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TRAFFIC

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