene</i> spp. (except <i>T. coahuila</i>)	incl. App. II	NL/US
Egyptian Tortoise		
<i>Testudo kleinmanni</i>	App. II-I	EG
Indian Flap-shell Turtle		
<i>Lissemys punctata</i>	incl. App. II	CH
Indian Flap-shell Turtle		
<i>Lissemys punctata punctata</i>	App. I-II	CH
Nile Crocodile (TZ pop.)		
<i>Crocodylus niloticus</i>	App. II ⁵	TZ
Estuarine Crocodile (AU pop.)		
<i>Crocodylus porosus</i> App. II ⁶	AU	
Tuataras		
<i>Sphenodon</i> spp.	incl. App. I	NZ
<i>Phymaturus flagellifer</i>	incl. App. II	CL
<i>Pristidactylus alvaroi</i>	incl. App. II	CL
<i>Pristidactylus torquatus</i>	incl. App. II	CL
<i>Pristidactylus valeriae</i>	incl. App. II	CL
<i>Pristidactylus volcanensis</i>	incl. App. II	CL
Chilean Dwarf Tegu		
<i>Callopietes palluma</i>	incl. App. II	CL
Indian Monitor (BD pop.)		
<i>Varanus bengalensis</i>	App. I-II ²	BD
Yellow Monitor (BD pop.)		
<i>Varanus flavescens</i>	App. I-II ²	BD

AMPHIBIA

	Proposal	Proponent
Golden Toad		
<i>Bufo perigrines</i>	incl. App. I	NL
Golden Mantella		
<i>Mantella aurantiaca</i>	incl. App. I	NL
Golden Mantella		
<i>Mantella aurantiaca</i>	incl. App. II	DE

INSECTA

	Proposal	Proponent
Cape Stag Beetles		
<i>Colophon</i> spp.	incl. App. I	NL/ZA

ARACHNIDA

	Proposal	Proponent
Emperor Scorpion		
<i>Pandinus dictator</i>	incl. App. II	GH
Emperor Scorpion		
<i>Pandinus gambiensis</i>	incl. App. II	GH
Emperor Scorpion		
<i>Pandinus imperator</i>	incl. App. II	GH
Tarantulas		
<i>Brachypelma (Euathlus) spp.</i>	incl. App. II	US

MOLLUSCA

	Proposal	Proponent
Flax Snails (NZ pops.)		
<i>Placostylus</i> spp.	incl. App. II	NZ
Paryphantas (NZ pops.)		
<i>Powelliphanta</i> spp.	incl. App. II	NZ
Giant Triton		
<i>Charonia tritonis</i>	incl. App. II	AU

continued...

CITES FILE

FLORA

Replacement of annotations #1b), #2b) #4b), #6b), #7b) No. 70, 201 and 504 by: "seedlings or tissue cultures obtained *in vitro* in sterile culture media, either liquid or solid, transported in containers commonly used for this type of culture, with different shapes and made of different materials".

	Proposal	Proponent
<i>Pachypodium ambongense</i>	App. II-I	MG/CH
<i>Pachypodium brevicaulle</i>	App. I-II	MG/CH
New Zealand Wood Rose Parasite		
<i>Dactylanthus taylorii</i>	incl. App. II	NZ
<i>Berberis aristata</i>	incl. App. II	IN
Mun Ebony		
<i>Diospyrus mun</i>	incl. App. II	DE
<i>Euphorbia cremersii</i>	App. II-I	MG/CH
<i>Euphorbia primulifolia</i>	App. I-II	MG/CH
Indian Gentian		
<i>Gentiana kurroo</i>	incl. App. II	IN
African Blackwood, Mpingo		
<i>Dalbergia melanoxylon</i>	incl. App. II	KE
Red Sanders		
<i>Peterocarpus santalinus</i>	incl. App. II	IN
<i>Aloe albiflora</i>	App. II-I	MG/CH
<i>Aloe alfredii</i>	App. II-I	MG/CH
<i>Aloe bakeri</i>	App. II-I	MG/CH
<i>Aloe bellatula</i>	App. II-I	MG/CH
<i>Aloe calcairophila</i>	App. II-I	MG/CH
<i>Aloe compressa</i>	App. II-I	MG/CH
<i>Aloe delphinensis</i>	App. II-I	MG/CH
<i>Aloe descoingsii</i>	App. II-I	MG/CH
<i>Aloe fragilis</i>	App. II-I	MG/CH
<i>Aloe haworthioides</i>	App. II-I	MG/CH
<i>Aloe helenae</i>	App. II-I	MG/CH
<i>Aloe laeta</i>	App. II-I	MG/CH
<i>Aloe parallelifolia</i>	App. II-I	MG/CH
<i>Aloe parvula</i>	App. II-I	MG/CH
<i>Aloe rauhii</i>	App. II-I	MG/CH
<i>Aloe suzannae</i>	App. II-I	MG/CH
<i>Aloe versicolor</i>	App. II-I	MG/CH
<i>Colchicum luteum</i>	incl. App. II	IN
African Mahogany		
<i>Entandrophragma</i> spp.	incl. App. II	DE
Khaya, African Mahogany		
<i>Khaya</i> spp.	incl. App. II	DE
Big Leaf Mahogany		
<i>Swietenia</i> spp.	incl. App. II ⁷	NL
Lady's Slipper Orchid		
<i>Cypripedium cordigerum</i>	App. II-I	IN
Lady's Slipper Orchid		
<i>Cypripedium elegans</i>	App. II-I	IN
Lady's Slipper Orchid		
<i>Cypripedium himalaicum</i>	App. II-I	IN
Lady's Slipper Orchid		
<i>Cypripedium tibeticum</i>	App. II-I	IN
<i>Dendrobium cruentum</i>	App. II-I	TH
Himalayan Rhubarb		
<i>Rheum australe</i>	incl. App. II	IN

Proposal Proponent

Indian Aconite		
<i>Aconitum deinorrhizum</i>	incl. App. II	IN
<i>Aconitum ferox</i>	incl. App. II	IN
<i>Aconitum heterophyllum</i>	incl. App. II	IN
<i>Coptis teeta</i>	incl. App. II	IN
African Stinkwood		
<i>Prunus africana</i>	incl. App. II	KE
<i>Picrorhiza kurrooa</i>	incl. App. II	IN
Himalayan Yew		
<i>Taxus wallichiana</i>	incl. App. II	IN
Agarwood		
<i>Aquilaria malaccensis</i>	incl. App. II	IN
Spikenard		
<i>Nardostachys grandiflora</i>	incl. App. II	IN

NOTES

- Amendment of annotation +201 to 5XX: specimens of domesticated chinchillas are exempt from the provisions of CITES.
- To export stockpile of tusks (*Loxodonta*) or skins (*Varanus*).
- For the purpose of sustainable use.
- Amendment of Annotation 502 in order to allow export of vicuña wool for manufacture into cloth.
- Pursuant to Resolution Conf. 7.14, i.e. with an export quota.
- Pursuant to Resolution Conf. 1.2.
- To include neotropic populations and natural hybrids with *S. mahagoni* and *S. humilis* in Appendix II, and to amend listing in Appendix II to *Swietenia* spp.

COUNTRY CODES

AU - Australia	KE - Kenya
BD - Bangladesh	MG - Madagascar
BE - Belgium	MN - Mongolia
BJ - Benin	MX - Mexico
CH - Switzerland	NL - Netherlands
CL - Chile	NO - Norway
DE - Germany	NZ - New Zealand
DK - Denmark	PE - Peru
EC - Ecuador	PH - Philippines
EG - Egypt	SD - Sudan
FR - France	TH - Thailand
GB - United Kingdom	TZ - Tanzania
GH - Ghana	US - United States of America
ID - Indonesia	UY - Uruguay
IN - India	VN - Viet Nam
IT - Italy	ZA - South Africa

Recent Information on the Status and Utilization of African Pangolins

Amie Bräutigam, John Howes,
Tamsin Humphreys and Jonathan Hutton

Since 1985, CITES has been concerned with the question of the status of Asian pangolins of the genus *Manis*, and the effects of utilization and commercial trade on their conservation. Much less attention has been focused on utilization of the four African con-specifics and its significance for their conservation. In response to concerns that the sources of supply of pangolins for Asian import markets might be shifting to Africa, the IUCN/SSC Trade Specialist Group¹ undertook a review of available information on the status and utilization of these species in order to elucidate the situation. Information was provided largely from two sources: by members of the IUCN/SSC Pangolin Specialist Group, and African CITES Scientific Authorities responding to a 1993 CITES Animals Committee questionnaire survey. There is little available information on international trade in the African species, presumably a consequence of their status under CITES², but knowledge obtained on utilization at national levels indicates certain similarities in use in Africa and Asia. Information on the biological status of all pangolin species is unconsolidated.

BACKGROUND

Covered in an armour of overlapping scales, pangolins are largely nocturnal mammals, adapted to a specialized diet of ants and termites. They have the unusual defensive posture of curling up into a tight ball. Of the seven species, three are Asian and four African.

Throughout Asia, pangolins have been traditionally utilized and traded, both for food and medicinal purposes (Corrigan and Inskipp, 1992). International trade appears to have focused primarily on the Malayan Pangolin *Manis javanica*. Pangolin scales are believed to possess medicinal properties effective in treating toxicosis, inflammation, scabies, rheumatic pain, and in promoting blood circulation and soothing aches and pains; the scales are often administered in the form of scale ash or as slices after being soaked in vinegar or oil and then roasted with hot sand. Scales are also used as an auxiliary

agent in other pharmaceutical compounds. Nash (1992) reported that Vietnamese pharmacists indicate that both European and Asian buyers are increasingly interested in obtaining pangolin scales, supposedly as a cure for breast cancer.

Taiwan was a major importer of pangolin scales during the 1980s (Anon., 1993a), but all pangolin species are now protected under the 1989 *Wildlife Conservation Law*, which prohibits all international and domestic trade in these animals. Pangolins also have protected status in several of the main importer and exporter countries, although trade continues.

South Korea (the Republic of Korea) remains the only country for which official statistics are available for imports of pangolin scales. In 1992, these totalled in excess of 11 t, the major exporters being recorded as China (7076 kg), Indonesia (1850 kg), Malaya [sic] (1000 kg), and Viet Nam (1026 kg). The total declared importation value was *circa* US\$19/kg. Other importers in recent years (accounting for 16.5 t in 1991) were China, Singapore, and Thailand.

Fewer data are available to assess the status and utilization of African species of pangolins, but it is known that the animals are killed in large numbers throughout Africa, both for their scales and meat (Anon., 1992). It is hoped that this review will contribute to greater awareness of the use of African pangolins, the international trade in these species, and indicate the need to evaluate courses of action to ensure their conservation.

DISTRIBUTION OF AFRICAN PANGOLINS

Two of the four African species of pangolins are arboreal, while two are ground-dwelling. Each occupies a somewhat different habitat and ecological niche. The ground pangolins live in burrows dug either by themselves or by other animals. In Africa, they are Giant Ground Pangolin *Manis gigantea* and Cape Pangolin or Temminck's Ground Pangolin *Manis temminckii*. The arboreal pangolins find shelter in hollow trees, the African species being the Long-tailed or Black-bellied Pangolin *Manis tetradactyla* and White-bellied or Three-cusped Pangolin *Manis tricuspis*.

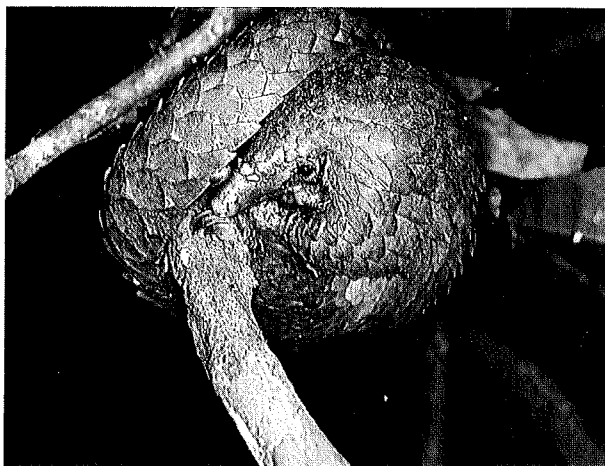


Cape Pangolin *Manis temminckii*

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¹ Now the Cambridge office of the IUCN Species Survival Commission.

² Cape Pangolin *Manis temminckii* is listed in CITES Appendix I; Giant Ground Pangolin *Manis gigantea*, Long-tailed Pangolin *Manis tetradactyla* and White-bellied Pangolin *Manis tricuspis* are listed in Appendix III by Ghana.



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White-bellied Pangolins *Manis tricuspis*



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The Giant Ground Pangolin occurs in western and central Africa, from Senegal to central Gabon and Angola, east to northeastern Zaire, Uganda and Rwanda; its range may extend to western Kenya and Tanzania (Dorst and Dandelot, 1972). The species typically inhabits forests and savannas close to forests, in areas of good rainfall and high humidity not characterized by a long dry season. Swamps and moist river valleys are favourite areas in treeless grasslands, hills and at lower mountain altitudes (Mohr, 1961).

The Cape Pangolin is widely distributed in southern and eastern Africa, from South Africa, north through the savanna zone to Angola in the west, and possibly to Chad, southern Sudan, Kenya, Ethiopia and perhaps Somalia, to the east (Dorst and Dandelot, 1972). This is the only pangolin species found in southern Africa, where it inhabits dry bush country, particularly areas with light sandy soil.

The Long-tailed Pangolin occupies rainforests, particularly flooded forests, in the equatorial belt ranging from Senegal to northeastern Zaire, the extreme west of Uganda, and south-west to southwestern Angola, while the White-bellied Pangolin inhabits plantations and rainforests, particularly secondary forest, where ants and termites are common. The White-bellied Pangolin is the commonest pangolin of rainforest regions (Meester and Setzer, 1971). It is a lowland species and ranges from

Senegal southward to southwestern Angola, eastward to northeastern Zaire, Uganda, western Kenya, northwestern Zambia, and possibly northern Mozambique (Anon., 1993b). *Manis tricuspis tricuspis* is found throughout the range of the White-bellied Pangolin except in Uganda where it is replaced by *M. t. mabirae*.

BIOLOGICAL STATUS

As a result of their shy and solitary nature and nocturnal habits, pangolins are rarely encountered by humans. The burrowing species are particularly difficult to locate owing to the fact that burrows usually reach a depth of several metres. A further factor complicating evaluation of the biology and ecology of these species may be rotation of burrow use, which has been documented for two of the species. Cape Pangolins in South Africa are reported to use up to ten burrows within an individual range, occupying each for one to two weeks at a time; a similar phenomenon has been observed for the Chinese Pangolin *Manis pentadactyla* (Goodyear and Li, 1993).

It is believed that pangolins are capable of breeding throughout the year, although this may be seasonally influenced in southern Africa, where Richardson (*in litt.*, 1994) suggests Cape Pangolins breed throughout the summer and produce young in October and November; parturition has been observed in December in southwestern Nigeria. Newton (*in litt.*, 1992) states that reproductive rates for the Cape Pangolin are low with only one young produced - rarely two (Nowak and Paradiso, 1983). A gestation period of 139 days was recorded by Van Ee (1978) in a captive female Cape Pangolin. Very little is known regarding the longevity of these species in the wild; one adult female Cape Pangolin radio-tagged in 1991 is still alive (Richardson, *in litt.*, 1994). In captivity Long-tailed and White-bellied Pangolins have lived for three years and Giant Ground Pangolins for four years.

CONSERVATION AND LEGAL STATUS OF THE TRADE OF AFRICAN PANGOLINS

None of the seven pangolin species is listed as Threatened by IUCN (Groombridge, 1993). The three Asian species are included in CITES Appendix II and have been a focus of concern in the context of the CITES Significant Trade Project³, as their biology, conservation status, and the extent to which they are utilized are too little known to determine the effect of international trade on populations.

Of the African species, the Cape Pangolin is the most studied and also of most conservation concern. Considered very rare in South Africa (Anon., 1978; Richardson, *in litt.*, 1991) and believed to be declining in most parts

³The Significant Trade Project was established to identify CITES Appendix II species that are subject to trade that may be detrimental to their survival.

of its range (Burton and Pearson, 1987), it is listed as Vulnerable in the South African Red Data Book (Smithers, 1986), and as Vulnerable in Namibia (Griffin, *in litt.*, 1994). In addition, it is listed as Endangered under the US *Endangered Species Act* and is in Appendix I of CITES.

The species is protected in some form throughout most of its range, legally so in 16 range states, of which 12 prohibit or regulate possession and/or national and international trade (Anon., 1986).

Of the three western African species, the White-bellied Pangolin is generally considered to be the most common (Meester and Setzer, 1971), although is believed to be declining in Ghana (Ankudey, *in litt.*, 1993) and Guinea (Satenin, *in litt.*, 1993) and close to extinction in Rwanda (Uwilingiyimana, *in litt.*, 1993). Giant Ground and Long-tailed Pangolins are believed to be quite rare (Hoyt, *in litt.*, 1992) and both species are thought to be declining throughout their ranges, Giant Ground Pangolin being extinct in Rwanda (Uwilingiyimana, *in litt.*, 1993) and Niger (Sessou, *in litt.*, 1993). Sodeinde and Adedipe (1994) concluded on the basis of bushmeat market surveys in southwestern Nigeria that Long-tailed and Giant Ground Pangolins have been extirpated from that region, while populations of White-bellied Pangolins are in decline.

All three western African species are protected in Nigeria under Schedule 1 of *Decree No. 11: Control of International Trade in Endangered Wild Fauna and Flora* (Sodeinde and Adedipe, 1994) and are totally protected in seven range states, where possession and/or national and international trade are prohibited or regulated (Anon., 1986). These three species are listed in Appendix III of CITES, for Ghana only. In addition, specific protective legislation with similar possession and trade laws as outlined above, occurs in seven other range states for White-bellied and Long-tailed Pangolins and in 13 range states for Giant Ground Pangolin (Anon., 1986).

All four African pangolin species are listed in Class B of the 1986 African Convention on Nature and Natural Resources.

No specific protection status is given to pangolins in Gabon, Gambia, Malawi, Mauritania, and Niger (although hunting is prohibited).

Sodeinde and Adedipe (1994) suggest that all pangolin species are susceptible to extinction (based on factors such as their taxonomic uniqueness, habitat and prey requirements, reproductive rates, population distribution, degree of habitat alteration, levels of hunting pressure, and economic/medicinal value). In southwestern Nigeria, the main factors responsible for the species' high susceptibility to extinction appear to be heavy hunting pressure and habitat alteration/destruction, although little is known of the habitat requirements of any African pangolin species. Sodeinde and Adedipe (1994) found few relict patches of forest remaining in Ogun State, southwestern Nigeria, and those protected as forest reserves appeared to be most popular for pangolin

hunting. Indeed, in most range states forested habitats, in particular, are likely to be declining, and this may specifically affect populations of the arboreal species. However, in south-west Nigeria, it was frequently reported to Sodeinde and Adedipe (1994) that pangolins were caught in abandoned or little-used oil palm plantations amongst secondary forest, suggesting a capacity to adapt to altered habitats.

In addition to the factors already mentioned, the Cape Pangolin is believed to be vulnerable owing to the effects of pesticide poisoning (Van Ee, 1978; Cunningham and Zondi, 1991) and to electrocution on the lower wire of game farm fences (Anderson and Erasmus, *in litt.*, 1993).

UTILIZATION AND TRADE

Although data on the exploitation of the African species are fewer than for Asian species, those which are available point to the popularity of pangolins in different parts of Africa for both food and traditional medicine (*muti* or *juju*) (Table 1). Coulson (1989) conducted a survey in Zimbabwe and documented 33 pangolin killings. Of these, 26 (79%) were deliberate: 19 were poachings for food, six were presentations to tribal chiefs for slaughter and one was killed by traditional healers.

Use in traditional medicines and rituals

The definition of traditional medicine in this context includes both that which is used as a medicine *per se* (i.e., to be consumed, inhaled or applied), and that used as a charm or talisman (e.g., a scale pendant around the neck used to prevent malaria, or scales used to induce rains). In addition, pangolins are widely believed to have other magical properties, including the ability to converse with tribal chiefs, which was reported from Mozambique, for example. It is also believed that bad luck ensues if pangolin blood is spilt in a village; hence pangolins are slaughtered over receptacles to prevent this. Smoke from burning pangolin scales is believed to repel Lions and improve the health of cattle.

In an extensive survey of the literature and of medicinal markets throughout southern Africa, Cunningham and Zondi (1991) found that the use of animal parts and derivatives for traditional medicine was not only generally "dynamic" but also quite "homogeneous" in the use of certain species parts and derivatives. Further, they found that pangolins were among the species most consistently used for traditional medicine throughout Africa. They concluded that, in South Africa, over-exploitation of Cape Pangolin for medicinal use was occurring, and that this exploitation was increasingly focused on core conservation areas. In addition, they considered this species vulnerable to other threats, such as habitat loss and use of insecticides, and identified the species as being one of the highest conservation priorities in South Africa.

Range State	Reported uses	References
Botswana Cape Pangolin*	Illegally used as a traditional medicine to cure persistent nose bleeding. Smoke from burning scales used to improve the health of cattle.	Masuky, <i>in litt.</i> , 1993 Anon., 1993; Kingdon, 1974
Chad 2 species	Local consumption for food. Used as medicine against malaria.	Daboulaye, <i>in litt.</i> , 1993
Ethiopia Cape Pangolin	Scales used as "spoons" by chiefs of Agnuak tribe in Gambella.	Rombaye, <i>in litt.</i> , 1993
Ghana 3 species	Scales burnt by some tribes to keep away evil spirits and also for use in soup.	Ankudey, <i>in litt.</i> , 1993
Guinea 3 species	Multiple uses as food and traditional medicines.	Sagnan Satenin <i>in litt.</i> , 1993
Malawi Cape Pangolin	Scales used as a medicine for good luck. Live pangolins are a sign of good rains.	Mkanda, <i>in litt.</i> , 1993
Mozambique Cape Pangolin	Scales used as medicine to bring good luck. Live pangolins are a sign of either famine or abundance and can converse with tribal chiefs.	Mahanjane, <i>in litt.</i> , 1993
Namibia Cape Pangolin	Used in rain-making and as a popular magical charm. A popular food delicacy.	Griffin, <i>in litt.</i> , 1993 and 1994
Niger Giant Ground Pangolin	Uncontrolled exploitation for traditional medicine.	Sessou, <i>in litt.</i> , 1993
Nigeria 3 species	Used as food, medicine, as a source of income. Most valuable as medicine.	Sodeinde and Adedipe, 1994
South Africa Cape Pangolin	Used as food, but unpopular owing to its fattiness. Used as a medicine to prevent nosebleeds and rheumatism. Also used as a "love potion".	Newton, <i>in litt.</i> , 1994 Richardson, <i>in litt.</i> , 1994
Tanzania 2 species	Scales used in rain-making and against nose-bleeding.	Kingdon, 1974
Uganda 4 species	Smoke from burning scales used to ward off Lions in Acholi.	Kingdon, 1974
Zimbabwe Cape Pangolin	Presented to chiefs/kings for reward. Various body parts have medicinal or magical properties and the flesh is regarded as a delicacy. Thought to bring rains.	Anon., 1992 Newton, <i>in litt.</i> , 1992

Table 1. Uses of pangolins in Africa.

Sources: Respondents to CITES Animals Committee questionnaire, and other sources.

* Identification of Cape Pangolin may also refer to other species within range.



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Pangolin scales are prized in Asia and Africa for their purported medicinal properties.

In Namibia, where Cape Pangolin scales are linked with ritualistic uses such as rain-making and are worn as magical charms (Griffin, *in litt.*, 1993), a recent apparent escalation of capture and trade in pangolins prompted a public statement of concern by the country's Acting Permanent Secretary of Wildlife, Conservation and Tourism (see *TRAFFIC Bulletin* 14(1):6). Although there is no open market in the country, there is some evidence of specimens' being exported illegally to Zimbabwe, Zambia, and South Africa. In addition, recent reports of high prices for pangolins in Namibia has stimulated trade between southern Angola and northern Namibia (Griffin, *in litt.*, 1994).

In southwestern Nigeria, recent research by Sodeinde and Adedipe (1994) has highlighted the economic importance of pangolins for use in traditional medicine or *juju* (despite legislation prohibiting hunting of these species). White-bellied Pangolin is almost exclusively the species involved (Long-tailed Pangolin being much rarer). Sodeinde and Adedipe report that medicinal use appears to be more important than that for food. Following market surveys and interviews with hunters, they recorded that pangolin scales and other parts were worn as charms and ornaments and also processed into medicinal compounds, whilst the flesh is eaten and also

used for *juju*. Pangolins are usually provided live to the markets by hunters, forest reserve workers, employees of timber dealers, and secondary buyers. An average of 24 animals was estimated as being supplied each month to the markets in Ogun state, with a total of 142 recorded between November 1988 and April 1989. In the Omo Forest Reserve results indicate that of those mammals hunted regularly, the White-bellied Pangolin was the least abundantly caught (Table 2).

Many of the reported medicinal properties of pangolin parts are based on the use of scales and their derivatives; consequently the value of scales (as opposed to meat) appears to be very high. In 1993, in Pretoria, South Africa, the scales of Cape Pangolin were being sold at *circa* US\$15 each (Newton and Mulliken, *in litt.*, 1993) and in Namibia live pangolins were valued at US\$150 (Griffin, *in litt.*, 1993).

Use as bushmeat

Use of pangolin meat for food has also been widely recorded throughout Africa. Several long-term studies into trade and use of bushmeat have recently given some indication as to how important pangolin meat is in the local bushmeat market, particularly in relation to other species commonly utilized for food.

In Nigeria, Anadu *et al.* (1988) identified Long-tailed and White-bellied Pangolins as the second-most expensive bushmeat, selling in 1982 for 7.55 Niara (US\$4.72 in 1982) a kg. In contrast to these findings, Colyn *et al.* (1987) reported, on the basis of their bushmeat market surveys in Zaire, that pangolins figured among the least frequently captured groups of animals for bushmeat, representing only 1.7% of the total number of species recorded. They attributed this both to the animals' elusive nature and to the fact that, in some areas in Zaire, consumption of pangolins is considered a taboo, the result being that they are rarely sold outside villages. They estimated that consumption of pangolins is much higher in rural areas (*circa* 21% of the bushmeat diet, as opposed to 3.3% in urban centres). The results of their observations over the period September 1980 to January 1984 are shown in Table 3.

Species	Capture frequency (%)	Total catch	Average catch per hunting trip		
			per collection centre	per hunter	
Bushbuck	<i>Tragelaphus scriptus</i>	17	348	5.80	0.39
Maxwell's Duiker	<i>Cephalophus maxwelli</i>	17	356	5.93	0.40
Red-flanked Duiker	<i>C. rufilatus</i>	14	171	2.85	0.19
Grasscutter	<i>Thryonomys swinderianus</i>	13	243	4.05	0.27
B-tailed Porcupine	<i>Atherurus africanus</i>	13	118	1.97	0.13
White-bellied Pangolin	<i>Manis tricuspis</i>	11	110	1.83	0.12

Table 2. Frequency of capture and other indices of abundance of pangolins and other mammals caught in the Omo Forest Reserve, southwestern Nigeria, by hunters in the Omo area, February-July 1990. Source: adapted from Sodeinde and Adedipe, 1994.

Species	Enano	Ubito	Total no. observed
Giant Ground Pangolin <i>Manis gigantea</i>	9	1	10
Long-tailed Pangolin <i>Manis tetradactyla</i>	2	1	3
White-bellied Pangolin <i>Manis tricuspis</i>	81	11	92
Total	92	13	105

Table 3. Observations of the sale of pangolins in rural areas outside Kisangani, Zaire, September 1980-January 1984.

Source: Colyn et al., 1987

In Gabon, a total of 120 White-bellied Pangolins and 23 Giant Ground Pangolins were observed for sale at four bushmeat markets throughout the country during 1993 (Steel, 1994) (Table 4). Although pangolins were consistently one of the least commonly sold meats, comprising less than five per cent of the total sales overall, consumer demand was relatively high. According to traders, White-bellied Pangolin meat was the third-most requested item, and of 206 consumers interviewed, 10% regarded pangolins as their preferred type of bushmeat. Consequently, the price of White-bellied Pangolins at the Libreville markets was one of the highest of all items on sale (CFA 1154/kg = circa US\$4). In addition, Steel (1994) found that most bushmeat did not pass through the formal markets but was bought either directly from hunters in roadside villages or from urban vendors working from home. However, only five White-bellied Pangolins and two Giant Ground Pangolins were observed for sale at the roadside during Steel's survey.

In South Africa, Cape Pangolins are used as bushmeat, but do not seem to be popular, owing to their fattiness, which is regarded as unpleasant (Newton, *in litt.*, 1994).

International trade in African pangolins

CITES annual reports and Customs declarations for the period 1980 to 1992 provide some evidence of international trade in all the African pangolins, albeit in relatively small quantities, either as live animals, dead bodies, trophies, carvings, scales, skins or leather goods (Table 5).

The majority of these declarations (*circa* 75% of all transactions) involved the exportation of 152 live pangolins from Togo to the USA over a period of nine years. These transactions were believed to be largely for the zoo trade (R. Hoyt, pers. comm., 1991), despite the fact that pangolins are not popular zoo animals, owing to difficulties in keeping them alive, their nocturnal and, in the case of the terrestrial species, burrowing habits. The exportation of 25 live White-bellied Pangolins from Togo to Japan in 1990 is also likely to have been for the zoo trade.

It should be noted that non-implementation of CITES provisions for Appendix III species may have accounted for trade in African pangolin species being unreported to CITES. In addition, the nature of the trade in pangolins (i.e. often in scales and other small parts) may account for trade being undetected and, therefore, unrecorded. This has been the case consistently with respect to the extensive trade in the three related Asian species: Malayan Pangolin *M. javanica* primarily, but also Chinese Pangolin *M. pentadactyla* and, possibly, Indian Pangolin *M. crassicaudata* listed in CITES Appendix II. In addition, misreporting of trade in Cape Pangolin from Lao PDR, indicated in Table 5, provides evidence of the identification problems surrounding pangolin species.

Customs statistics available for Taiwan and South Korea show that total imports of pangolin scales to these two countries peaked at *circa* 15 600 kg per year in 1987 (Anon., 1993a). In South Korea, prices per kilogramme of pangolin scales have risen continuously since 1982, and the general trend in volume of scales and number of sources has been upwards, suggesting that the trade in scales is expanding and may be having a deleterious effect on wild populations of these species. In the light of this, of great concern was a single record in 1990 of imports into South Korea of 100 kg of pangolin scales from Madagascar (Table 5), where no pangolin species occur. This suggests the possibility that as Asian species become more scarce, dealers may be turning to African species to satisfy the Asian market. Whether international trade in African pangolins extends beyond Africa, in particular to Asian markets, is not really known. Pangolin scales in Asia are cheap (US\$7 a kg) and are abundant in Asian markets (Loh, *in litt.*, 1993). As already mentioned, pangolin scales sell for *circa* US\$15 each in Pretoria, South Africa; therefore, there would appear to be little financial incentive to export them.

Species	Libreville	Port Gentil	Oyem	Makokou	Total
Giant Ground Pangolin <i>Manis gigantea</i>	20	-	3	-	23
White-bellied Pangolin <i>Manis tricuspis</i>	77	1	39	3	120
All pangolins	97	1	42	3	143

Table 4. Observations of the number of pangolins for sale in major bushmeat markets in Gabon during 147 market visits from November 1992 to December 1993. Source: Steel, 1994

Whilst there is little evidence of trade in pangolin scales for the traditional medicine trade across African borders, Cunningham and Zondi (1991) document widespread movement between countries for other similarly used animal products. Sessou (*in litt.*, 1994), however, reported illegal cross-border trade in pangolin scales between Nigeria and Niger, while an increasing number of confiscations of live Cape Pangolins in Namibia in 1993 was believed to be in response to increased demand for rain-making tokens throughout drought-ridden southern Africa. If it is not already occurring, the potential for international trade in pangolin scales within Africa exists and is likely to increase as pangolins become scarcer in particular countries or regions where demand is acute.

CONCLUSIONS

Although both ecological and economic data on African pangolin species remain sparse, it is clear that, in countries where field studies and research into national utilization of pangolins for food and medicinal purposes have been carried out, some species are becoming more threatened. Continued loss of habitats, especially for the forest-dwelling species, coupled with commercialization

of the bushmeat trade in some areas (Anadu *et al.*, 1988) and their importance as traditional medicines throughout Africa, is likely to increase these threats.

Most of the recent studies outlined in this review point to the importance of pangolins for food and medicine on a local and regional scale within Africa. Although international trade within Africa has not been comprehensively investigated, it seems highly likely that not all pangolin derivatives for sale in regional markets are of domestic origin. In addition, it is possible that some international trade to countries outside continental Africa exists, and this may prove to be an additional cause for concern.

Recent attempts to elucidate the population trends of some species have shown them to be decreasing locally. These perceived decreases are more worrisome in the light of the low reproductive potential of the species, coupled with relatively high hunting pressure and increased habitat destruction. Already the situation in Nigeria and South Africa is such that most pangolins on the market are thought to have been taken from protected areas (Cunningham and Zondi, 1991; Sodeinde and Adedipe, 1994).

Species	Year	Export	Import	Term	Quantity
<i>Manis</i> spp.	1985	Togo	USA	Live	12
	1986	Togo	Poland	Live	2
		Togo	USA	Live	4
	1987	Togo	USA	Live	5
	1989	South Africa	USA	Carvings	15
Giant Ground Pangolin <i>Manis gigantea</i>	1990	Madagascar	South Korea	Scales	100 kg
		Togo	USA	Live	4
		Cameroon	France	Skin and leather	1
		Congo	France	Dead	1
		Togo	USA	Live	35
Long-tailed Pangolin <i>Manis tetradactyla</i>	1990	Togo	USA	Live	13
		Togo	USA	Live	55
		Togo	USA	Live	3
		Central African Republic?	Trophies	1	
		Togo	USA	Live	15
White-bellied Pangolin <i>Manis tricuspis</i>	1987	Congo	France	Bodies	1
		Togo	USA	Live	4
	1988	Congo	France	Dead	1
		Congo	Italy	Dead	1
		Congo	Sweden	Dead	1
	1989	Liberia	USA	Live	2
		Congo	Sweden	Dead	1
	1990	Togo	Japan	Live	25
		Nigeria	USA	Live	1
	Cape Pangolin <i>Manis temminckii</i>	1985	Congo	France	Dead
South Africa			USA	Dead	1
South Africa			USA	Dead	1
1990		Lao PDR	USA	Skins*	226

Table 5. Summary of international trade in African pangolin species reported in CITES and South Korean Customs statistics.

* the 1990 record of 226 Cape Pangolin skins exported from Lao PDR to the USA was, in all probability, of misidentified skins of one of the three Asian pangolin species. Source: Anon., 1994; South Korean Customs statistics

There remains a real need for field assessment of the population status of each species in different habitats, incorporating more comprehensive study of population parameters and ability to withstand current levels of hunting pressure. Likewise, more in-depth research into levels of hunting pressure and utilization of pangolin species, both nationally and within Africa as a whole, are needed.

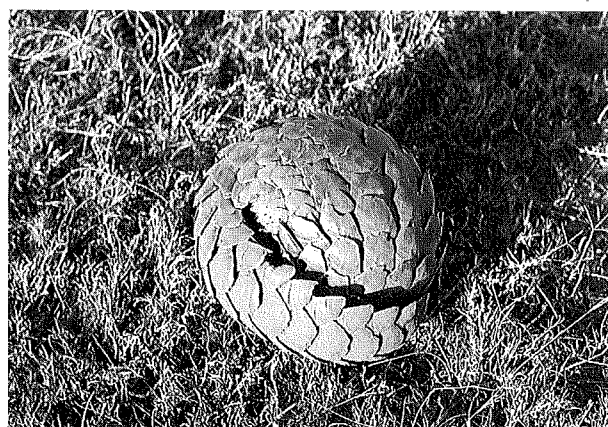
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Cape Pangolin *Manis temminckii* adopting a defensive posture

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Analysis of the Market for Tigers, Bears, and Musk Deer in the Russian Far East

TRAFFIC International

Trade markets in Russia have expanded and diversified following the dissolution of the Soviet Union in 1991 and the associated economic and political changes that ensued. One result of this has been an increased demand for wild animals and plants, including rare and threatened species such as the Tiger and Musk Deer. Poaching of these species has been particularly intensive in the far east of the country, and their sale facilitated by the liberalization of international relations and weakened border controls.

The information presented below is based on the findings of a field investigation of the trade in wildlife in Vladivostok (Primorsky Krai) and Khabarovsk (Khabarovsk Krai) by a TRAFFIC researcher, during the period 17 to 28 January 1994.

INTRODUCTION

The rapid increase in the trade in wildlife in the Russian Far East is linked to the general and economic instability in the country, as well as to improved relations with neighbouring China, South Korea (Republic of Korea) and Japan. These countries are the principal buyers and consumers of wildlife parts and derivatives in the region, mainly for ingredients used in traditional medicines. Among the most sought-after species are the Asiatic Black Bear and Brown Bear *Selenarctos thibetanus* and *Ursus arctos*, the Musk Deer *Moschus moschiferus*, Manchurian Red Deer *Cervus elaphus xanthopygus*, butterflies, ginseng *Panax* and Siberian Pine *Pinus sibirica*. It is the Tiger *Panthera tigris*, however, that is the most critically affected by poaching and trade in this region. There is a long tradition here of hunting this species, but the improved access for Russians (especially sailors working on cargo ships) to East Asian markets has resulted in a decrease in the Tiger population by an estimated quarter in Primorsky Krai, and by one-third in Khabarovsk Krai. The Musk Deer, killed for the musk secreted from a gland or 'pod', much prized in the perfume industry for its scent and fixative properties, has also suffered a precipitous decline, prompting local authorities to cease issuing hunting licences for this species.

METHODS

Interviews were the main method by which information was obtained for this study; officials, scientists, hunters, sellers and others with a knowledge of the trade were asked about poaching, prices and the identification of the main sellers, buyers and consumers. Information was provided on the methods and volume of wildlife exported, the population dynamics of the species in trade, and the regulations governing hunting.

In addition, advertisements were examined for evidence of trade in Tiger, bear and Musk Deer parts.

POPULATION ESTIMATES

The total number of Tigers in 1992 was estimated at 250 to 300 animals in Primorsky Krai (I. Nikolaev, pers. comm., 1994) and about 98 animals in Khabarovsk Krai (S. Pakhno, pers. comm., 1994). A Tiger census is currently underway in both regions.

The Musk Deer population in Khabarovsk Krai, about 35 000 several years ago, has dropped by 60% over the last three to four years, and with the present rate of poaching, it is estimated that the population will be eliminated within the next three to four years (Y. Dunishenko, pers. comm., 1994).

Researchers at the Scientific Research Institute of Hunting (SRIH), at Khabarovskpromokhota (the local official governmental organization responsible for organizing commercial hunting in the Krai) and authorities from the Committee on Ecology, believe that the population of the Brown Bear in the Krai is excessive and could be reduced by one-third without any ecologically damaging consequences. The population of the Asiatic Black Bear in this region remains large.

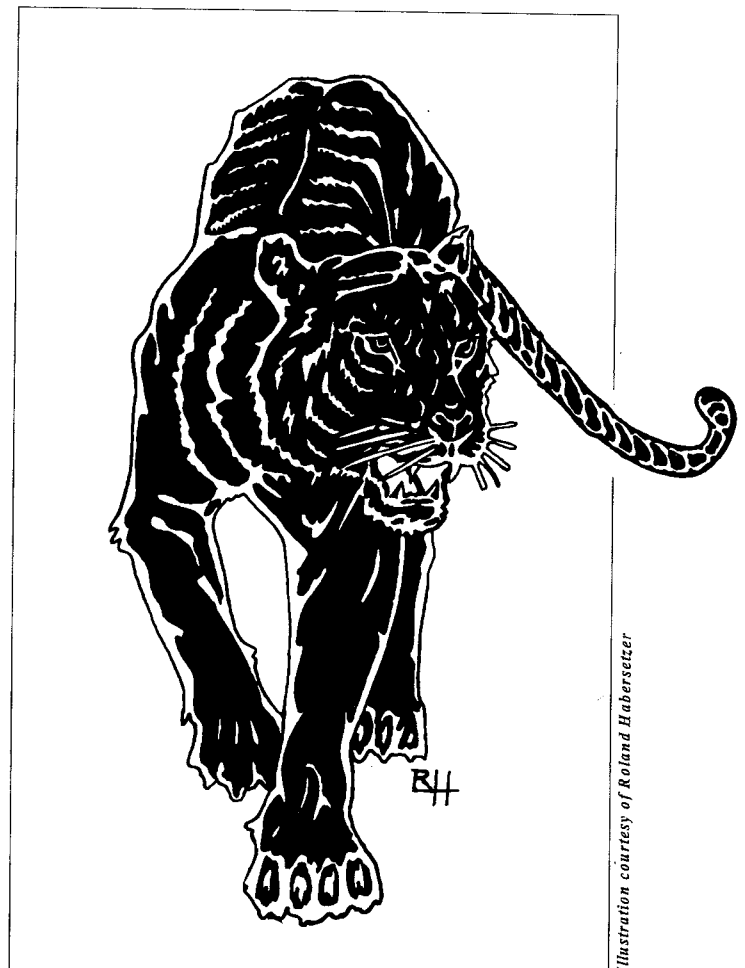


Illustration courtesy of Roland Habersetter

In Primorsky Kray, the population of both species is not large. Scientists with specialized knowledge of *taiga* habitat state that bear populations in the Kray have been severely reduced, although an estimate of these numbers was not provided to the investigator.

LEGISLATION GOVERNING WILDLIFE TRADE

Tigers

Hunting Tigers is prohibited in Russia. The only possible exception is with the approval of the Ministry of Environmental Protection and Natural Resources in cases where a Tiger poses a real danger to humans or is causing economic damage by killing domestic livestock. In such cases, the skin, skeleton and other parts are officially registered and can be used by museums or must be stored by local authorities.

According to the hunting regulations of both Krays, penalties for poaching Tigers are determined on the basis of officially established (and regularly changing) minimum monthly salaries as follows:

- 50 times the minimum monthly salary in Primorsky Kray (and equal to *circa* 1.025 million Rubles in October 1994);
- 300 times the minimum monthly salary in Khabarovsk Kray (and equal to *circa* 6.1 million Rubles in October 1994).

Article 166, Part 2 of the *Criminal Code of Russia* provides for a penalty of imprisonment for up to three years for hunting endangered species.

Musk Deer

Hunting licences were issued prior to last year's hunting season. With effect from this year (1993/94), no more permits are being issued owing to the rapid decrease in the deer population. Currently, only 25 licences for two districts (Pojarsky and Terneysky) are issued in Primorsky Kray and about 40 in Khabarovsk Kray, in both cases to local aboriginal tribes.

Bears

Anyone may purchase a licence to hunt Brown Bears. The licence-holder has the rights to all parts of the animal, and can sell them locally. Exportation of bear parts, however, requires special permission. About 1000 licences to hunt Brown Bears were available in Khabarovsk Kray during the 1993/94 hunting season, though only about 600 were sold. Every year the local hunting department of Primorsky Kray sells between 250 and 300 licences (for between 30 000 and 50 000 Rubles each).

The Asiatic Black Bear is protected and may not be hunted, a fact that is questioned by local authorities and scientists in view of the large population of this species which, at least in Khabarovsk Kray, is estimated to be similar in size to that of the Brown Bear (G. Baryshnikov, pers. comm., 1994). Specialists pointed out that hunters do not make the distinction between Asiatic Black Bears and Brown Bears, and therefore both species are shot.

POACHING

In general, the most important driving force behind increased poaching is the country's critical economic situation and the general impoverishment of the population. Poaching is one means for people to provide for their families: in December 1993/January 1994 the minimum monthly salary was 14 620 Rubles¹. There are no reliable data on poaching figures, and most information available is based on estimates or secondary data.

Tigers

Tiger poaching is the most difficult to bring under control: there is a long tradition of hunting this animal. These reasons include fear of the animal and its potential to destroy livestock, game and hunting dogs; possession of a Tiger trophy would also confer status on the hunter. However, it is only in the last two to three years that Tigers have been poached for profit. In the past, Tiger carcasses were burned or buried by the hunters because discovery of such products could lead to severe punishment. Moreover, it was very difficult to transport and sell the parts, especially abroad. Nowadays, frozen carcasses, skins and skeletons, meat, and whiskers are in demand, the complete animal being the most valuable. In Khabarovsk Kray snares have been found, apparently to catch live Tigers.

According to different estimates during the last two hunting seasons (winter), between 50 and 70 Tigers were killed in Primorsky Kray and up to 40 animals in Khabarovsk Kray (spokespersons of SRIH, pers. comms., 1994). These figures include an average of between two and three specimens that may be shot each year in both regions, under special circumstances, with approval of the Ministry of Environmental Protection and Natural Resources, in Moscow (N. Ivanov, pers. comm., 1994; G. Baryshnikov, pers. comm., 1994). According to information from private sources, six Tigers were poached in Primorsky Kray and five in Khabarovsk Kray during December 1993 and January 1994.

It is difficult to assess what proportion of poached Tigers is exported abroad. There is information that in Harbin, China, a shipment of 500 kg of Tiger bones was seized in 1993. If the average weight of a Tiger skeleton is 25 kg to 30 kg, this amount might represent 16 to 20 Tigers (or even more if the bones did not represent entire skeletons).

¹The minimum monthly salary since August 1994 is 20 500 Rubles.

A

- Abalone, poaching penalties, 10
Aepyceros melampus, CAMPFIRE, 118-119
Agapornis canus, quota (Madagascar), 11
A. lilianae, EU import ban, 91
Ailuropoda melanoleuca, China executes skin sellers, 3
Alisterus amboinensis, trade in Irian Jaya, 121-124
A. chloropterus, trade in Irian Jaya, 121-124
Aloe, Kenya regulates exports, 45; International Trade in, 25-32
A. arborescens, 29
A. ferox, 25-32
A. vera, 25-32
Amaeava amaeva, seizures, 38
Amadina fasciata, illegal possession, 76
Amauromis phoenicurus, 109
Amazona amazonica, seizures, 113
A. albifrons, quota (Nicaragua), 90
A. auropalliata, seizures, 116; quota (Nicaragua), 90
A. autumnalis, quota (Nicaragua), 90
A. brasiliensis, seizures, 113
A. canicularis, quota (Nicaragua), 90
A. dufresniana, seizures, 113
A. farinosa, seizures, 36; quota (Nicaragua), 90
A. finschi, quota (Nicaragua), 90
A. holochlora, quota (Nicaragua), 90
A. leucocephala, seizures, 113
A. nana astec, quota (Nicaragua), 90
A. nobilis, seizures, 36
A. ochrocephala, seizures, 36,75
A. oratrix, seizures, 36
A. pretrei, seizures, 36
A. tucumana, seizures, 36
Anguilla reinhardtii, 10
Anodorhynchus hyacinthinus, seizures, 36,75,113
Antilope cervicapra, seizures, 42
AquaLeathers, 4
Aprosmictus erythropterus, trade in Irian Jaya, 121-124
Ara ararauna, seizures, 75,113
A. auricollis, seizures, 36
A. macao, seizures, 75
A. rubrogenys, seizures, 78
Aratinga canicularis, quota (Nicaragua), 90
A. guarouba, seizure, 75
Arctocebus calabarensis, 65, 66
Ariocarpus bravoanus, 95
A. trigonus, 95
Argentina, 91
Astrophytum asterias, 95
Atherurus africanus, hunting in West Cameroon, 64, 68, 70
Atropa, Indian export ban, 111
A. belladonna, 111

- Australia, *Thunnus maccoyii*, 8; *Tridacna gigas*, 9; fisheries, 9,10,89 *Conospermum* spp., medicinal plants, 34; seizures and prosecutions, 38,78;116; wildlife penalties in Victoria, 54; in Queensland, 89
Aztekium ritteri, 95

B

- Bahamas, longline fishing, 53
Balaena mysticetus, 13, 21-24, 53
Balaenoptera acutorostrata, Norway, 8, 21-24,49; South Korea, 50; seizure, 75,88
B. borealis, 88
B. edeni, 50
B. musculus, 53,88
B. physalus, 21-24
Bear (see also under species), farming, 86
Beche-de-mer, 10
Belgium, seizures and prosecutions, 36;75;113
Berberis aristata, Indian export ban, 111
Bittis gabonica, 69
B. rhinoceros, 69
Bluefin tuna, (see *Thunnus thynnus*; *T. maccoyii*)
Bophuthatswana, poaching penalties, 11
Boa constrictor, seizures, 38
Bond, Ivan, The Importance of Sport-hunted African Elephants to CAMPFIRE in Zimbabwe, 117-119
Bos gaurus, trade law in Nepal, 53; in Kawthoolei, 110
B. javanicus, 110
Booyens, Victor, prosecution, 37
Botswana, seizures and prosecutions, 36; decline in *Panthera leo*, 43
Brotogeris jugularis, quota (Nicaragua), 90
Bubalus bubalis, 55
Bulbophyllum, seizures, 76
Bulgaria, seizures, 75
Buyer Beware campaign, 87

C

- Cacatua alba*, 47
C. galerita, seizures, 113; trade in Irian Jaya, 121-124
C. goffini, seizures, 36
C. moluccensis, seizures, 36,75
C. sanguinea, trade in Irian Jaya, 121-124
Cactaceae, seizures, 75
Caiman crocodilus, skin export regulations (Columbia), 5; *C.c. chiapasius*, quota (Nicaragua), 90
Calophyllum lanigerum, medicinal plant, 34
Calyptorhynchus, seizures, 114
C. funereus, seizures, 36
C. magnificus, seizures, 36
Cameroon, Utilisation of Wildlife in Bakossiland, 63-73; quotas, 90

- CAMPFIRE, The Importance of Sport-hunted African Elephants in Zimbabwe, 117-119
Canada, Fur Harvesters' Sale, 4; fisheries, 7; Domestic and International Trade in Narwhal Products, 13-20; seal penises, 50; timber, 112
Canis, seizures, 115
C. aureus, seizures, 42; on sale in Nepal, 120
C. latrans, fur sale, 4
C. lupus, seizure, 37; on sale in Nepal, 120
Carduelis carduelis, seizures, 75
C. chloris, seizures, 75
Capricornis sumatraensis, 109
Caretta caretta, accidental catch, 49; on sale in Egypt, 50
Castor canadensis, fur sale, 4
Cephalophus spp., hunting in Cameroon, 64, 70
C. dorsalis, 68, 70
C. monticola, 68, 70
Ceratotherium simum (see also Rhinoceros), auctioned, 3; horn seized, 37; dehorned in Zimbabwe, 45-46
Cercocebus albigena, 65,66
C. torquatus, 65,66
Cercopithecus, seizures, 75
C. aethiops tantalus, 65,66
C. erythrotis camerunensis, 65,66,70
C. mona, 65,66,70
C. nictitans, 65,66,70
C. pogonias pogonias, 65,66
C. preussi, 65,66,68,70
Cervus eldi, 110
C. porcinus, 110
C. unicolor, 109
Chalcopsitta atra, trade in Irian Jaya, 121-124
C. duivenbodei, trade in Irian Jaya, 121-124
C. sintillata, trade in Irian Jaya, 121-124
Chan, Chin-hsing, prosecution, 76
Chand, Sansar, arrest, 42
Chamosyna josefinae, trade in Irian Jaya, 121-124
C. multistriata, trade in Irian Jaya, 121-124
C. papou, trade in Irian Jaya, 121-124
C. placensis, trade in Irian Jaya, 121-124
C. pulchella, trade in Irian Jaya, 121-124
C. rubronotata, trade in Irian Jaya, 121-124
C. wilhelminae, trade in Irian Jaya, 121-124
Chelonda oblonga, seizures, 116
Chelonia mydas, for sale in Egypt, 50; seizures, 116
Chen, Uy-te, prosecution, 78
Chile, Southern Ocean whale sanctuary, 88
China, People's Republic of, trade controls, 1,41,42; executions, 1; *Felis lynx* quota, 11; A Spot Check on the Availability of Rhino Products in Guangzhou and Shanghai, 79-80; US sanctions, 83; trade in crickets, 86; bear farms, 86; EU import ban, 91; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
Chizarira National Park, 46
Chlamydotis undulata, import ban (United Arab Emirates), 54
CITES, Parties, 1,41; meeting of the Conference of the Parties, 5; Secretariat, 91; Standing Committee, 41,52,84; Viet Nam, Thailand, 85; A Validation of Draft CITES Criteria Against Selected Plant Taxa, 92-98
Clupea harengus, 7
Coccothraustes coccothraustes, seizures, 75
Coelogyne, seizures, 76
Colombia, caiman skin export regulations, 5
Conospermum spp., medicinal plant, 34
Cooke, Justin, A Report of the 45th Annual Meeting of the International Whaling Commission, 21-24
Conraua spp., 68
Coptis, Indian export ban, 111
Coracias caudata, seizures, 36
C. noevia, seizures, 36

Coronel, Lucio Marcelo, prosecution, 38
Coryphanta, seizures, 75
Cosmopsarus regius, seizures, 36
 Costa Rica, seizure, 38
 Côte D'Ivoire, *Psittacus erithacus*, 5
 Crayfish, poaching penalties, 10
Creatophora cinerea, seizures, 36
Cricetomys, 68,70
 Crickets, trade in China, 86
Crocodylus niloticus, 54; CAMPFIRE, 118-119
Crotalus durissus, seizures, 38
Cyanoliseus patagonus, seizures, 113
Cycas, seizures, 76
 C. revoluta, illegal smuggling from Brazil to Paraguay, 74
Cyclopsitta diophthalma, trade in Irian Jaya, 121-124
 C. guillemittii, trade in Irian Jaya, 121-124
Cystophora cristata, 50
 Czech Republic, seizures, 113

D

Deinagkistrodon (Agkistrodon) acutus, seizures, 77
Delphinapterus leucas, 24
Delphinus delphis, 24; accidental catch, 49
Dendrobates, seizures, 38,78
 D. auratus, quota (Nicaragua), 90
 D. pumilio, quota (Nicaragua), 90
Dendrobium, seizures, 76
Dermochelys coriacea, accidental catch, 49; legislation in Japan, 53
Dicerorhinus sumatrensis, population estimate, 85; 107-110
Diceros bicornis, for sale, 3; dehorned, 45-46; population estimate, 85
Dioscorea deltoidea, Indian export ban, 111
Dugong dugong, legislation in Japan, 53
Dyscophus antongilii, seizures, 115
 D. insularis, 115
 Dzinuhwe, Edward, 1

E

Echinocereus, seizures, 75
Echinofossulocactus, seizures, 75
Eclectus roratus, seizures, 116; trade in Irian Jaya, 121-124
 Egypt, turtles on sale, 50
Elaphe guttata, seizures, 78
 E. obsoleta obsoleta, seizures, 78
Elephas maximus, 75; poaching figures, 85; in Mergui Tavoy District, Kawthoolei, 107-110
 Ellul, Leli, prosecution, 78
Encephalartoscerinus, control of trade in South Africa, 54
Eos cyanogenia, trade in Irian Jaya, 121-124
 E. histrio, South Africa bans imports, 2
 E. squamata, 47
Ephedra, Indian export ban, 111
Epicrates cenchria, seizures, 38,78
Equus, for sale, 3
 E. burchelli, CAMPFIRE, 118-119
Eretmochelys imbricata, on sale in Egypt, 50; seizures, 116; tortoiseshell substitute developed, 87
Erithacus rubecula, seizures, 75
Eschrichtius robustus, 21-24
 Estudillo, Jesus Lopez, acquittal, 78
 Ethiopia, suspension of wildlife hunting, 53
Eubalaena, 88
 EU trade in tusks of *Monodon monoceros*, 13-20; CITES trade bans, 91; Recent Data on the Trade in Rhino and Tiger Products, 1988-1992, 99-106

F

Felis aurata, 67
 F. bengalensis, seizures, 42; on sale in Nepal, 120
 F. chaus, seizures, 115; on sale in Nepal, 120
 F. lynx, quotas, 11,90
 F. marmorata, 109
 F. sylvestris, seizures, 42; on sale in Nepal, 120
 F. temmincki, 108
 F. viverrina, seizures, 115; on sale in Nepal, 120
Ferocactus, seizures, 75
 Fish, leather, 4; fisheries, 7,8,9,10,88-89
 Forest Log, 112
 France, frogs' legs, 4; driftnets, 49; seizures and prosecutions, 75,113; *Thunnus albacares*, 89
 Furzer, Richard, conviction, 38,116

G

Gabon, pharmaceuticals agreement, 112
Galago alleni, 65, 66
 G. demidoff, 65, 66
 G. elegantulus, 65, 66
 Garcia, Teodora Maldonado, 116
 Gavião, Domingos, assassinated, 34
Genetta servalina, 70
Gentiana kurroo, Indian export ban, 111
Geochelone carbonaria, seizures, 38,78,113
 G. chilensis, seizures, 38
Geoffroyus geoffroyi, trade in Irian Jaya, 121-124
 G. simplex, trade in Irian Jaya, 121-124
 Germany, International Trade in Aloes, 25-32; seizures and prosecutions, 36,113
 Ghana, quota, 90
Giraffa camelopardalis, for sale, 3
Glaucidium brasilianum, seizures, 113
 Global Tiger Forum, 42,84
Globicephala melas, 23-24
Gloriosa superba, Indian export ban, 111
 Gorilla gorilla, seizures, 113,116
Gracula religiosa, trade in India, 81-82; 109
 Greece, seizures and prosecutions, 75
 Greenland, Domestic and International Trade in Narwhal Products, 13-20; whaling, 21-24
 Grigsby, David and Doris, convictions, 38
 Guangzhou, A Spot Check on the Availability of Rhino Products, 79-80
 Guinea, quotas, 90
 Guyana, export ban, 11

H

Haliotis (see also Abalone), seizure, 38
 Hanekom, Derrick, prosecution, 114
 Haywood, Mandy, Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
Helarctos malayanus, 108
Hemiphaga novaeseelandiae, 78
 Hong Kong, tightens trade controls, 42,83; availability of bear gall bladders, 59-62; seizures and prosecutions, 76; *Panthera tigris* ban, 83
Hoplostethus atlanticus, fisheries, New Zealand, 51,89; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
 Hill, Glen, Observations of Wildlife Trade in Mergui Tavoy District, Kawthoolei, 107-110
Hippopotamus amphibius, seizures, 76; CAMPFIRE, 118-119; tusks unearthed in Mali, 86
Hippotragus equinus, for sale, 3
 H. niger, CAMPFIRE, 118-119
 Hong Kong, 41; *Panthera tigris* medicine ban, 91
 Hsu, Mr She-Juy, prosecution, 76

Hwange National Park, 45-46
Hyla, seizures, 38
Hylobates, seizures, 77; 108

I

Iguana iguana, seizures, 78
 India, fisheries, 8; fur ban, 53; medicinal plants export ban, 11,111; seizures and prosecutions, 37,42,76-77,114-115; sale of *Panholops hodgsoni* wool, 39; *Panthera tigris*, 42; rhino population estimates, 85; poaching figures, 85
 Indonesia, export of frogs' legs, 4; status of parrots, 47; *Python* trade, 48; Further Parrot Trade Records for Irian Jaya, 121-124; rhino population estimate, 85; export ban, 91
 International Commission for the Conservation of Atlantic Tunas (ICCAT), 51
 International Tropical Timber Agreement (ITTA), 33,74
 International Tropical Timber Organisation (ITTO), 33; 15th Session, 74
 International Whaling Commission, 13-20,49,88-89
 Irian Jaya, Further Parrot Trade Records, 121-124
Isostichopus fuscus, in Galapagos, 52
 Italy, seizures and prosecutions, 36,75,113-114
 Ivory, dealer killed, 1; auction, 3; *Monodon monoceros*, 13-20; A Report of the 45th Annual Meeting, 21-24; seizures, 36-38,75-77,113-116; smuggling/poaching, 43; of *Hippopotamus amphibius*, 86

J

Japan, *T. albacares*, *T. thynnus*, 89; *T. maccoyii*, 8; whaling, 21-24; legislation, 53; seizures and prosecutions, 77,115-116; tortoiseshell substitute developed, 87; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
Jasus edwardsii, illegal take, 78; 89

K

Karen Free State, Observations of Wildlife Trade in Mergui Tavoy District, 107-110
 Kawthoolei, Observations of Wildlife Trade in Mergui Tavoy District, 107-110
 Kenny, Michael, prosecution, 78
 Kenya, regulates *Aloe* exports, 5; International Trade in Aloes, 25-32; seizures and prosecutions, 36
 Kimberly-Clarke, 112
Kinixys erosa, 71
Kobus ellipsiprymnus, CAMPFIRE, 118-119
 Korea, Republic of, joins CITES, 1, 41; ban on Tiger products, 83; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
 Kumar, Ashok, Shahtoosh - King of Wool, 39

L

Lagenorhynchus obliquidens, 24
Lagonosticta senegala, seizures, 36,76
Lama guanicoe, suspension of imports from Argentina, 52
Lamprolaima getulus californica, seizures, 78
 L. triangulum, seizures, 78
Lamprotornis purpureus, seizures, 36
 L. superbus, seizures, 36
 Lai, Jimmy, prosecution, 76
 Lao People's Democratic Republic, 41,85
Leiopelis belliana, 109
Lepidochelys, 50
 L. olivacea, 53
Leptophis ahaetulla, seizures, 38
 Li, Mr Kwok-ching, prosecution, 76

- Lissodelphis borealis*, 24
Liu, Chine-kuo, prosecution, 78
Lofqvist, Ebbe Tony, prosecution, 116
Loh, Jonathan and Kirsty, A Spot Check on the Availability of Rhino Products in Guangzhou and Shanghai, China, 79-80
Lophius, 9
Lophura leucomelana, 110
Loriculus aurantiifrons, trade in Irian Jaya, 121-124
Lorius chlorcercus, seizures, 36
L. domicellus, 47
L. garrulus, 47
L. lory, trade in Irian Jaya, 121-124
Loxia curvirostra, seizures, 75
Loxodonta africana (see also Ivory), 3, Tanzania hunting trophy export quota, 11; sport hunting in Ethiopia, 53, 69; The Importance of Sport-hunted African Elephants to CAMPFIRE in Zimbabwe, 117-119
L. a. cyclotis, 67
Lubisi, Silo, prosecution, 76
Lutra canadensis, fur sale, 4
- M**
- Macaca fascicularis*, Indonesian export ban, 91
M. nemestrina, Indonesian export ban, 91
M. sylvanus, seizures and prosecutions, 113
Macao, Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
Maccullochella macquariensis, 89
MacMillan Bloedel, 112
Macquaria australasica, 89
Madagascar, quota, 11; International Trade in Aloes, 25-32; EU import ban, 91
Maldonado, Jesus Natividad, prosecution, 116
Mali, *Hippopotamus amphibius* tusks unearthed, 86
Mammillaria, seizures, 75
M. solisoides, seizures, 75
Manas Tiger Reserve, 85
Mandrillus leucophaeus, 65,66,68,69,70
Manis temminckii, trade in Namibia, 6; seizures, 36
M. tetradactyla, 68
M. tricuspis, 68, 70
Manna, 26-27
Manusela National Park, 47
Marginatocereus, seizures, 75
Martes zibellina, fur sale, 4
Matobo National Park, 45-46
Matsubara, Shigeru, arrest, 115
Matusadona National Park, 46
McGough, H.N., A Validation of Draft CITES Criteria Against Selected Plant Taxa, 92-98
Megaptera novaeangliae, 21-24,88
Melursus ursinus, seizures, 115
Menon, Vivek, The Trade in Hill Mynas in India, 81-82; Furs in Kathmandu, *Reprise*, 120
Mergui Tavoy District, Observations of Wildlife Trade, 107-110
Milliken, Tom, Rhino Dehorning in Zimbabwe: an Update, 45-46
Mitchell, prosecution, 38
Mitoya, Akihiko, prosecution, 77
Monodon monoceros, Domestic and International Trade in Narwhal Products, 13-20; 24
Morelia spilota, seizures, 76
Moringa oleifera, medicinal plant, 35
M. stenopetala, medicinal plant, 35
Moschus, reservations;
M. chrysogaster, 45; trade laws in Nepal, 53
Mozambique, poachers in South Africa, 43
Mulliken, Teresa, Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
Muntiacus, trade laws in Nepal, 53
M. muntjac, 109
M. reevesi micrurus, seizure, 77
- Mustela*, fur sale, 4
Myanmar, 41; Observations of Wildlife Trade in Mergui Tavoy District, Kawthoolei, 107-110
- N**
- Naemorhedus goral*, 110
Naja melanoleuca, 69
N. naja, seizures, 77
Namibia, animals auctioned, 3; trade in *Manis temminckii*, 6; seizures, 36; rhino dehorning, 46; 50
Nandinia binotata, 68, 71
Nardostachys, Indian export ban, 111
N. grandiflora, seizures, 77
Narwhal, (see *Monodon monoceros*)
Nasalis larvatus, 35
Nash, Stephen, Further Parrot Trade Records for Irian Jaya, Indonesia, 121-124
National Trust, upholds deer hunting, 6
Natural Resources Defense Council, monitoring of bulb labelling, 112
Nenusa, *Eos histrio*, 2
Neobuxbaumia, seizures, 75
Neofelis nebulosa, in Nepal, 53,120
Neophocaena phocaenoides, legislation, Japan, 53
Neopsittacus musschenbroekii, trade in Irian Jaya, 121-124
N. pullicauda, trade in Irian Jaya, 121-124
Nepal, 39; wildlife laws, 53; seizures, 77; Furs in Kathmandu, *Reprise*, 120; rhino population estimates, 85
Netherlands, seizures and prosecutions, 36,75,114
New Zealand, *Thunnus maccoyi*, 8; *Hoplostethus atlanticus*, 89
Nipponia nippon, increased protection in China, 1
North Atlantic Fisheries Organisation, 7
Norway, fisheries, 7; whaling, 8, 21-24,49,88; seizures, 75-76
Nycticebus cougang, seizures, 115
- O**
- Oldfield, Sara, International Trade in Aloes, 25-32
Ondatra zibethicus, sale of pelts, 4
Oosthuizen, Daniel Jan, prosecution, 37
Oreopsittacus arfaki, trade in Irian Jaya, 121-124
Osteolaemus tetraspis, 68
Ovis canadensis, poaching in the Rockies, 6
- P**
- Pagophilus groenlandicus*, 38,50
Pakistan, trade in bears, 48
Pangolin (see *Manis*)
Panthera leo, decline in Botswana, 43; seizures, 113; CAMPFIRE, 118-119
P. pardus, seizures, 36,37,42,76,77,114,115; 75; on sale in Nepal, 120; CAMPFIRE, 118-119; 109
P. p. leopardus, 67
P. tigris, trade controls in China, 1,42, seizures, 37,42,76-78,115,116; CITES Standing Committee, 41,84; trade controls in Nepal, 53; China ban, 79; Hong Kong ban, 83,91; South Korea ban, 83,91; trade controls in Taiwan, 83; Global Tiger Forum, 42,84; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
P. uncia, trade laws in Nepal, 53;
Pantholops hodgsoni, seizure of wool, 38,78,114; Shahtoosh - King of Wool, 39
Pan troglodytes, 65,66,69; seizures, 75,113,114
Paphiopedilum, on sale in South Africa, 2, seizures, 76,77; 92-98
Papua New Guinea, 111
Paraguay, plant smuggling, 74
Passer montanus, seizures, 75
Pavo cristatus, seizure, 37-38
P. muticus, 110
Pelly Amendment, 41,49,58,83
Pelusios niger, 71
Peneaus monodon, 54
Perodicticus potto, 65, 66
Phelsuma abboti, EU trade ban, 91
P. barbouri, EU trade ban, 91
P. befotakensis, EU trade ban, 91
P. chekei, EU trade ban, 91
P. dubia, EU trade ban, 91
P. modesta, EU trade ban, 91
P. mutabilis, EU trade ban, 91
P. seippi, EU trade ban, 91
P. trilineata, EU trade ban, 91
Philippines, primates, 54; trade ban, 54; bird export ban, 91
Phocoena phocoena, resolution, 23
Phocoenoides dalli, 24
Phyllomedusa sauvagei, seizures, 38
Physeter macrocephalus, 49,88
Pinctada margaritifera, trade ban in Philippines, 54
Pionopsitta haematotis, quota (Nicaragua), 90
Pionus senilis, quota (Nicaragua), 90
Platichthys flesus, 9
Podocnemis expansa, seizures, 38
Podophyllum hexandrum, Indian export ban, 111
Polyborus plancus, seizures, 113
Polyplectron bicalcaratum, 108
Pongo pygmaeus, seizures, 77
Presbytis francoisi, EU trade ban, 91
P. obscura, 108
Prionace glauca, accidental catch, 49
Probosciger aterrimus, trade in Irian Jaya, 121-124
Procolobus badius preussi, 65,66
Procyon, fur sale, 4
Prototroctes maraena, 89
Pseudeos fuscata, trade in Irian Jaya, 121-124
Pseudocarcinus gigas, 89
Psittacella brehmii, trade in Irian Jaya, 121-124
P. picta, trade in Irian Jaya, 121-124
Psittacula, 108
P. alexandri, illegal trade, 78
P. roseata, EU trade ban, 91
Psittaculirostris desmarestii, trade in Irian Jaya, 121-124
P. edwardsii, trade in Irian Jaya, 121-124
P. salvadorii, trade in Irian Jaya 121-124
Psittacus erithacus, concern over exports from Côte D'Ivoire; quota (Zaire), 54, (Cameroon), 90; (Guinea), 90; seizures, 36,38,75,113,114,116
P. e. erithacus, concern over exports from Côte D'Ivoire
P. e. timneh, concern over exports from Côte D'Ivoire
Psittichas fulgidus, trade in Irian Jaya, 121-124
Ptyas mucosus, seizures, 77
Publications available, 12,44,125-127
Python, Indonesia, 48; seizures, 77
P. molurus, seizures, 77
P. m. bivittatus, seizures, 36
P. regius, seizures, 76; quota (Ghana), 90
P. reticulata, seizures, 36
P. sebae, 69; seizures, 113
- Q**
- Quassia amara*, 26-27
Quinta, S., prosecution, 37

R

- Ramphastos sulfuratus*, quota (Nicaragua), 90
Ratufa, 108
Rauwolfia, Indian export ban, 111
 Reeves, Randall, Domestic and International Trade in Narwhal Products, 13-20
 Rhinoceros (see also under species), China and Taiwan trade controls for rhino horn, 1; auction, 3; seizures, 36-38, 76-77, 114, 116; CITES Standing Committee, 41, 84; smuggling/poaching of horn, 43; dehorning in Zimbabwe, 45-46; rhino horn in Taipei, Taiwan, 55-58; A Spot Check on the Availability of Rhino Products in Guangzhou and Shanghai, China, 79-80; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
Rhinoceros sondaicus, population estimate, 85; 107-110
R. unicornis, seizures, 58, 77, 116; population estimate, 85; poaching figures, 85
 Russia (see also Soviet Union), *Felis lynx* quota, 11, 90; 41

S

- Saiga tatarica*, 55; increased protection in China, 1
 Sandison, M.S., A Validation of Draft CITES Criteria Against Selected Plant Taxa, 92-98
 Sangihe, *Eos histrio*, 2
Santalum spicatum, seizure, 37-38
Saussurea costus (=lappa), export ban (India), 11, 111
 Schram, Matthew Eric, arrest, 116
Scleropages formosus, seizures, 77, 115
 Scotland, fisheries, 7
 Scott Paper, 112
 Seizures and prosecutions, 42, 36-38, 75-78, 113-116
Selenarctos thibetanus, in Pakistan, 48; bile samples, 60; seizures, 76
Serinus mozambicus, seizures, 36
 Shanghai, A Spot Check on the Availability of Rhino Products, 79-80
 Sharjah, ban lifted, 11
 Siberut, medicinal plants, 34
 Sibiya, Godfrey, prosecution, 76
 Singapore, 2; seizures, 77
 Société General Surveillance, 111
 Somalia, ivory poaching, 43
 South Africa, bans imports of *Eos histrio*, 2; control of trade in indigenous plants, 54; *Paphiopedilum* for sale, 2; International Trade in Aloes, 25-32; seizures and prosecutions, 36, 76, 114; increase in ivory and rhino horn poaching/smuggling, 43
 Southern Ocean Whale Sanctuary, 23-24, 49, 88-89
 South Korea, sale of whale meat, 50; ban on sale of *Panthera tigris* derivatives, 91
 Soviet Union (see also Russia), whaling, 88
 Squid, 9
Stenella attenuata, 24
S. coeruleoalba, resolution, 23; accidental catch, 49
S. longirostris
Stenocereus, seizures, 75
 St Kitts-Nevis, accession to CITES, 41
Strix occidentalis caurina, 35
Struthio camelus, 11
 St. Vincent and The Grenadines, whaling, 21-24
Sus scrofa, 109
Swertia chirata, Indian export ban, 111
Syncerus caffer, for sale, 3; overhunted, 43; CAMPFIRE, 118-119
S. caffer nanus, utilization in Cameroon, 67

T

- Taiga, sustainable forestry initiatives, 33
 Taiwan, trade controls, 1, 41, 83; Pelly, 41, 83; driftnets, 49; Rhino Horn in Taipei, 55-58; seizures and prosecutions, 77, 116; *Thunnus albacares*, 89; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106
 Talaud, *Eos histrio*, 2
 Tanzania, restricts tourist hunters, 3; *Loxodonta africana* hunting trophy export quota, 11; seizures, 37, 76, 114; wild bird management plan, 47; ports of entry reduced, 47; bans exports of raw timber, 74
Tapirus indicus, 108, 110
Tauraco, 76
Taurotragus oryx, for sale, 3; CAMPFIRE, 118-119
Taxus baccata, seizures, 37; Indian export ban, 111
Testudo graeca, seizures, 75
T. hermanni, seizures, 75
 Thailand, seizures and prosecutions, 77; CITES meeting, 85
 Thinley, Pema, arrest, 42
 Thomsen, Jorgen, A Report of the 45th Annual Meeting of the International Whaling Commission, 21-24
Thryonomys swinderianus, hunting in West Cameroon, 64, 70
Thunnus alalunga, 49
T. albacares, 89
T. maccoyi, quota, 51; captive-breeding attempt, 89
T. thynnus, quota, 51; 89
 Tianshun, Deng, 3
 Tibet, *Panholops hodgsoni*, 39; smuggling, 42; seizures, 78
 Tiger (see *Panthera tigris*)
 Toit, Raoul du, Rhino Dehorning in Zimbabwe: an Update, 45-46
 TRAFFIC, East Asia, 83
 East/Southern Africa, 2; Rhino Dehorning in Zimbabwe: an Update, 45-46
 India, 39; The Trade in Hill Mynas in India, 81-82; Furs in Kathmandu, *Reprise*, 120; 107
 Southeast Asia, 2, 85
 Taipei, A Spot check on the Availability of Rhino Products in Guangzhou and Shanghai, China, 79-80
 USA, monitoring of bulb labelling, 112
Tragelaphus buxtoni, suspension of hunting in Ethiopia, 53
T. scriptus, 53, 70; CAMPFIRE, 118-119
T. strepsiceros, CAMPFIRE, 118-119
Tragulus, 108
Trichobatrachus robustus, 68
Trichoglossus goldiei, trade in Irian Jaya, 121-124
T. haematodus, trade in Irian Jaya, 121-124
Tridacna gigas, 9; trade ban in Philippines, 54
Trochus, seizure, 38
Tupinambis rufescens, seizures, 38
Turdus, seizures, 75
T. merula, seizures, 75
Tursiops truncatus, 24

U

- United Arab Emirates, import ban on *Chlamydotis undulata*, 54
 United Kingdom, fisheries, 7; seizures and prosecutions, 36, 76; Buyer Beware Campaign, 87; timber, 112
 United Nations, fisheries meeting, 7

Upupa epops, 11

- Uraeginthus bengalus*, seizures, 36
U. ianthinogaster, seizures, 36
 Ursidae, reservations, 1
Ursus americanus, poaching in the Rockies, 6; seizures, 38; trade controls in Hong Kong, 42; bile samples, 60
U. arctos, skins seized, 36; in Pakistan, 48; in Bulgaria, 48; farming in China, 60
U. maritimus, seizures, 38
 USA, threatens sanctions against China and Taiwan, 1, 41, 83; *Monodon monoceros* tusks, 15; whaling, 21-24, 49; International Trade in Aloes, 25-32; medicinal plant research, 34; *Strix occidentalis caurina*, 35; seizures and prosecutions, 38, 78, 116; Recent Data on Trade in Rhino and Tiger Products, 1988-1992, 99-106; monitoring of bulb labelling, 112; National Cancer Institute, 112

V

- Varanus*, 109
V. niloticus ornatus, 69
 Viet Nam, wildlife restrictions, 11; accession to CITES, 41; CITES meeting, 85; EU import ban, 91
Viverra civetta, hunting in West Cameroon, 64, 70
Vulpes vulpes, fur sale, 4; on sale in Nepal, 120

W

- Wangchuk, Princess Ashi Deki Yangzom, arrest, 77, prosecution, 116
 Whaling, 8, 49, 88
 Wildlife Trade Education Kit, 87

X

- Xiphia gladius*, accidental catch, 49
 Xiuying, Zhu, 3

Y

- Yamoto, Kiyoshi, conviction, 115
 Yemen, Republic of, rhino horn trade, 1, 41

Z

- Zaaiman, Gerhard, prosecution, 76
 Zaire, quota, 54
 Zambia, 41; seizures and prosecutions, 37, 114; rhino poachers, 45-46; EU import ban, 91
 Zhenghui, Zhuang, prosecution, 77
 Zimbabwe, *Crocodylus niloticus*, 54; ivory dealer killed, 1; dehorning rhinos, 45-46; seizures, 76; The Importance of Sport-hunted African Elephants to CAMPFIRE, 117-119

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 INDEX
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Musk Deer

In contrast to Tigers, where all parts are used, Musk Deer have practically nothing commercially useful except the musk 'pod'. In some cases the hunters might eat the meat, or use it to bait traps set for other fur-bearing animals. Over the space of several years, intensive poaching organized by Koreans working on a timber concession in Verhneburiinsky District, Khabarovsk Krai (where some 15 000 Korean workers are located), practically destroyed the local population of Musk Deer and other fur-bearing animals, and salmon numbers were severely reduced. In Vladivostok, a commercial Korean firm officially advertised their interest in buying bear galls and Musk Deer pods.

Bears

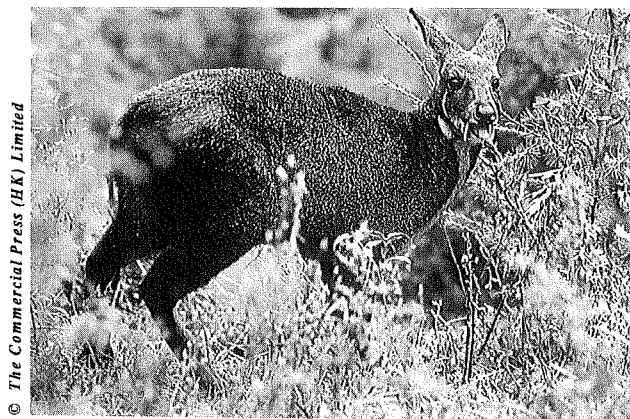
Bear meat is used more than that of Musk Deer (in previous years, organized hunting was carried out and bear meat could often be found in the food shops or in the markets of cities in the Far East), and skins are often taken, though local demand for these is not high. Many advertisements offering bear skins appear in newspapers, and good-quality skins can be found in practically all souvenir shops (prices vary from between 500 000 to one million Rubles).

Increasingly, however, entire carcasses can be found with only their gall bladders removed. Assessing the volume of new bear gall bladders in trade is impossible, partly owing to the fact that over the past two years, stocks accumulated in the last five to 15 years have entered the market. Moreover, bear gall bladders originating from Kamchatka, Yakutia, Altay, Buryatia and Chita Oblast are also traded through the Russian Far East, making it difficult to determine the quantity originating from Primorsky Krai and Khabarovsk Krai.

The Asiatic Black Bear is said to possess the largest and best quality bladder of all bears, making it especially vulnerable to poaching. According to very rough estimates of the Khabarovsk Krai Committee on Ecology and Natural Resources Protection, up to 50% of all poached bears are Asiatic Black Bears. Similarly unanalysed estimates by the Committee for Ecology, calculate that some 3000 to 4000 bears are poached annually. This amounts to some three to four times the number of official licences available, and could represent some 120 kg to 240 kg of dried gall bladders.

GROUPS INVOLVED IN GATHERING AND SELLING WILDLIFE

While in the previous two years the trade in wildlife characteristically involved individual amateur traders - essentially anyone who could obtain these products - the trade is now increasingly monopolized by organized groups. It is not easy to ascertain whether these groups deal exclusively with the trade of animal parts.



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Musk Deer *Moschus moschiferus*

Groups and individuals who have stable and reliable channels across borders to outside buyers (especially for large consignments) hold the most dominant position on the market. Private individuals on business trips or tourist and shopping tours who take wildlife parts out of the country generally export relatively insignificant amounts of wildlife items (though in total this may be considerable).

Hunting

Hunting is usually conducted by professionals, but the opening up of the trade in wildlife in recent years has resulted in increased involvement of amateur hunters. Many hunters are urban residents who buy hunting licences principally to obtain the animals' meat for their own use; the other parts of the animal (e.g. gall bladders, musk pods, penises) are then either sold, given to persons for sale abroad, or are exported by the hunters themselves. Professional hunters, who often live in remote areas, have difficulty in making direct contact with foreign customers and often do not know the market prices; consequently they generally prefer to sell to first-level middlemen-buyers.



© Sue Earle

The small size of Musk Deer pods makes them relatively easy to conceal.

Middlemen Buyers

There are two tiers of middlemen:

First-level middlemen are those who have close contact with hunters (from whom they regularly buy items) and with visiting buyers. They live in the villages and in district centres and could be called 'resident middlemen'. They know the hunters and organize most of the buying in their area. Hunters bring their items to them with the aim of buying or trading wildlife parts; first-level middlemen also comprise those who visit villages and timber and hunting co-operatives on an occasional or regular basis with the aim of purchasing wildlife parts from local people for barter (e.g. vodka, sugar and tinned meat). These 'travelling middlemen' have good transport and usually know the key persons holding wildlife parts, and the kind of products people are willing to trade.

Second-level middlemen sometimes include 'travelling middlemen' who buy from 'resident middlemen'. However, second-level buying is mostly organized by middlemen living in the cities (especially large ports and border cities). They purchase items from the first-level middlemen (and occasionally direct from hunters) and may place orders for particular items and quantities. In turn, they export these items themselves or re-sell to persons or organizations with access to good export channels. An example of this was demonstrated to the investigator by a hunter from Khabarovsk who had received an order for one to two kilogrammes of bear gall bladders from a friend who, in turn, wanted to sell to Chinese customers.

Sale Abroad

There are mainly two methods used by Russian citizens for the sale of wildlife parts abroad. The first is opportunistic, where the customer is unknown and there is no prior agreement; it might involve selling from a ship, or open market, sale to a pharmacy (the seller may have to visit many pharmacies before finding a buyer), or sale to individuals (visiting private houses). The latter is the most difficult and risky. Usually pharmacies offer the highest prices. The second method is organized, where the customer (shops, pharmacies or companies) has been determined beforehand. The customer may be a foreigner or a foreign organization, or part of a chain of middle-level buyers. The second method is the most secure and profitable arrangement.

Examination of the advertisements placed in the local newspaper *Vladivostok* during the second part of 1993 indicate that one or two large organizations have a monopoly of the market for bear gall bladders and Musk Deer pods; these organizations arrange large-scale buying and, presumably, export abroad.

Exportation of parts and derivatives is also organized by Russian nationals and foreigners, and there is evidence to suggest that specialized groups have formed to trade wildlife to East Asian countries.

PRINCIPAL CONSUMERS

The investigation found that two groups of countries can be identified as the principal consumers of wildlife derived from the Russian Far East:

- 1) those that receive wildlife parts directly from the region (South Korea, China, Japan, USA, for example);
- 2) those that receive wildlife parts via other countries, usually the aforementioned (Hong Kong, Taiwan, Viet Nam, Singapore, Malaysia, Thailand, for example).

Most persons interviewed identified Russian Koreans (those who emigrated from Korea in the 1930s, and their descendents) as the primary buyers and consumers of wildlife parts in the region. Some expressed the view that it was the Russian Koreans who initiated the increased demand for wildlife parts some two to three years ago, owing to their connections with relatives in North Korea (People's Democratic Republic of Korea) and South Korea, and knowledge of export routes across the border. Moreover, up to 80% of all ships leaving from ports in Primorsky Krai sail to South Korean destinations (Vladivostok Customs officer, pers. comm., 1994)

The Chinese are the main consumers of Tiger bone and, together with the South Koreans, are the main recipients of Tiger bone from the Russian Far East. However, China's main interest appears to be in re-exporting processed Tiger bones, commercial medicines containing wildlife derivatives, and other such derived products within the region. According to a source at the Primorsky Game and Hunting Society, the Chinese are involved in the primary and secondary processing of such raw materials, which are then sold at much higher prices.

Demand in Japan is lower than that in South Korea and China, believed to be in part as a result of stricter laws in that country and the tightening of Japanese Customs controls, following increased transit of drugs and weapons through Russia to Japan. A source at the Biological and Soil Institute, Vladivostok, attributes the decline in demand to the Japanese preference for commercially made Chinese medicines rather than for illegally obtained raw products from Russians: Russian sailors and tourists apparently often attempt to sell bear gall bladders and musk pods to pharmacies and private houses in Japan at very low prices (sometimes lower than those paid in Russia), and are sometimes unable to sell them at all. However, the investigator is aware of evidence of Japanese buying bear galls and musk pods in Khabarovsk Krai. A source at the Hunting Research Institute, Khabarovsk, believes that it is difficult to judge whether exports of wildlife parts to Japan have actually declined, or whether such trade has just been driven underground.

Interviewees were of the view that, a year or two previously, Tiger skins mostly went to Japan to be traded for second-hand cars. Further, the majority of Tiger skins seized by Russian Customs have been bound for Japan. There is also some evidence of Tiger skin exports by commercial ship to the USA, and to the Caucasian Republics.

Another source has found evidence of an increase in the flow of items to Southeast Asian countries such as Singapore, Malaysia and Thailand, and an official of the Primorsky Game and Hunting Society identified Western Europe as a destination for wildlife parts and derivatives, routed through Moscow, and Prague, in the Czech Republic.

According to a salesman in a shop in Khabarovsk that sells souvenirs, including hunting trophies and animal parts, Koreans, Chinese, and Russian middlemen are the main buyers of bear galls, musk pods, and penises of Manchurian Red Deer, Reindeer *Rangifer tarandus* and seals.

TRANSPORT

All possible means are employed to transport wildlife from Russia, including cars, buses, trains, marine ships, rivercraft (e.g. on the Amur River), aircraft, and pedestrians.

Over Land Borders

Wildlife parts are being carried across borders into China (and possibly in small quantities to North Korea): in Primorsky Kray, there are reportedly five cross-border checkpoints, and several routes from Khabarovsk Kray. Until recently, Chinese citizens could pass freely across the border, especially residents of the border areas. All interviewees gave examples of cases where Chinese

traders have crossed the border to buy items on the Russian black market, either from middlemen or direct from the hunters. Small and lightweight products, such as bear gall bladders and Musk Deer pods, are easily smuggled into China in small quantities and the significant trade that passes through on freight trains and cargo trucks is difficult to police. Korean timber workers apparently smuggle shipments of musk and other goods - including tractors - across the border in freight trains transporting timber. Shopping tours to China, mainly to Harbin and Suyfenkhe, have become very popular among people in the Russian Far East and provide another opportunity for smuggling. The investigator was told of several cases involving groups of Chinese crossing the border in search of game, ginseng and other species; in one such incident, a group of about 20 people were arrested following the discovery of 150 wild ginseng roots in their possession (I. Nikolaev, pers. comm., 1994).

It is reported that some Customs staff are involved in the trade: some interviewees claimed to know of cases where officials were paid bribes to allow the exportation of Tiger parts and other items. However, there are no officially registered cases of such incidences.

Marine Ships

Sea-going vessels are the most popular means for exporting wildlife from Primorsky Kray and at least the second-most important means in Khabarovsk Kray. Cargo ships leave from several large and numerous small ports along the extensive coast of Primorsky Kray (for instance, Vladivostok, Slavunka, Preobrajenie, Terney) and Khabarovsk Kray (Sovetskay Gavan, Nikolaevsk-on-Amur, Vanino, amongst others). Apparently ships carrying timber are used to smuggle Tiger parts, which are concealed between the logs. Passage from small ports is preferable, owing to their poorer Customs controls.

Date	Item	Country of destination	Nationality of carrier	Estimated price (Rubles)
4 January	1 Blue Fox <i>Alopex lagopus</i> skin	China	Chinese	25 000
6 January	1 Brown Bear <i>Ursus arctos</i> skin	South Korea	unknown	9 900
21 March	2 Sable <i>Martes zibellina</i> skins	Japan	Armenian	30 000
30 March	4 musk deer <i>Moschus</i> pods	South Korea	Russian Korean	39 000
25 August	2 Mink <i>Mustela lutreola</i> skins	South Korea	unknown	78 000
	2 otter skins			11 250
	3 Manchurian Red Deer penises			1 500
5 November	<i>Cervus elaphus xanthopygus</i> Manchurian Red Deer tails	China	Russian	-
26 November	2 musk deer <i>Moschus</i> penises	South Korea	Russian Korean	18 021
	Endocrine gland (29g) (species not recorded)			

Table 1. Items seized by Customs at the Passenger Division of Vladivostok Port, 1993.

Source: Vladivostok Customs

To a lesser extent, small amounts of wildlife are smuggled out on passenger ships, but such contraband is practically impossible to control (Vladivostok Customs officer, pers. comm., 1994). The number of items seized in the port of Vladivostok in 1993 is presented in Table 1; also seized in that year, but not recorded in the Customs data, was a three-kilogramme consignment of musk pods.

Freshwater Ships

The Amur River is the main freshwater conduit for passage to China and it is practically impossible to control all traffic on this waterway. Shipping of freight is intensive during the summer months as the river freezes over during the winter.

Aircraft

Transport of wildlife parts by air reportedly is not very important, largely owing to the more stringent Customs controls and the difficulties associated with the transportation of goods such as Tiger skins, carcasses and skeletons, which are less easy to conceal than smaller items. The international airport at Khabarovsk has flights to Japan, South Korea, China and the USA. Artem airport, located approximately 50 km from Vladivostok, has started to provide charter and commercial flights to Japan and South Korea. There have been no known cases of smuggling of Tiger parts at this airport, and only a few cases involving small quantities of gall bladders and musk pods, mostly by Koreans (Khabarovsk Customs officer, pers. comm., 1994). In previous years (1991 to 1992) there were several attempts by people from Central Asia to export Saiga Antelope *Saiga tartarica* horns by air in lots of up to 20 kg each (E. Shukin, pers. comm, 1994).

There are many tourist agencies in Khabarovsk and Vladivostok that organize trips to South Korea, China, Japan and Southeast Asia. These agencies usually guarantee the arrangement of all the Customs formalities which, in some cases, reportedly allows Customs controls to be bypassed; such trips are also arranged under cover of a 'sailor passport', which entitles the bearer to special privileges. In effect, some of these agencies provide arrangements suitable for the uncontrolled exportation of wildlife parts.

PRICES

Prices fluctuate according to changes in supply and demand; at the time of the study prices had fallen during the previous six months owing to an apparent oversupply on the market, particularly of gall bladders and musk pods. A summary of recent price information for wildlife parts in Vladivostok and Khabarovsk is presented in Table 2².

Tigers

The price for Tiger parts is highly variable. Prices for skins depend upon the size of the animal and the season in which it was poached (which can affect the quality and colour of the animal's fur) and on the hunter's knowledge of the market and readiness to store items until prices increase. Most of the available data are from 1992 to 1993.

It is said that a few years ago Russian sailors could obtain two or three second-hand cars in Japan in exchange for a Tiger skin (at that time, each car was worth *circa* seven million Rubles); it is now possible to exchange a Tiger skin and skeleton for one or two such vehicles. According to officers of the Passenger Customs

Items	Hunter	Middleman	Abroad
Tiger carcass	1 000-4 000	3 000-6 000	10 000-15 000
Tiger skin	1 000-2 000	2 000-4 000	5 000-50 000
Tiger skeleton	1 000-2 000	2 000-4 000	4 000-10 000
Tiger bones (per kg)	20-100	50-300	up to 3 000
Bear gall bladders (per dry gram)	1-1.5	up to 4	4-8
Musk pods (per dry gram)	1-2	up to 5	4-10, up to 50
Manchurian Red Deer tails	1-2	up to 4	n/a
Reindeer antlers (per kg)	n/a	n/a	up to 250
Manchurian Red Deer antlers	n/a	n/a	up to 650
Seal penises	n/a	up to 50	up to 100
Sea cucumber (per dry kg)	n/a	30	n/a
Ginseng (per dry gram)	n/a	up to 70	n/a

Table 2. Recent/current price information for wildlife parts in Vladivostok and Khabarovsk (US\$).

²Exchange rates fluctuated widely in the period covering this study: US\$1=100 Rbl. (1992); US\$1=1000 Rbl. (late 1993); US\$1=1300 Rbl. (early 1994); US\$1=2000 Rbl. (mid-1994); US\$1=2500 Rbl. (September 1994); US\$1=3000 Rbl. (mid-October 1994).

Department of Vladivostok Port, a sailor was arrested (date not specified) in possession of a Tiger skin which he had bought in Russia for US\$2000 and which he had hoped to sell in South Korea for US\$2500-US\$3000.

A hunter in Vladivostok told of a case in 1993 where a Tiger skin had been offered for one million Rubles (in 1992, such an item could be obtained for 600 000 Rubles). The hunter himself had been offered US\$2000 for a skin, for which sailors supposedly might receive US\$5000 in Japan. A Tiger carcass is very expensive as it assures authenticity: the hunter said that a complete Tiger skeleton can cost up to US\$5000. According to sources at the Primorsky Game and Hunting Society, a hunter can sell an entire Tiger carcass, with processed skin, for about US\$8000.

In Khabarovsk, in 1993, it was possible to buy a Tiger skin directly from a hunter for three million Rubles. At the open market in Khabarovsk, a first-level middleman offered the investigator a frozen Tiger carcass for US\$5000 (the specimen was not seen). It may have been possible to reduce the price by 10% by bargaining. The seller was not willing to reveal what his profit would have been, even when offered money for such information.

Musk Deer Pods

The price dynamics for musk deer pods do not differ much to those of bear gall bladders (see below), though prices for musk pods are generally slightly higher (Table 2). Middlemen buy from hunters at not more than US\$2.5 a gram. Profits from sale abroad amount to approximately US\$1-US\$2 a gram. In Hong Kong, one gram of musk pod reportedly can sell for US\$30-US\$50.

The Khabarovsk branch of the Scientific Research Institute of Hunting (SRIH) negotiated with a Taiwanese firm the possibility of officially exporting legally obtained bear gall bladders to Taiwan. The SRIH estimated that from the supply arriving from Yakutia, Burytia, Altay and Chita Oblast, they could export up to 50 kg a year at a preliminary selling price of US\$15 a gram. This would allow for increased payments to the hunters and reduce the amount of black market trade. However, the Taiwanese firm was only willing to operate on an officially legal basis, and the Ministry of Environmental Protection and Natural Resources refused SRIH's request for a licence.

Bear Gall Bladders

The price of dry bear gall bladders is well known and, but for a few fluctuations, has been relatively stable. Hunters usually receive no more than US\$2 a gram; it is possible to buy from a first-level middleman for US\$2.5-US\$3 a gram, and each additional middleman will add 20% to 40% to the cost. In 1992 and early 1993, when demand was at its peak, the price reached US\$6-US\$7 a gram (the average weight of a dried bear gall is 40 g to 60 g, although some can weigh as much as 120 g). From numerous hearsay reports, in 1991 and 1992 it was possible to barter two or three high-quality bear gall bladders in Japan for a second-hand car, though these stories could not be confirmed. At the time of this survey, prices for bear gall bladders in Vladivostok and Khabarovsk varied from between US\$1.5-US\$4 a dry gram. At Khabarovsk market, dry gall bladders could be bought for US\$2-US\$2.5 a gram and re-sold for US\$3.5.



Asiatic Black Bear
Selenarctos thibetanus

© E.P. Gee

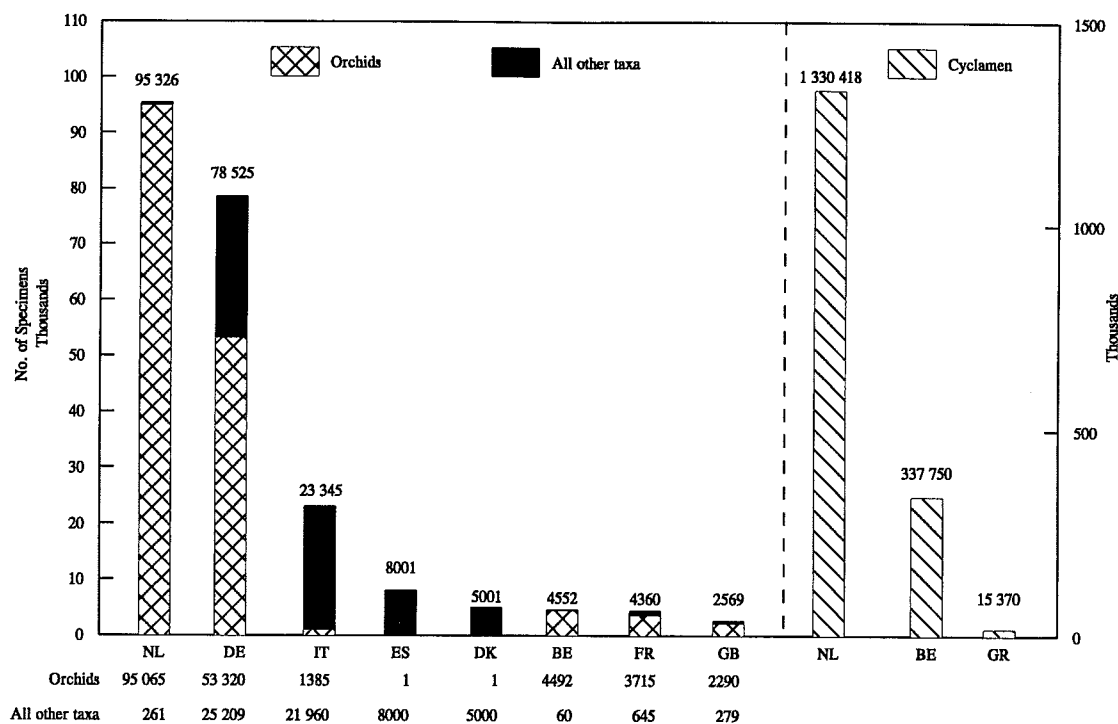


Figure 1. Imports of plants to the EU in 1989 reported as wild-collected or of unknown source.

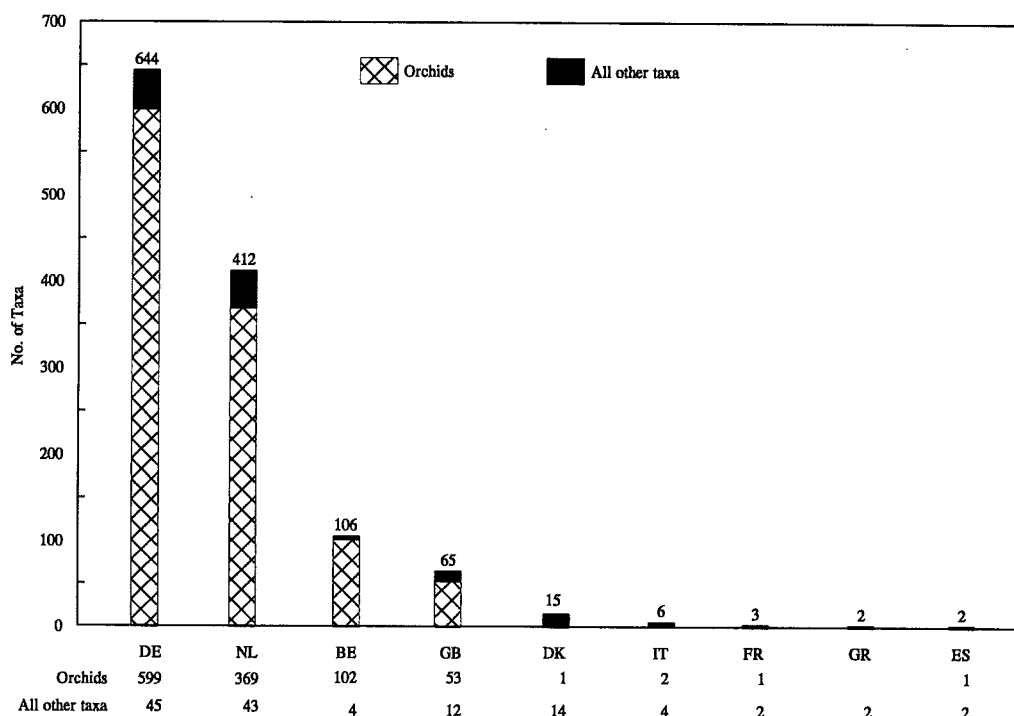


Figure 2. Imports of plants to the EU in 1989 reported as wild-collected or of unknown source. Source: EU CITES annual report

The Netherlands and Belgium imported an average of 3460 and 3186 specimens per taxon imported, respectively. Germany, on the other hand, imported an average of 122 specimens per taxon imported. The plant trade in the first two countries is directed more towards the mass market, whereas in Germany it is focused on the specialist trade, with high species diversity and low volumes.

EXPORTS TO THE EU

Specimens

Turkey is the main exporter of wild-collected plants to the EU, although the majority of orchids that are exported to this region derive from Thailand (135 895). The bulk of the 37 788 exports recorded by Brazil may have been artificially propagated and incorrectly reported as being of wild origin/source unknown.

Lower volumes of trade in wild plants to the EU are reported by Madagascar, South Africa, Peru, Philippines, Australia, Papua New Guinea and the former Soviet Union.

Taxa

Plant exports from Thailand to the EU far exceed those from all other countries in species diversity. A total of 376 orchid taxa were exported from this country in 1989; Peru exported the second-highest figure of plant taxa (122), of which 115 were orchids.

Taxa	Export	Import	Specimens
Cactaceae spp.	BR	IT	(21 619)
<i>Saussurea lappa</i> , ¹ roots, kg	IN	FR	(25 000)
<i>Cycas revoluta</i> , seeds	AU	IT	(30 000)
<i>C. revoluta</i> , seeds	IL	IT	(25 000)
<i>C. revoluta</i> , seeds	JP	NL	231 000
<i>C. revoluta</i> , kg	BR	IT	(25 000)
<i>Macrozamia communis</i> , seeds	AU	IT	4 000
<i>M. spiralis</i> , seeds	AU	IT	5 000
<i>Dicksonia sellowiana</i>	BR	ES	8 000
<i>D. sellowiana</i> , timber, pieces	BR	NL	6 200
<i>Aloe ferox</i> , extract, kg	ZA	DE	9 912
<i>A. ferox</i>	ZA	DE	7 899
<i>Calanthe rosea</i>	TH	NL	4 022
<i>Paphiopedilum callosum</i>	TH	NL	52 484
<i>P. niveum</i>	TH	NL	4 408
<i>P. sukhakulii</i>	TH	NL	10 364
<i>Cyclamen cilicium</i> ²	TR	BE	7 000
<i>C. cilicium</i> ²	TR	NL	179 335
<i>C. coum</i> ²	TR	BE	120 000
<i>C. coum</i> ²	TR	NL	175 000
<i>C. hederifolium</i> ²	TR	BE	210 750
<i>C. hederifolium</i> ²	TR	NL	976 083
<i>C. persicum</i> , ² roots	BG	GR	15 320

Table 2. Trade volumes exceeding 4000 units.

Figures in brackets refer to material likely to have been artificially propagated or collected from naturalized populations. ¹ = listed in CITES App. I; ² = listed in Annex 2 of EC Regulation 3626/82
Source: EU CITES annual report.

MAIN TAXA IN TRADE

Cyclamen

Cyclamen, listed in CITES Appendix II and Annex C2 of EC Regulation 3626/82, (with the exception of *C. balearicum*, listed in Annex C1), is the only genus for which trade was well documented in 1989, accounting for about 80% of wild-collected exports, comprising over 1.6 million specimens of five species. This trade can be used as an indicator of the structure of the trade for other bulb taxa which may be traded in similar volumes but for which trade is less well documented. Another genus traded in large volumes, *Galanthus* (snowdrops), was not listed in CITES Appendix II until 1990 and trade figures for 1989 are therefore not available.

Only three countries - the Netherlands, Belgium and Greece - report direct imports of *Cyclamen* from outside the Community, Turkey being the main supplier. For 1989, Turkey had an export quota of 1.5 million *Cyclamen* tubers. According to Figure 3, it is clear that this quota was exceeded by almost 167 000 tubers, or more than 10%.

Cycads

The only other plant group of which specimens were traded in comparatively large amounts in 1989 were the cycads Cycadaceae. Although seeds of Appendix II plant species are not covered by CITES and there is therefore no international obligation to document such trade, large numbers were recorded in trade (Table 2): *Cycas revoluta* seeds accounted for 289 000 (Table 1), of which 30 000 were exported from Australia, 25 000 from Israel and 234 000 from Japan; most of the shipments went to the Netherlands (231 000). *Cycas revoluta* is native to the Ryukyu Islands of Japan and, although the number of specimens in the wild is not known, the species is thought not to be threatened (Osborne, 1993). However, if all seeds exported from Japan originate from wild sources, this certainly would be of concern for the survival of the natural populations. The export of 25 000 kg of living plants of wild *Cycas revoluta* by Brazil (Table 2) is likely to refer to cultivated specimens as the species does not occur in that country and there is no evidence to support the possibility of their being re-exports.

A large number of seeds of *Macrozamia* are recorded as imported from Australia in 1989: 9000 by Italy, and 1450 live plants and 400 "dried plants" by Germany. However, Australia's annual report for that year only records the export of 13 210 leaves and 3400 stems of two *Macrozamia* species, to Germany and to the Netherlands.

³ All figures should be regarded as minimum values, as imports recorded as seeds, extract, kg., etc., are not incorporated.

⁴ Owing to the frequent reporting to generic or family level, these figures can only be interpreted as minimum values.

Species	Export	Import	Specimens
<i>Aloe pillansii</i>	ZA	GB	1
Alerce			
<i>Fitz-Roya cupressoides</i>	AR	DE	6
<i>Laelia jongheana</i>	BR	GB	1
Kuth, roots, kg			
<i>Saussurea costus</i> (=lappa)	IN	FR	(25 000)
Tobusch's Fishhook Cactus, seeds			
<i>Ancistrocactus tobuschii</i>	US	NL	(10)
Living Rock Cactus, seeds			
<i>Ariocarpus trigonus</i>	US	NL	(20)
Needle-spined Pineapple Cactus, seeds			
<i>Echinomastus erectocentrus</i>	US	NL	(100)
Mariposa Cactus, seeds			
<i>E. mariposensis</i>	US	NL	(10)
Feather Cactus, seeds			
<i>Mammillaria plumosa</i>	US	NL	(40)
Brady's Pincushion Cactus, seeds			
<i>Pediocactus bradyi</i>	US	NL	(10)
Despain's Cactus, seeds			
<i>P. despainii</i>	US	NL	(15)
Gramma-grass Cactus, seeds			
<i>P. papyracanthus</i>	US	NL	(100)
Paradine's Cactus, seeds			
<i>P. paradinei</i>	US	NL	(20)
Peebles' Navajo Cactus, seeds			
<i>P. peeblesianus</i>	US	NL	(10)
Mesa Verde Cactus, seeds			
<i>Sclerocactus mesae-verdae</i>	US	NL	(20)
Wright's Fishhook Cactus, seeds			
<i>S. wrightiae</i>	US	NL	(20)
<i>Turbinicarpus lophophoroides</i> , seeds	US	NL	(100)
<i>T. schmiedickeanus</i> , seeds	US	NL	(200)

Table 3. Trade in Appendix I plants.

Figures in brackets refer to material likely to have been artificially propagated or collected from naturalized populations.

Source: EU CITES annual report.

This can be regarded as a typical example of the incomplete reporting of the plant trade. While it is clear that the seed imports took place, it remains unclear whether the live plants and leaves actually left Australia or whether the figures recorded in Australia's annual report instead represent the number of permits granted.

Other groups

At least a further 10 taxa comprising more than 4000 specimens reported as wild-collected or of unknown source were traded in 1989 (Table 2). These taxa included three slipper orchid *Paphiopedilum* species (listed in Appendix II at the time), the tree fern *Dicksonia sellowiana* (Appendix II), Kuth *Saussurea costus* (=lappa) (Appendix I), and aloe *Aloe ferox*, the latter being popular both as a house plant and for use in the cosmetics industry (Oldfield, 1993).

The export of tree ferns, used as a material for mounting orchids, is in compliance with Brazilian legislation. The EU trade in orchids is discussed on pages 45-46.

TRADE IN CITES APPENDIX I/ANNEX C1 SPECIMENS

Trade in wild-collected Appendix I specimens sums 683 specimens plus 25 000 kg of 18 species (Table 3). Particularly noteworthy is the importation of 25 t of *Saussurea costus* from India to France, a considerable amount that is certain to have been a commercial transaction. The roots of this plant are used both medicinally and, because of their strong, lingering odour, in the production of scents (Mabberley, 1990). It is cultivated in India and this consignment probably originated from cultivated stock. In earlier years, similar exports of *S. costus* are recorded (Anon., 1991): 26 080 kg in 1983, 15 500 kg in 1984 and 22 500 kg in 1985.

The seeds of 14 species of Appendix I cacti imported into the Netherlands from the USA probably refer to a single consignment. Examination of the US annual report for 1989 reveals additional Appendix I cacti seed exports. However, the countries listed as importers did not record these imports in their annual reports. All of these seeds are likely to be from cultivated specimens, although the annual reports concerned do not state this.

The six Alerce *Fitz-Roya cupressoides* specimens were imported by a botanic garden for scientific purposes.

Species listed in Annex C1 of EC Regulation 3626/82 are treated as CITES Appendix I-listed specimens. Only a single Annex C1-listed species - *Cyclamen balearicum* - was recorded as wild-collected in 1989, 50 specimens of which were imported to Greece from Bulgaria. Although these countries were not Parties to CITES in 1989, the former was bound by its membership in the European Community to enforce EC CITES regulations.

QUALITY OF REPORTING

It is indisputable that monitoring the trade in wild-collected plants is only useful if carried out to species level and that without such information, analysis of the trade and its impact on populations cannot be carried out effectively. Few countries undertake to do this, however. Indeed, two imports into the Netherlands recorded as 'Cactaceae spp.' and 'Orchidaceae spp.' do not even specify the exporting country. The following countries have incorporated higher taxon recordings in their annual report data: Belgium, Denmark, France, Germany (46 cases), Italy, Netherlands (93 cases), and the UK.

Additionally, artificially propagated plants have been declared as being of wild origin/source unknown, as evidenced by the specimens of cacti and *Cycas revoluta* from Brazil, and *Saussurea costus* from India. It is not possible to determine the extent to which wild specimens were falsely reported as artificially propagated.

Annual reports of importing and exporting countries frequently show considerable discrepancies, as is demonstrated with *Macrozamia* and the Appendix I cacti seed exports from the USA, for example. Exporting countries are often found to have reported the number of permits issued rather than the actual consignments that have left the country.

RECOMMENDATIONS

Improvement in quality of reporting. CITES Parties should be advised that documentation of the plant trade must be as complete as possible. To this end, EU countries should examine what steps can be taken to ensure that export documents for wild-collected plants contain the name of the species and refuse those that do not bear such information. The correct source - either "wild" or "artificially propagated" - should be documented.

Inspection. EU Member States should compile a list of those plant groups in which there is a likelihood of trade in wild-collected specimens. These taxa should be regularly inspected on entry into and in transit through the EU.

ACKNOWLEDGEMENTS

My special thanks to H. J. Schmitz-Kretschmer and B. Protz who contributed to the graphical display of the results. I am also grateful to Harald Martens, Noel McGough, and especially Ger H. van Vliet for their helpful comments on the draft.

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The following country abbreviations have been used in this report:

AR - Argentina	ET - Ethiopia	NZ - New Zealand
AU - Australia	FR - France	PE - Peru
BE - Belgium	GA - Gabon	PG - Papua New Guinea
BG - Bulgaria	GB - UK	SG - Singapore
BN - Brunei Darussalam	GH - Ghana	SR - Suriname
BR - Brazil	GR - Greece	SU - USSR
BZ - Belize	HN - Honduras	TH - Thailand
CI - Côte d'Ivoire	IL - Israel	TR - Turkey
CL - Chile	IN - India	TW - Taiwan
CO - Colombia	IT - Italy	US - USA
CR - Costa Rica	JP - Japan	VE - Venezuela
DE - Germany	KM - Comoros	VN - Viet Nam
DK - Denmark	LK - Sri Lanka	XM - South America
DM - Dominica	MG - Madagascar	ZA - South Africa
EC - Ecuador	MY - Malaysia	ZW - Zimbabwe
ES - Spain	NL - Netherlands	

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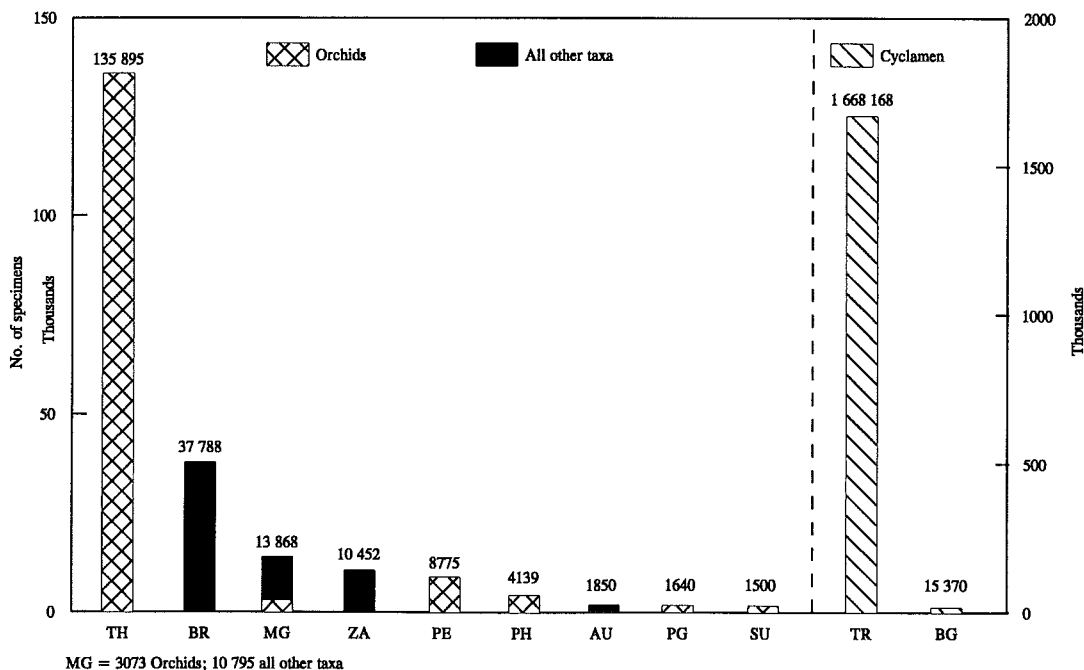


Figure 3. Exports of plants to the EU in 1989 reported as wild-collected or of unknown source. A further nine countries with only occasional exports have been incorporated in the calculations but are not plotted here. See also footnotes³ and ⁴ on page 33. Source: EU CITES annual report

Uwe Schippmann, Plants Officer, CITES Scientific Authority, Bundesamt für Naturschutz, Konstantinstrasse 110, D-53179 Bonn, Germany.

European Definition of Medicine Takes Root

Changes to align UK and EC legislation more closely with respect to pharmaceuticals are scheduled to be complete by 1 January 1995, coinciding with the establishment of the new European Medicines Evaluation Agency in London. Herbal remedies are at present defined as medicinal products and, as such, the overall control of their manufacture and sale in the UK is governed by the *Medicines Act* (1968). In certain circumstances and according to strict criteria, over-the-counter remedies in this country are given a wider exemption from licensing than is permitted under EC directives, which require all industrially produced medicines to be covered by a licence. The research and administrative costs of obtaining such a licence, however, are claimed to be near prohibitive to most prescribers of herbal products.

Currently a few hundred herbal treatments are licensed as medicines under the *Medicines Act*, but the great majority (about 80%) are not. Despite this, unofficial recognition that these preparations are used medicinally has led to increasing quality control over years of use, including compliance with exact botanical definitions and conditions of hygiene, and screening for adulteration. Moreover, research into the safety and efficacy of herbal medicines has been increasing, mirroring the growth in popularity of such treatments at a rate of around 10% a year. The market for herbal pharmaceuticals in the UK is valued at over £150 million a year.

Herbal products of those companies which could not afford the process of licensing according to the terms of European law may be classified only as foods. As such, they would have limited scope to claim pharmaceutical properties, less chance of attracting research funding, and diminished incentive to comply with standards applying to recognized medicines, including a code of practice for professional herbalists. Clinical trials and trial by use of certain plant-based products have already demonstrated their possible worth, yet many would be unlikely to be developed as medicines under EC product-licensing procedures. Examples include preparations based on: Feverfew *Tanacetum parthenium*, confirmed in clinical trials as having potential to cure migraine and possibly arthritis; Ginkgo *Ginkgo biloba*, which is the most widely prescribed herbal drug in Germany at a cost of DM286 million (US\$190 million) to the health service annually, and is used to cure circulatory disorders, amongst other complaints; St John's Wort *Hypericum*, for which there is growing clinical evidence of efficacy in treating depression; and *Echinacea*, used to treat some viral and fungal infections.

The application of EC legislation under UK law would not affect direct use of raw herbs, nor restrict the prescription of herbal preparations made up on the premises of a herbal practitioner. Tinctures and other stock products bought in by herbalists and pre-packaged mixtures sold in health food shops and pharmacies would, however, require licensing as medicines before their dispensation as such.

The Department of Health plans to present new legislation to Parliament around the end of November, to harmonize control of medicines in the UK with EC directives, although the future status of herbal medicines under the law has not yet been finally decided.

The British Herbal Medicine Association Press Release, October 1994; C. Steward, pers. comm., 24 October 1994; Spokesperson of the UK Department of Health, pers. comm., 24 October 1994.

Support for Mahogany Trade Controls

The proposal to include Brazilian Mahogany *Swietenia macrophylla* in CITES Appendix II has received public support from the hardwood importer Timbmet Ltd of Oxford, UK. A spokesman for the company explained that it was responding to reports that the majority of Brazilian Mahogany, about 35% of which is exported to the UK, is illegally logged.

The UK Timber Trade Federation, of which Timbmet Ltd is a member, is against the listing proposal, citing Brazilian opposition to CITES listing and their belief that logging Brazilian Mahogany does not endanger the species as reasons for its views.

A proposal to list the genus *Swietenia* in Appendix II at the eighth meeting of the Conference of the Parties to CITES, in 1992, was withdrawn.

Tropical Timber Journal, 8 October 1994; Financial Times (UK), 26 October 1994

Timber Felling Enters the Logbook

A method of extracting timber that is designed to minimize the damage logging can inflict on tropical forests is being employed in Sarawak, Indonesia.

Erickson Air Crane, a US company contracted to WTK timber firm in Sibul, transports cutters and other workers by helicopter into logging areas; long lines suspended from the aircraft are then lowered to remove the cut timber from the forest. This highly skilled and expensive procedure was developed with a view to limit the damage that is caused to the environment with conventional crawler-tractor operations. Aerial harvesting reduces the need to build roads into logging areas, which can destroy habitats and open up areas to hunters and shifting cultivation practises. The company, which has contracts in Canada, the USA, Norway, Papua New Guinea and New Zealand, has removed some 160 000 m³ of logs by helicopter over the past year.

Small pockets of forest, hitherto inaccessible or too expensive to log using conventional methods serve as a refuge to wildlife forced out of logged areas and there is concern that such areas may become vulnerable to such methods of extraction.

Straits Times (Indonesia), 5 May 1994; TRAFFIC International

TRAFFIC staff assisted authorities in many of the investigations reported below that occurred in regions covered by a TRAFFIC office or representative.

EUROPE

BELGIUM

On 27 July 1994, 2 raw python *Python* sp. skins, purchased in Guinea by a Romanian sailor, were seized at Antwerp harbour.

Two shipments of ivory, painted or dyed brown, and sent through the post from Zaire to China, via Brussels, were seized in August 1994.

On 9 August, Customs officers seized over 100 kg of raw ivory whilst in the course of routine inspection of postal parcels. The consignment consisted of 8 cardboard boxes that had arrived on a Sabena airlines flight from Kinshasa, Zaire. The ivory had been cut into some 1660 small blocks that had been stained brown, similar to methods employed in other ivory smuggling cases in Belgium, South Africa, and the UK (see *TRAFFIC Bulletin* 14(2):75,76).

A further shipment of stained ivory was seized at Zaventem on 23 August by the Drug section of the Customs Investigation Service. A total of 63.5 kg of ivory contained in 5 parcels had arrived through the post, again from Kinshasa and bound for the same address in Shanghai as the first shipment; the ivory had been processed into some 700-800 machine-cut pieces, each about 10 cm in length.

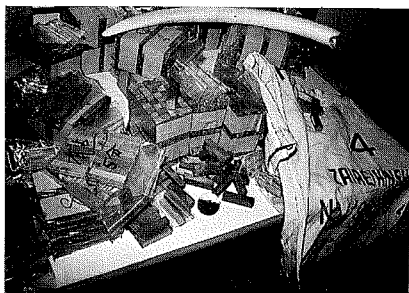
TRAFFIC Europe; World Wide Fund for Nature, Press Release, 23 August 1994

GERMANY

In February 1994, Customs officers at Munich airport confiscated 19 live Radiated Tortoises *Geochelone radiata* (App. I) and 1 live Spider Tortoise *Pyxis arachnoides* (App. II). The animals were discovered during a spot check of luggage which belonged to a tourist returning from Madagascar. The legs and heads of the reptiles were bound with adhesive tape and the bodies secured with staples in boxes designed to carry camera lenses. The tourist claimed the animals were for personal use.

The inspection of luggage from Madagascar reportedly has become more rigorous.

TRAFFIC Europe



Stained ivory seized at Zaventem airport, Belgium



© Hauptzollamt München-Flughafen

Radiated Tortoises *Geochelone radiata* (App. I) seized at Munich airport

GIBRALTAR

On 19 May, Customs authorities learned that a ship which had docked to carry out repairs, had sailed from Equatorial Guinea, bound for Gran Canaria, with apes and parrots on board; its original cargo of timber had already been unloaded at Valencia.

On 22 May, Customs personnel, assisted by the CITES Scientific Authority and the police, seized the following from the vessel: 3 Chimpanzees *Pan troglodytes* (App. I), 34 African Grey Parrots *Psittacus erithacus* (App. II), 2 handbags crafted from skin of West African Dwarf Crocodiles *Osteolaemus tetraspis* (App. I), 6 stuffed Hawksbill Turtles *Eretmochelys imbricata* (App. I), 6 snakeskins (condition too poor to enable identification).

On 31 May, 6 crew members and the captain, all Equatorial Guinean nationals, were charged under the *Endangered Species Ordinance* with illegally importing endangered species and faced fines of up to £5000 (US\$8400) for each specimen. The defendants claimed that all the animals were personal pets.

During the court case, a diplomat from the National Assembly of Equatorial Guinea intervened on behalf of the defendants, claiming that they would lose their jobs for having "brought their country into disrepute"; it was also pointed out that the crew members earned only £14 a month. The case was acquitted.

The parrots were to be placed in Jerez Zoo; Barcelona Zoo, which has a breeding and research programme on the particular subspecies of Chimpanzee seized, offered to care for the primates.

J. Cortes, CITES Scientific Authority pers. comm. to TRAFFIC Europe, June 1994

NETHERLANDS

On 8 February 1994, the General Inspection Service seized a shipment of animals that had arrived from Ghana, bound for Germany. The consignment had accidentally been shipped first to Barcelona,

Spain, where it remained neglected for 3 weeks; consequently, two thirds of the animals were dead on arrival at Schiphol airport. The shipment included 27 East African Black Mud Turtles *Pelusios subniger* (App. III), 3 West African Black Forest Turtles *P. niger* (App. III), 29 Helmeted Turtles *Pelomedusa subrufa* (App. III), 19 Agamid lizards, 13 fat-tailed geckos Gekkonidae, 41 skinks Scincidae, 10 house snakes *Boaedon*, 20 frogs, 15 millepedes and 51 scorpions. The case is under investigation.

On 7 April 1994, Customs and General Inspection Service officers at Rotterdam harbour seized 20 m³ of tree ferns *Dicksonia* (App. II) arriving from Brazil without an import permit. A file has been opened on the importer but no further investigation of this case will be made.

On 7 June 1994, Customs and General Inspection Service officers discovered a large shipment of Queen Conch shells *Strombus gigas* (App. II) that had arrived from Haiti, supported only in part by a permit; some 22 939 shells were seized.

On 9 June, a further 16 000 *S. gigas* shells, again having originated in Haiti, were seized in Rotterdam harbour.

Also seized in that month were 13 296 corals Scleractinia from the USA that were not supported by an import permit.

In June 1994, 2 small cats supplied by the same Belgian dealer were seized from separate addresses in the country. An Ocelot *Felis pardalis* (App. II) was seized from a house where only a German CITES permit for another small cat species could be presented in support of the possession; a court hearing of the case is pending. A Serval *F. serval* (App. II) was removed from another residence where supporting Belgian CITES permits were found to be false. The owner has been fined Dfl.5000 (US\$2950), of which payment of Dfl.2500 was suspended.

SEIZURES AND PROSECUTIONS

NETHERLANDS ctd

On 12 June 1994, Customs officers at Schiphol airport discovered some 3000 Horsfield's Tortoises *Testudo horsfieldii* (App. II) stacked 5 layers deep in 6 crates. The shipment had come from Moscow, Russia, and was destined for Los Angeles, USA. Some 127 tortoises had died and the remaining specimens were seized. A CITES permit accompanied the shipment but was considered to be invalid as the method of transport had contravened welfare regulations.

On 15 June 1994, the General Inspection Service at Schiphol airport seized 150 Royal Pythons *Python regius* and 51 African Pythons *P. sebae* (both App. II); an export permit accompanying the shipment stated that all the specimens had been captive bred in Ghana. However, as no import permit could be produced, the animals were seized.

TRAFFIC Netherlands; General Inspection Service

UK

Customs officers investigating tax fraud by a Norwich businessman, discovered documentation at his home that revealed that he had illegally imported 40 Red-bellied Parrots *Poicephalus rufiventris* (App. II), disguised with paint to avoid an EU import ban.

William Crossland was arrested in April 1992 for failing to pay import duty on 684 reptiles worth US\$3365. Amongst the documents found at his home which showed Customs duty fraud, was a fax from him to a supplier in Tanzania which expressed concern that a shipment of birds he had ordered would be confiscated by Customs officers if the "paint job" on the specimens was not perfect. The parrots were imported from Tanzania in a shipment of 120 Meyer Parrots *Poicephalus meyeri* in August 1990. A licence application to import Red-bellied Parrots had been refused by the Department of the Environment a year earlier.

On 6 June 1994, Crossland pleaded guilty to being knowingly concerned in the fraudulent evasion of EC regulation 3143/87 with regard to a consignment of Red-bellied Parrots. He also pleaded guilty to five charges of fraudulent evasion of Customs duty on birds and reptiles between August 1989 and April 1992. Three other duty fraud charges and one further count of smuggling a Leopard Tortoise *Geochelone pardalis* and Pancake Tortoises *Malacochersus tornieri* (both App. II) were left on file.

Prior to the hearing Crossland paid £4500 (US\$7580) duty to Customs; after the trial he was ordered to pay a further £2129 outstanding duty on undervalued invoices. He was also fined £1000 and ordered to pay £1000 costs. The judge stated that the fines were so low because of Crossland's apparent lack of assets.

Skyport, 10 June 1994

Two shipments of tablets containing bear bile were recently shipped to Heathrow airport, in transit from Thailand to Israel. Both shipments, on 18 May and 19 June 1994 and containing 50 tablets and 100 tablets, respectively, were seized. Also seized from the mail, on 12 September 1994, were 20 packets of plasters described as containing Tiger bone; the packages were in transit from Tanzania to Australia.

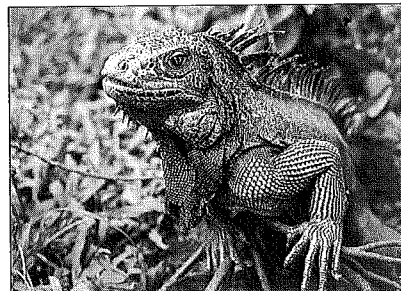
On 15 July 1994, at Heathrow airport, a shipment of 200 live Green Iguanas *Iguana iguana* (App. II) arriving from the USA was seized.

On 20 July 1994, at Heathrow airport, Customs officers seized a shipment of live reptiles that had arrived on a flight from Pakistan. Amongst the 109 specimens were 19 Indian Sand Boas *Eryx conicus* and Blunt-tailed Sand Boas *E. johnii* and 32 Hardwick's Spiny-tailed Lizards *Uromastyx hardwickii* (all in App. II).

Further investigation of the importers led to the seizure of a further 15 reptiles from a shed in the garden of a house in Cardiff, Wales, including a caiman and Green Iguanas *Iguana iguana* (App. II). The specimens reportedly were to be distributed to reptile enthusiasts across Europe.

The animals are being cared for by reptile specialists. Two men have been arrested in connection with the offence; one of the accused has been charged with illegal importation and the result of the trial is pending.

Portcullis, September 1994



Green Iguana *Iguana iguana* (App. II)

On 1 September 1994, Customs officers at Heathrow airport apprehended a passenger as he entered the UK with 2 holdalls and 2 cardboard boxes which were found to contain 199 Horsfield's Tortoises *Testudo horsfieldii* (App. II). The animals were seized and enquiries are continuing.

On 1 October 1994, Customs officers at Heathrow airport discovered 85 aloe *Aloe* (App. I/II) plants contained in a consignment of fruit and vegetables arriving from Venezuela. The plants had been harvested by being cut at the base of the stem. As only the leaves of aloes can be traded without a permit, the specimens were seized.

TRAFFIC International

AFRICA

MALAWI

On 22 February 1994, Customs officers at Kamuzu International airport in Lilongwe seized 6 Hippopotamus teeth *Hippopotamus amphibius* (App. III/Ghana) from an employee of the French Embassy who was attempting to export them to France. The case is still under investigation, but diplomatic immunity would prevent any prosecution.

On 12 July 1994, officials from Zambia's Species Protection Department of the Anti-Corruption Commission, assisted by staff of TRAFFIC East/Southern Africa, confiscated 2 Chimpanzees *Pan troglodytes* (App. I) and 1 African Grey Parrot *Psittacus erithacus* (App. II) from a travelling circus in Lusaka. The circus had visited a number of African countries reportedly acquiring a number of animals illegally, before arriving in Zambia in June. The animals were taken to Munda-a-Wanga zoo in Lusaka pending their relocation to Chifunshi Chimpanzee Orphanage Centre. It is not yet known whether charges will be brought against the circus owner.

On 30 July 1994, at Mchesi Market in Lilongwe, wildlife officials seized 1 Aardvark *Orycteropus afer* (App. II) foot, a pair of warthog *Phacochoerus aethiopicus* teeth and skins of 1 Cape Pangolin *Manis temminckii* (App. I), 1 Genet *Genetta genetta*, 1 civet *Viverra civetta* and 1 Leopard *Panthera pardus* (App. I/II); the latter was offered for sale for MK550 (US\$40). The alleged owner of the specimens was arrested and is awaiting trial.

TRAFFIC East/Southern Africa

SOUTH AFRICA

On 14 June 1994, a man was arrested after allegedly trying to sell a 6-kg rhino horn in Brackenhams, Richards Bay; the horn is believed to have been smuggled in from Mozambique.

The Zululand Observer (South Africa), 17 June 1994

On 12 July 1994, in Port Elizabeth Regional Court, Jan Gabriel Vermeulen of Bloemfontein was convicted of dealing in cycads illegally. Vermeulen, and a co-accused who was found not guilty, had pleaded not guilty to purchasing the plants illegally in Bathurst in June 1993 and transporting them to the Orange Free State without a permit. In that month, a Bathurst farmer who sold the rare species to Vermeulen was fined R10 000 or sentenced to 18 months' in gaol, with a further R20 000 conditionally suspended for five years.

Vermeulen was fined R15 000, or sentenced to 9 months' imprisonment; he was also fined a further R22 000 conditionally suspended for five years.

The plants were confiscated and returned to the Eastern Cape for replanting.

Eastern Province Herald (South Africa), 13 July 1994

SUDAN

In July 1994, wildlife authorities in Khartoum seized skins of 7000 monitors *Varanus* (App. I/II), 200 Nile Crocodiles *Crocodylus niloticus* (App. II) and 1000 pythons *Python* (App. II) in the Nile State. The goods were being transported in 2 lorries which were also confiscated under the Sudan Wildlife Act 1986. Investigations are continuing.

TRAFFIC East/Southern Africa

ZAMBIA

On 25 July 1994, officers of the Species Protection Department confiscated 216 elephant tusks concealed under a consignment of beer in a military vehicle being transported by an army major, a sergeant, and a civilian; the cargo was on its way from the west of the country to the capital, Lusaka. All suspects were apprehended.

Two days later, Government officials raided a house in the capital and arrested a businessman who admitted to having purchased the ivory from the army major; the businessman confirmed that the tusks had come from Angola, although it is not certain that all had originated from there.

This is the largest seizure in Zambia in recent years and the third-largest in Africa since records of seizures commenced in January 1990, following the international CITES ban on ivory trading.

The Species Protection Department, with the support of WWF, is pursuing investigations into the case with other government departments in the region.

WWF Press Release, 1 August 1994

ASIA

HONG KONG

On 25 July 1994, officers of the Agriculture and Fisheries Department seized 71 pairs of spectacle frames, thought to be crafted from tortoiseshell, from 10 outlets of a chain store selling spectacles.

Offenders are liable to a fine of HK\$25 000 (US\$3240) on first conviction and HK\$50 000 plus six months' imprisonment for a further offence.

There were 273 seizures in the first 6 months of the year in connection with illegal importation, exportation and possession of endangered species, of which 29 were related to sea turtles.

Agriculture & Fisheries Department Press Release, 25 July 1994

INDIA

On 19 June 1994, a bag of antlers was seized from a bus at Bharvedi and one man arrested. The antlers, of Sambar *Cervus unicolor*, comprised 30 cut pieces including 11 bases from a maximum of 10 individuals, and weighed a total of 10 kg. Shed antlers may be collected legally with a permit issued by the State Forest Department but, on this occasion, no such permit could be produced.

On 7 August 1994, Customs authorities at New Delhi airport seized 6.1 kg of Agarwood *Aquilaria malaccensis* and 1.123 kg of Agarwood oil from the luggage of a passenger leaving for Dubai, United Arab Emirates. The passenger reported that he had purchased the wood and oil from a trader in Assam, in which State the extraction of Agarwood is banned.

On 10 August 1994, the Madhya Pradesh police seized 50 kg Tiger *Panthera tigris* (App. I) bones, a "floating" or "lucky" bone (a part of the Tiger not yet identified anatomically), two Tiger skulls, 145 Tiger

claws, 7 Tiger teeth, and 1 bear gall bladder. Two persons were arrested and, following interrogation, skins of 3 Tigers and 1 Leopard were seized and an additional person arrested.

In August 1994, at Indira Gandhi International airport, Customs officers seized 4 cartons containing thousands of insects, mostly butterflies and moths, which had been carefully packed in envelopes and placed in plastic boxes. The specimens, not all of which have been identified, included many Himalayan species from the States of Himachal Pradesh, and Jammu and Kashmir. Two German nationals were detained but later released owing to the fact that identification of the insects had not been possible; the specimens, however, were confiscated.

On 13 September 1994, wildlife enforcement officials of Central and State Government, and the Deputy Director, Wildlife Preservation (Northern Region), seized the skin of a Leopard *Panthera pardus* (App. I/II) from a person in New Delhi. The authorities were acting on information provided by TRAFFIC India. It is hoped that on interrogation further skins believed to have been in the seller's possession might be recovered.

On 15 September 1994, following information received via TRAFFIC India, police arrested members of a gang of poachers, following 2 successive raids in Lakhimpur Kheri, in Uttar Pradesh. In the first incident, a Tiger skin, a musk deer *Moschiferus* pod, a loaded pistol and a knife were seized from three men; hours later a 15 kg bag of Tiger bones and a second Tiger skin were seized from a further 2 members of the gang. According to 1 of the accused, this skin had been removed from an animal that the gang had caught in a steel trap near Dudhwa National Park.

Days earlier, police also seized 2 Leopard skins from animals poached by the gang and kept by them across the border in Nepal for safe-keeping.

TRAFFIC India; *New Scientist*, 27 August 1994

MALAYSIA

On 5 July 1994, officers of the Wildlife and National Parks Department arrested a man said to be supplying wild animal meat to local restaurants. In a refrigerator at the accused's home, carcasses of Malayan Pangolins *Manis javanica* (App. II), porcupines, eagles, owls and 4 Leopard Cats *Felis bengalensis* (App. II) were found; all specimens recovered are of species protected by law in Malaysia. The man faces a maximum fine of RM5000 (US\$2000), or three years' gaol, or both.

At a press conference, the director of the department, Zainuddin Shukor announced that raids would continue to be carried out on restaurants and Chinese medical shops to clamp down on the sale of protected wildlife as exotic foods or medicines.

New Straits Times (Peninsular Malaysia), 5 July 1994

SOUTH KOREA

On 24 May 1994, two Russian nationals attempting to smuggle approximately 8 kg of musk into the

Republic of Korea were arrested by Customs officials at Kunsan Port. Unable to produce a required import permit, the musk was confiscated from the smugglers, who now await trial.

Minho Lee, Deputy Director, Global Environment Division, Ministry of Environment, Republic of Korea in litt. to CITES Secretariat, 7 June 1994.

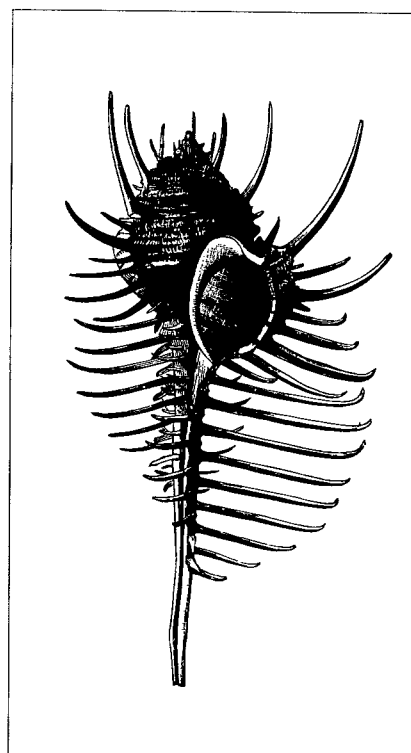
TAIWAN

On 7 August 1994, police in Taiwan seized 12 rhino horns weighing 20 kg, allegedly smuggled by fishing boat from Malaysia five months earlier. Four of the horns were seized in Pintung, while the others were later seized from the Ryukyu Islands. The case is under investigation.

On 4 October 1994, 400 pieces of elephant ivory weighing a total of 2000 kg were seized from a warehouse in Keelung after arriving by cargo ship from Hong Kong; the shipment is thought to have travelled to Hong Kong from Djibouti. This is the largest shipment of illegal ivory ever seized in Taiwan. The case is being investigated

On 5 October 1994, a piece of luggage being passed through an X-ray machine was found to contain a rhino horn; the item had arrival at Chiang Kai-shek International airport on an Eva Air flight from Singapore. A Taiwanese national was apprehended and the case reported to the police authorities. The horn, which weighed 980 g, was confiscated.

TRAFFIC East Asia-Taipei; *The China Post (Taiwan)*, 9 August 1994/5 October 1994



Murex sp.

OCEANIA

AUSTRALIA

On 30 May 1994, NSW Fisheries officers acting on information supplied by commercial and recreational fishermen seized an illegal catch of 8 Southern Bluefin Tuna *Thunnus maccoyi* at Sydney Fish Market and a further 8 specimens from a property on the south coast. The Minister for Fisheries, Mr Causley, announced on 1 June that the Fisheries officers would target all commercial and recreational fishermen in a bid to stop the black market trade in this species and the Yellowfin Tuna *T. albacares*.

On 18 August 1994, Jesper Juul Hansen, the most senior officer in the Danish police force, was charged under the *Wildlife Protection (Regulation of Exports & Imports) Act 1982* with attempting to export Australian native lizards without a permit. The charges related to 1 *Diporiphora australis*, 2 *Tympanocryptis tetraporophora* and 7 *Cryptoblepharus plagiocephalus*; he was also found in possession of 7 *C. littoralis*. Hansen was found guilty and fined A\$1200 (US\$885). Shortly afterwards, when trying to leave Australia, he was found in possession of a number of butterflies *Lepidoptera* and a longicorn beetle *Cerambycidae*, wild-collected from the Townsville region. Hansen appeared in court again on 26 September 1994 and was charged under the same legislation with attempting to export native insects without a permit. He was fined A\$2000 and ordered to pay A\$45 costs within 72 hours or face 6 days' imprisonment.

On 1 September 1994, an Italian national faced charges under the *Wildlife Protection (Regulation of Exports & Imports) Act 1982* in relation to attempting to export 10 kg of native molluscs from Australia without the required permit. Amongst the shells, seized in Cairns, were giant clams: 1 *Hippopus hippopus* and 2 *Tridacna* sp.; and 2 *Nanamoria inopinata*, 1 *N. gotoi*, 1 *Zebromoria zebra*, 1 *Amoria guttata*, 1 *Cypraea zoila marginata*, 1 *C.z. venusta*, 3 *Trochus niloticus*, 4 *Lambis lambis* and 1 *Murex longicornis*. Some of the specimens had been collected by the defendant from the wild in Australia and the others had been purchased from shell dealers. The defendant was charged under Section 21B of the *Wildlife Protection (Regulation of Exports and Imports) Act 1982* but the case was dismissed under Section 19B of the *Crimes Act 1914*.

TRAFFIC Oceania; Sydney Morning Herald (Australia), 2 June 1994

AMERICAS

ARGENTINA

Confiscations from a private zoo have taken place following a letter to the Minister of Agriculture in Córdoba by the Director of TRAFFIC South America, enquiring about the origin of the animals in the collection.

On 17 August 1994, the Dirección de Areas Naturales, together with staff of the CITES Management Authority, visited the property. As the owners were unable to provide documentation to prove the origin of some 86 specimens of 37 species, all were moved to a breeding centre in Santa Fé. Appendix I specimens included 3 Southern Pudu *Pudu pudu*, 1 Blue-throated Macaw *Ara glaucogularis*, 1 Scarlet Macaw *A. macao*, 1 Red-fronted Macaw *A. rubrogenys*, 3 Hyacinth Macaws *Anodorhynchus hyacinthinus*; Appendix II specimens comprised: 3 Brazilian Tapirs *Tapirus terrestris*, 1 Jaguarundi *Felis yagouaroundi*, 2 Geoffroy's Cats *F. geoffroyi*, 1 Hamadryas Baboon *Papio hamadryas*, 3 Blue-and-Yellow Macaws *Ara ararauna*, 3 Red-and-Green Macaws *A. chloropterus*, 1 Chestnut-fronted Macaw *A. severa* and 3 Tucuman Amazons *Amazona tucumana*.

TRAFFIC South America

BRAZIL

On 16 June 1994, a Belgian biologist was arrested as he boarded a plane at Recife airport, bound for Belgium. In his possession were 130 hummingbirds (App. II): 14 Glittering-throated Emeralds *Amazilia fimbriata*, 20 Swallow-tailed Hummingbirds *Eupetomena macroura*, 21 White-throated Humming-

birds *Leucochloris albicollis*, 65 Sombre Hummingbirds *Aphantochroa cirrochloris* and 10 Ruby-topaz Hummingbirds *Chrysolampis mosquitus*. The birds have been released in the wild. The Belgian awaits sentencing.

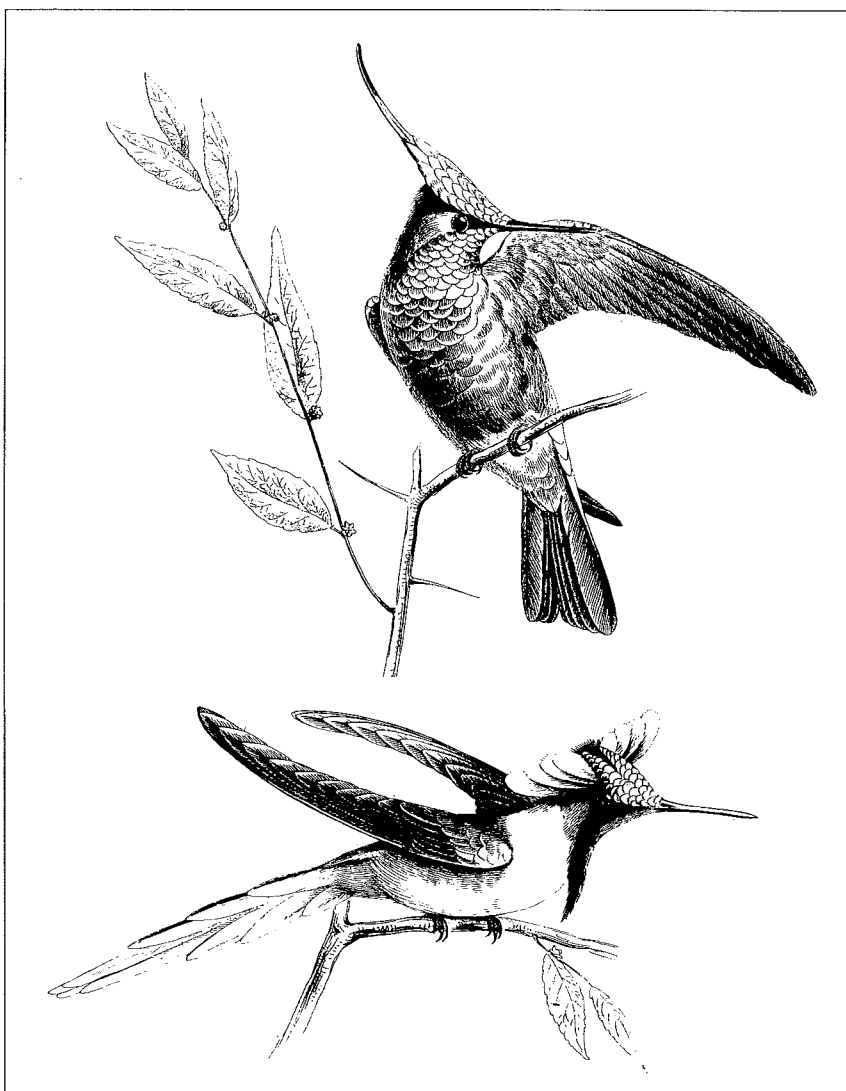
TRAFFIC South America

USA

On 21 September 1994, John Barth, of Las Vegas, Nevada, was sentenced in the US District Court to 24 months' imprisonment for conspiracy to import the eggs of Australian cockatoos into the USA and to sell the birds hatched from those eggs. A further 5 individuals are scheduled to be tried in March 1995.

The trial follows a 3-year investigation which found that individuals hired as carriers travelled to Australia during the nesting season to remove eggs from nesting sites. The group wore specially designed vests to keep the eggs warm; the eggs were then incubated and the young hand-reared and sold to collectors. The eggs were of Rose-breasted Cockatoo *Eolophus roseicapillus*, Red-tailed Black Cockatoo *Calyptorhynchus banksii*, Slender-billed Black Cockatoo *C. latirostris* and Major Mitchell's Cockatoo *Cacatua leadbeateri* (all App II).

US Fish & Wildlife Service Division of Law Enforcement



Hummingbirds Trochilidae (App. II)

Observations on the Impact of Bird Trade Regulations on Bird Populations in Taiwan

William Chi, Zhuncheng Zhang, Zhengtian Lin, Zhezhong Jian and Yongmao Zhen

INTRODUCTION

Taiwan is a small, densely populated island with a long history of animal exploitation, especially of wild birds. In June 1989 the Taiwanese government enacted the *Wildlife Conservation Law* in an attempt to comply with CITES requirements as closely as possible¹. This law regulates both domestic and international trade in certain species of fauna, and prohibits from commercial trade those that are endangered, rare and protected.

In order to determine the impact that regulation of the bird trade might have on bird populations in Taiwan, a study was initiated in Taichung, Taiwan's third largest city and a centre for local bird trade. Several shops known to be involved in the trade in birds were selected and their activities between 1985 and 1986, prior to the passing of the law, during 1989 to 1990 as the law was passed, and in 1991 to 1992, were monitored and recorded. The object of these surveys was to observe changes, if any, in species and numbers of birds sold and in the business activities of the vendors concerned which may have come about as a result of the *Wildlife Conservation Law*.

BACKGROUND

In Taiwan there are three main purposes for the purchase of wild birds: private ownership, release, or consumption for food.

Private ownership mainly involves the acquisition of songbirds and brightly coloured birds, as well as birds of prey, as ornamental cage-birds. Popular species kept for this purpose include the Green-backed Tit *Parus monticolus*, Vivid Niltava *Niltava vivida*, and Crested Goshawk *Accipiter trivirgatus*. Several species of pheasants Phasianidae, pigeons and doves Columbidae are kept for breeding.

Some species are bought in mass quantities for release by Buddhists, who believe that such action will bring blessings on the releaser. Birds bought for this purpose include munias *Lonchura* spp., Eurasian Tree Sparrows *Passer montanus*, Light-vented Bulbuls *Pycnonotus sinensis*, and Red Collared-Doves *Streptopelia tranquebarica*.

During the winter months, a few species of pheasants and pigeons are bought for food. A small number of species are also used in home-prepared medicines: Collared Scops Owl *Otus bakkamoena* and Mountain Scops Owl *O. spilocephalus*, for example, are used for treating asthma.

To a much lesser degree, birds are also collected for the purposes of taxidermy, and a small number of species are bought by research laboratories for observation or anatomy studies.

METHODS

This investigation was carried out in three 12-month periods between 1985 and 1992. In all three periods, weekly observations were made in the bird shops in the Gancheng district of Taichung, and the species and quantities for sale/on display were noted. A total of 58 visits were made between November 1985 and December 1986, 54 visits between November 1989 and December 1990, and 56 visits between November 1991 and December 1992.

Every attempt was made to calculate exact numbers, but estimations were sometimes necessary when larger numbers of birds were encountered. Any decrease in number from one visit to the next was counted as sales or mortality, and any increase was counted as new acquisitions; these figures were then tallied at the end of each month. In reviewing the information presented here it is likely that this procedure underestimated the actual number of birds acquired, as any sales and restocking between visits were not monitored.

RESULTS AND DISCUSSION

Variation in species composition

Between November 1985 and December 1986, prior to the implementation of the *Wildlife Conservation Law*, 36 families and 115 species of wild birds were recorded in trade in the Taichung shops. Between November 1989 and December 1990, following the implementation of the *Wildlife Conservation Law*, 30 families and 82 species were recorded, and between November 1991 and December 1992, 19 families and 41 species were recorded (Table 1). The species composition varied each month, probably influenced by the success, or otherwise, of trapping; the Brown Shrike *Lanius cristatus* is caught with specially designed traps during the autumn on its route of migration through Taiwan.

¹ Taiwan is not eligible to become a member of the United Nations and may not join CITES, a UN-administered treaty.

SHORT COMMUNICATIONS

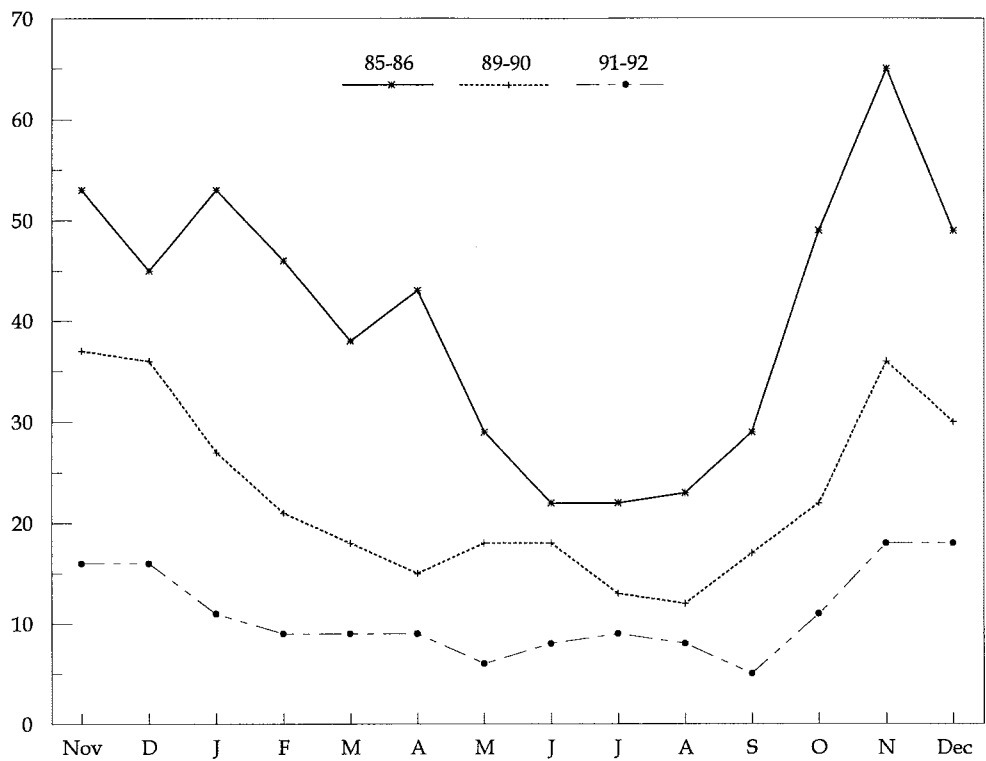


Figure 1. Monthly species acquisitions.

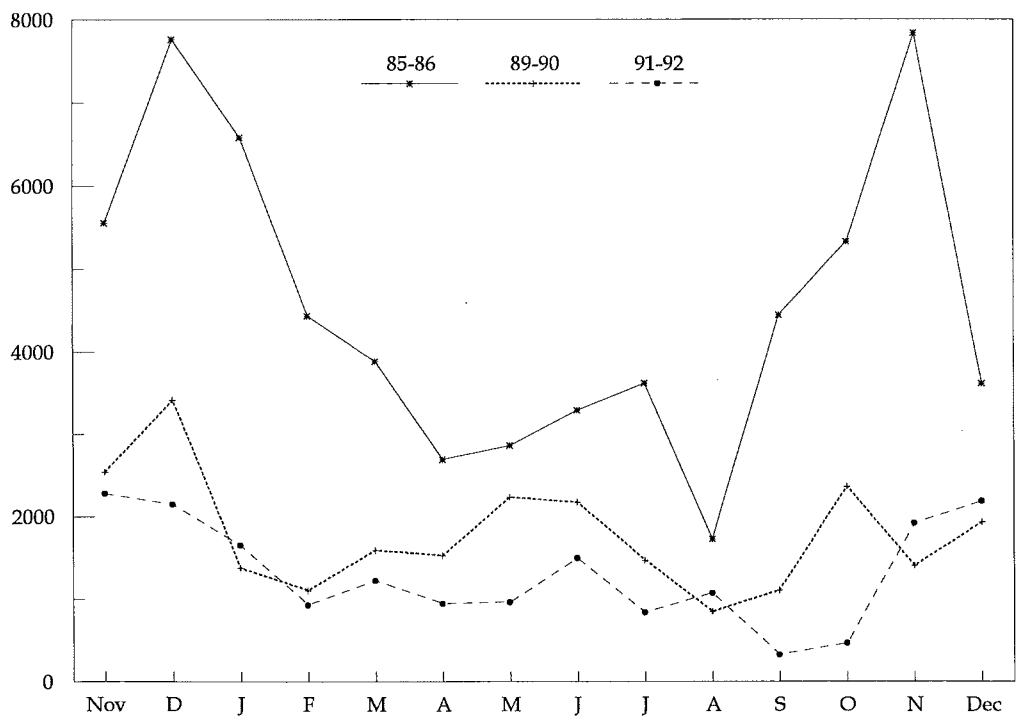


Figure 2. Monthly bird acquisitions.

Survey Period	Families in trade	Resident species (land)	Resident species (water)	Migrant species (land)	Migrant species (water)	Total species
Nov 85-Dec 86	36	72	6	32	5	115
Nov 89-Dec 90	30	54	6	16	6	82
Nov 91-Dec 92	19	24	1	14	2	41

Table 1. Number of bird families and species observed in trade.

Survey Period	Resident birds (land)	Resident birds (water)	Migrant birds (land)	Migrant birds (water)	Total species
Nov 85-Dec 86	62 262	32	1 248	54	63 596
Nov 89-Dec 90	24 866	13	192	13	25 084
Nov 91-Dec 92	17 817	3	207	2	18 029

Table 2. Numbers of birds observed in trade.

Survey Period	Endangered		Rare		Other Protected		Total	
	Species	Birds	Species	Birds	Species	Birds	Species	Birds
Nov 85-Dec 86	1	1	15	268	27	2 184	43	2 453
Nov 89-Dec 90	1	2	10	89	13	272	24	363
Nov 91-Dec 92	0	0	0	0	1	2	1	2

Table 3. Trade observations of species classified as protected under the *Wildlife Conservation Law*.

(Note: the *Wildlife Conservation Law* did not exist during the first survey period; results from this period are included for comparison)

Variation in trade volumes

Common species, not listed in the *Wildlife Conservation Law* - the Red Collared-Dove, Spotted Dove, munias, Eurasian Tree Sparrow, Japanese White-Eye *Zosterops japonicus*, and the Light-vented Bulbul, for example - showed the highest monthly turnover. In the first survey undertaken, a total of 63 596 birds was recorded, in the second 25 084, and in the final survey 18 029, showing a marked downward trend overall (Table 2).

It was observed that the number of species traded increased during the winter months (November to February) (see Figure 1). This may be due to the descent of high-altitude birds to lower altitudes, more accessible to trappers.

The study did not find that large volumes of migratory birds were being sold (2% of the total in the first period, 0.8% in the second, and 1.2% of the total in the third).

Changes in the bird trade business

During the first investigation period there were two major bird vendors (A and B) in the sample area who specialized in the sale of both domesticated and wild birds, and which had high sales volumes. Three other outlets were monitored: shop C specialized in the sale of bird cages and other supplies, shop D sold bird food, and

shop E primarily sold domesticated birds, though all of these sold small volumes of wild birds. In addition there was an animal clinic (F) which occasionally sold wild and domesticated birds.

During the second investigation period, major changes in these businesses were noted. Shops D and E closed down, and shops C and F virtually ceased their sale of wild birds. Only stores A and B continued to sell large volumes of wild birds. Four new pet shops opened, none of which sold birds.

No further changes were observed during the third period of investigation.

Changes attributable to the Wildlife Conservation Law

Prior to the implementation of the *Wildlife Conservation Law*, 15 species now considered rare, and 27 species which are now afforded protection under the Law, were observed. Examples include the Mikado Pheasant *Syrnaticus mikado*, the Taiwan Magpie *Urocissa caerulea*, and the Taiwan Partridge *Arborophila crudigularis*, species that are now considered endangered, rare and otherwise protected, respectively, by law. During the second period of investigation, following the passing of the Law, a marked decline in the trade of protected species was apparent. By the time of the third investigation period, the trade in protected species had seemingly all but stopped (with the exception of 2 Snowy-browed Flycatchers *Ficedula hyperythra*).

Wild-caught birds for sale in Taichung, Taiwan, October 1992.

© J.B. Thomsen



CONCLUSION

The findings of the survey would seem to indicate that the *Wildlife Conservation Law* has significantly reduced the trade in local birds whose status in the wild was of conservation concern. Although trade in some of these listed species may have been moved to the black market, the trade of protected species in the study area of Taichung has declined.

Furthermore, it is apparent that the trade in protected species has declined in other cities (Chi, 1994) and that new bird markets have not been observed in Taichung or elsewhere in Taiwan. Provided that local government and law enforcement authorities are rigorous and persistent in their duties, this improvement should continue.

There are other bird conservation problems on which law enforcement agencies should now focus: the illegal trade in birds of prey and the importation of exotic birds. Ultimately, the authors hope that the trade in all birds in Taiwan can be brought into accord with the law.

Species	Nov 85- Dec 86	Dec 90- Nov 89	Nov 91- Dec 92
Streak-throated Fulvetta			
<i>Alcippe cinereiceps</i>	0	3	0
Dusky Fulvetta			
<i>A. brunnea</i>	16	0	0
Grey-cheeked Fulvetta			
<i>A. morrisonia</i>	481	89	3
Rufous-capped Babbler			
<i>Stachyris ruficeps</i>	12	0	4
Taiwan Yuhina			
<i>Yuhina brunneiceps</i>	481	58	0
Streak-breasted Scimitar-Babbler			
<i>Pomatorhinus ruficollis</i>	15	13	0
Spot-breasted Scimitar-Babbler			
<i>P. erythrocnemis</i>	1	5	0
Steere's Liocichla			
<i>Liocichla steerii</i>	1 039	55	0
White-eared Sibia			
<i>Heterophasia auricularis</i>	336	56	0
Taiwan Barwing			
<i>Actinodura morrisoniana</i>	17	0	0
White-throated Laughingthrush			
<i>Garrulax albogularis</i>	11	3	0
Hwamei			
<i>G. canorus</i>	125	36	0
White-whiskered Laughingthrush			
<i>G. morrisonianus</i>	32	0	0
Rusty Laughingthrush			
<i>G. poecilorhynchus</i>	29	7	0
Total Species/Birds	13/2 595	10/325	2/7

Table 4. Observations of babblers Sylviidae in trade.

ACKNOWLEDGEMENTS

This survey required hundreds of hours of work and had no financial backing. It would not have been possible without the enthusiastic support of many student volunteers. The authors wish to thank all of them and, in particular, Jingsheng Dong, Jiezhi Lai, Junren Cao and Xiaoyun Ma. Many thanks are also owed to Stephen Nash of TRAFFIC International and Professors Ling-ling Lee and Ying Wang for their perceptive comments on earlier drafts.

Credit should be given to the Wild Bird Society of Taiwan, which played an active role in the passing of the *Wildlife Conservation Law*. Their efforts demonstrate that local conservation non-governmental organizations can provide a valuable contribution to long-term wildlife conservation work.

Eugene Sullivan translated the original manuscript of this study into English.

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Dr William Chi, Board of Wild Bird Society of Taiwan; Zhuncheng Zhang, Zhengtian Lin, Zhezhong Jian and Yongmao Zhen, Conservation Club, National Chung-shin University, Taichung, Taiwan.

EU Orchid Trade Warrants Closer Inspection

J.A. Roberts and H.N. McGough

INTRODUCTION

The European Union (EU) is a major importer of wild-collected orchids. A total of 160 000 specimens of 1030 species were recorded in trade in 1989, the most recent year for which comprehensive data are available. Over half of these plants were Asian slipper orchids *Paphiopedilum*, derived mainly from Thailand.

In collaboration with the German CITES Scientific Authority, the Conservation Unit at the Herbarium, Royal Botanic Gardens, Kew, has analysed the 1989 EU CITES annual report for trade in wild-collected orchids.

A report on the EU imports including other wild-collected plant taxa in 1989 is featured on pages 31-35.

METHOD

In 1989, the EU annual report data on wild-collected specimens in trade were included in the same category as those for which the source was not declared or was unknown. The term "wild-collected" in this account therefore refers to all specimens recorded in this category of the annual report.

Artificially propagated specimens in trade are not included in this analysis.

IMPORTS TO THE EU

The Netherlands and the former Federal Republic of Germany were the main importers of wild-collected orchids in 1989, with 95 000 and 53 000 specimens imported, respectively. The German trade is more diverse, covering a wider range of taxa, with 141 genera and approximately 600 species represented.

COUNTRIES OF EXPORT

Thailand is the primary supplier of wild-collected orchids to the Community, exporting over 135 000 specimens of the total 160 000 imported by the EU in 1989, or 85% of the trade. The only other countries exporting 1500 or more specimens during that year were Peru (8775), the Philippines (4139), Madagascar (3073), Papua New Guinea (1640) and the former Soviet Union (1500) (see Quality of Reporting). As far as can be established, a ban on the exportation of orchids was in effect in the Philippines in 1989. Both Peru and Papua New Guinea have since enacted export bans for wild orchids. A number of other countries with export bans in place appeared to export wild-collected plants in small numbers in 1989. As the EU's annual report does not show the "purpose of export", it is not possible to determine whether the plants were for scientific, personal or commercial use.

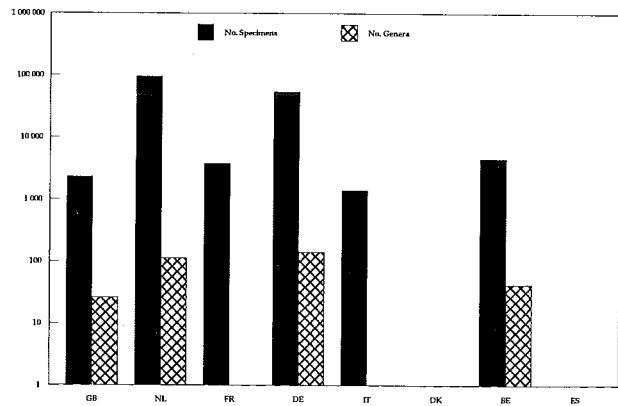


Table 1. Imports of wild-collected orchids to EU countries, 1989. DK and ES = 1 specimen each
Source: EU CITES annual report

GENERA IN TRADE

The largest trade was in the genus *Paphiopedilum* (82 000), with the majority of specimens exported from Thailand. The genus was placed in Appendix I at the seventh meeting of the Conference of the Parties to CITES, in October 1989. This decision to ban all commercial trade in the genus did not come into effect until early 1990 and may account for the large number of specimens in trade prior to this embargo.

The second-largest trade was in *Dendrobium* (19 000), a large genus with over 900 species, approximately 150 of which occur in Thailand, the major exporter.

The low number of imports recorded of specimens of *Masdevallia* (130), *Pleione* (318) and *Phalaenopsis* (1707), is not an accurate reflection of the wild material of these genera seen in circulation in the EU during this period. This would imply that specimens were being incorrectly reported as artificially propagated.

Thailand's exports comprised nearly 700 named species of mixed genera, investigation of which should be a priority.

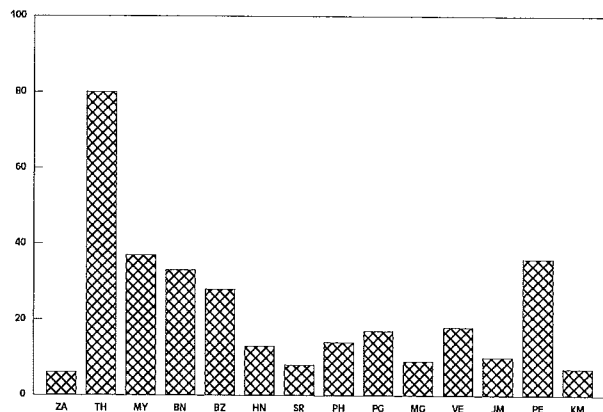


Table 2. No. of genera of wild-collected orchids exported to EU, 1989.

Countries that traded in fewer than five genera have been omitted.
Source: EU CITES annual report



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Paphiopedilum bougainvillanum

QUALITY OF REPORTING

Reporting wild-collected specimens at generic or family level is a waste of resources as the information has no conservation value. Of the 160 000 orchid specimens imported in 1989, 146 000 were reported at species level (91%) and 14 000 at family or generic level. This level of detail is better than the level reported in previous years and is inflated by the number of *Paphiopedilum* imports recorded to species level. Of particular interest was the importation by the Netherlands of 1500 orchids declared at family level, wild-collected from the Soviet Union, with country of origin stated as Viet Nam. On investigation the shipment was discovered to be of old herbarium specimens from Viet Nam. Also of concern is the importation, by France, of 3715 orchids wild-collected in Thailand - again declared to family level. This was the total of declared wild-collected orchids to France for that year, a record that is puzzling given that country's fairly prominent position in the international orchid trade.

RECOMMENDATIONS

The EU is a major importer of wild orchids and in order to implement present and future EU CITES legislation adequately, the following measures must be taken:

1. Reporting of trade in wild-collected plants to species level.
2. Regular inspections of declared wild material to check the identity of all taxa in trade.
3. Compilation of a short-list of orchid species that are unlikely to be artificially propagated. Such material could then be targeted for regular inspection.
4. Regular reporting of inspections to the relevant EU CITES Committee to allow co-ordination at EU level.
5. Increased gathering of conservation data on the species concerned, in order to enable EU Member States to make informed decisions regarding CITES listings and enforcement.
6. Training of inspection officers to enable artificially propagated plants to be distinguished from wild-collected specimens, where possible. The provision of simple identification manuals containing such guidance is also a priority.

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The following country abbreviations have been used in this report:

BE - Belgium	HN - Honduras	PG - Papua New Guinea
BN - Brunei Darussalam	IT - Italy	PH - Philippines
BZ - Belize	JM - Jamaica	SR - Suriname
DE - Germany, Fed. Rep. of	KM - Comoros	SU - USSR
DK - Denmark	MG - Madagascar	VE - Venezuela
ES - Spain	MY - Malaysia	ZA - South Africa
FR - France	NL - Netherlands	
GB - Great Britain	PE - Peru	

Recent Trends in International Trade of Hippopotamus Ivory

P. Weiler, T. De Meulenaer and A. Vanden Bloock

INTRODUCTION

Despite a continuous population decline in recent decades, the Common Hippopotamus *Hippopotamus amphibius* remains well represented throughout most of sub-Saharan Africa, particularly in eastern and southern Africa. Many animals are found in the relative security of protected areas and national parks (Anon., 1987; Eltringham, 1993), but in western Africa, Hippopotamuses occur in small, more or less isolated and vulnerable populations (Figure 1). The continental population has been estimated at around 157 000 animals (Eltringham, 1993), but this may be too conservative.

The species has long been hunted for its meat and other parts such as its teeth, bones, hide, tails and feet; the fat, skin and gallbladder are also used in traditional African medicine (Osborn and Helmy, 1980; Jacobson, *in litt.*, 1994). Present day international trade in the animal's upper and lower ivory incisors and canines, for use in carvings, is substantial.

The Hippopotamus is fully protected by legislation in most of the range countries, or can be exploited only under strict control; enforcement of the legislation varies from country to country, however; it is particularly lax in western Africa where the species appears to be most at risk (Eltringham, 1993). The species has been included in Appendix III of CITES by Ghana since 1975 to assist with enforcement of an export ban on this species. Since 1984 it has also been listed in Annex C2 of EU Regulation 3626/82, which applies stricter import regulations than those applied to CITES Appendix II-listed species by requiring that a valid import permit be issued in advance of the importation of Hippopotamus specimens.

This report analyses the exportation from Africa of Hippopotamus teeth from 1984 to the present day.

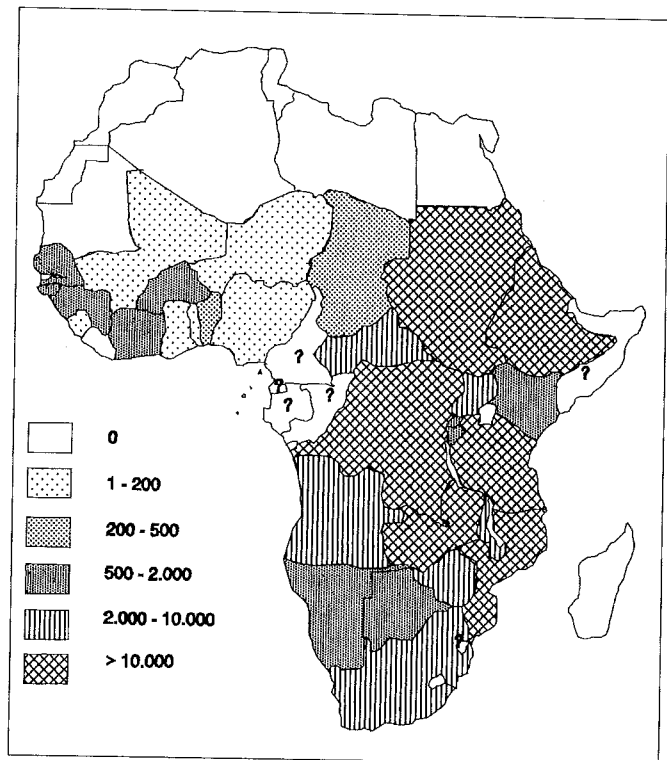


Figure 1. Distribution and relative density of the population of Hippopotamus *Hippopotamus amphibius* in Africa.

Source: TRAFFIC Europe, 1994 - modified after Eltringham, 1993.

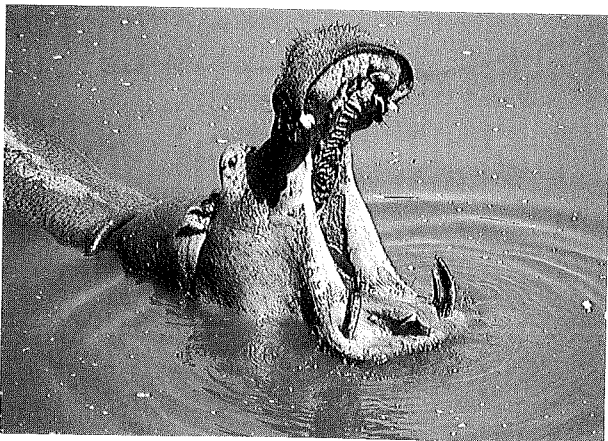
METHODS

To assess the amount of raw Hippopotamus ivory exported from Africa since 1984, two main sources of trade data were consulted:

- CITES annual reports documenting wildlife trade reported by Parties (trade data for 1992, 1993 and 1994 are incomplete). Specimens entering international trade were described as bone products, skulls, tusks, teeth, carvings, feet, horns, skins, tails, leather items (whips, shoes, wallets, straps, bags), trophies and live animals. Volumes expressed as numbers of teeth or tusks were converted to weight by using an average of 0.4 kg per Hippopotamus tooth or tusk (the mean is based on the figures recorded in 1992 and 1993 of 16 333 Hippopotamus teeth/tusks that weighed a total of 7338 kg).

The principal limitation of CITES annual reports is that many Parties do not report transactions involving Appendix III-listed specimens or simply fail to file an annual report, despite this being a requirement under Article VIII, paragraphs 6 and 7 of the Convention.

- Annual Customs statistics for Japan (1984 to 1993) and Hong Kong (1984 to 1992), both countries which are known to be major destinations of African ivory and which have a Customs category for recording imports (and exports) of "all other unworked ivory". This category excludes ivory waste, worked ivory and elephant ivory. Where the country of origin of "other unworked



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Hippopotamus *Hippopotamus amphibius*

ivory" is reported to be African, it has been assumed that the importation refers to Hippopotamus ivory (exportation of the teeth of other African ivory "producers"- warthog and other African suidae, for example - is believed to be insignificant).

The Customs data are expressed in weight only.

INTERNATIONAL TRADE

The CITES data on African exports and the Customs statistics of imports by Japan and Hong Kong are fairly complementary in that neither Japan nor Hong Kong record Appendix III trade in their CITES annual reports and very few exports from African countries to Japan or Hong Kong are recorded. Thus double counting can be more easily identified and eliminated.

Despite being incomplete, the combination of both sets of data shows a sharp rise in the trade in Hippopotamus ivory after 1989 (Table 1). This coincides with the prohibition on international trade of African Elephant *Loxodonta africana* ivory, following the decision in 1989 to place this species in CITES Appendix I.

The apparent increase in Hippopotamus teeth exports can be attributed at least partially to the use of Hippopotamus ivory as a substitute for elephant ivory. In 1993, a manufacturer in Hong Kong offered a full range of carvings made of Hippopotamus ivory announcing that they had exactly the same look and quality as those crafted from elephant ivory. Hippopotamus ivory can resemble elephant ivory to a degree where it is sometimes difficult to tell them apart. Because of their small size and shape, however, Hippopotamus teeth provide fewer possibilities for carving.



EXPORTING COUNTRIES

The principal African source of Hippopotamus teeth in international trade would appear to be Tanzania. The combined data suggest that the country exported a minimum of 5 tonnes (t) in 1990, 7 t in 1991, 7.1 t in 1992 and 2.5 t in 1993. Tanzanian authorities have stated that 2737 teeth (1463 kg) exported to Belgium in 1993 were old stocks, while other Hippopotamus teeth exported in 1993 were claimed to derive from animals that had been legally hunted or that had died from anthrax.

In 1992, the most recent year for which nearly complete trade data are available, exports of Hippopotamus ivory from Africa totalled an estimated 12 618 kg, according to CITES annual reports and Customs data for Japan and Hong Kong. After Tanzania, the major exporters of raw Hippopotamus ivory were Burundi (17.5% of the total), South Africa (12.7%), Uganda (6.8%), Malawi (2.9%), Zimbabwe (2.3%) and Zambia (0.4%).

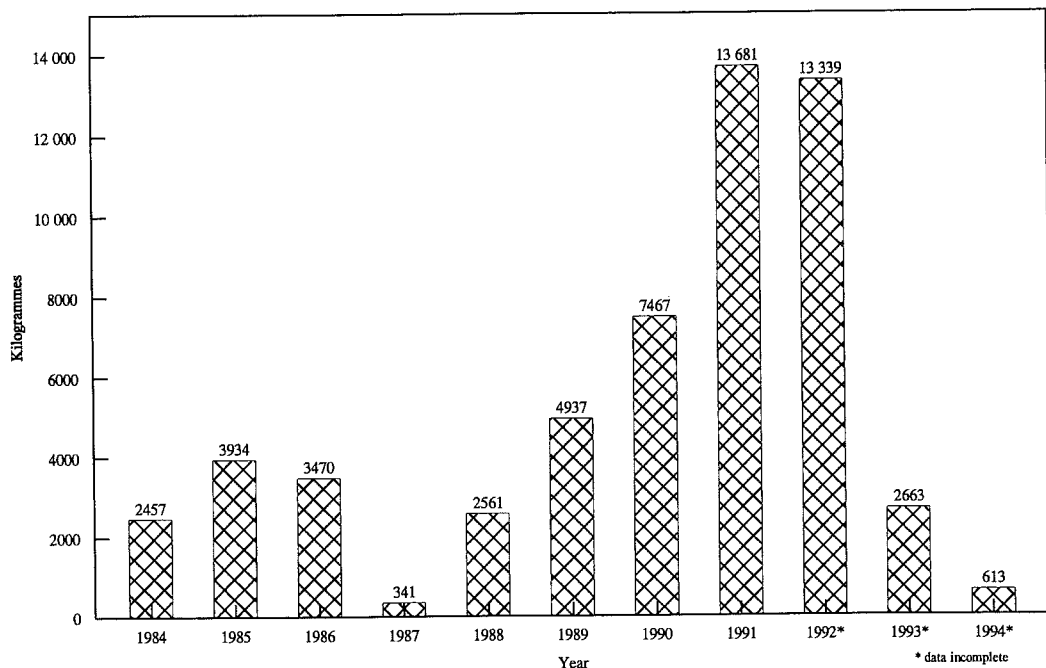


Figure 2. Raw Hippopotamus ivory exported by African countries per year (kilogrammes). Source: CITES annual reports; Customs data of Japan and Hong Kong

CONSUMERS

Hong Kong is a centre for the manufacture of Hippopotamus ivory. It also serves as a transit route for raw Hippopotamus teeth: CITES data indicate that 224 teeth were re-exported from this country in 1988, 1688 in 1990, 1232 in 1991 and 3868 in 1992, principally to the USA.

In 1992, the United Arab Emirates re-exported to Japan 2110 Hippopotamus teeth originating from Uganda; France, Belgium and South Africa were also amongst the main importing countries of Hippopotamus tusks and teeth in 1992 although the majority of these items were subsequently re-exported.

Numerous imports of (assumed) Hippopotamus ivory from African countries to Japan and Hong Kong are reported in the Customs records of these two countries, but do not appear in CITES annual reports from the exporting African nations. Therefore, it is not possible to know if these specimens were covered by valid country of origin certificates.

ILLEGAL TRADE

Recent reports of large shipments of Hippopotamus ivory suggest that, in some instances, it is of illegal or dubious origin, intended for the international market. In April 1991, French CITES authorities refused a shipment of five tonnes of Hippopotamus ivory from Burundi which was claimed to have been confiscated from private citizens in that country but rumoured to have originated elsewhere. The consignment of 11 000 to 12 000 teeth was apparently destined for Japan.

In 1992 and 1993, intensive poaching of Hippopotamuses by Zairean army soldiers was reported from the Virunga National Park in eastern Zaire, an area that once contained one of the largest concentrations of this species in Africa (an aerial census in July 1994 showed that the estimated population of 22 875 animals recorded in 1989 had dropped to 10 849 (Languy *et al.*, 1994)). In 1993, a Zairean certificate of origin for 10 000 Hippopotamus teeth was issued illegally by local authorities in eastern Zaire and subsequently intercepted by authorities in Uganda. The document indicated that the proposed destination for the shipment was Japan. Although it reportedly left Zaire, the shipment was not recovered. The teeth are believed to have come from the protected Hippopotamus population in Virunga National Park. A further 417 teeth taken from Hippopotamuses poached in the park, and bound for Uganda, were seized in the same year (S. Mankoto Ma Mbaelele, pers. comm., 1994).

In April 1994, an application to import 3725 kg of Hippopotamus teeth was submitted to the Belgian Management Authority with a copy of a re-export certificate from Burundi. The claimed country of origin, Tanzania, denied that the teeth had originated in that country and Belgium therefore refused to import the ivory.

CONCLUSION

Although the Hippopotamus is currently not threatened with extinction, it is vulnerable to heavy hunting pressures (Eltringham, 1993). The international trade in Hippopotamus specimens, and in particular in raw ivory from the teeth, seems to have increased markedly since 1990, which may be as a result of the use of Hippopotamus ivory as a substitute for elephant ivory. The increase in trade is of conservation concern, and needs to be carefully monitored in order to ensure that it is conducted sustainably. Listing of the species in CITES Appendix III by Ghana does not allow appropriate monitoring of the trade as certain Parties do not report Appendix III specimens in trade and/or may lack appropriate legislation to apprehend illegal shipments. A proposal to place the species in CITES Appendix II will be considered at the ninth meeting of the Conference of the Parties. Such a listing will enable international trade to be monitored and controlled, and encourage range states to export specimens in accordance with Article IV of the Convention (amongst the requirements of which is the stipulation that exportation should not be detrimental to the survival of the species nor in contravention of the exporting country's legislation).

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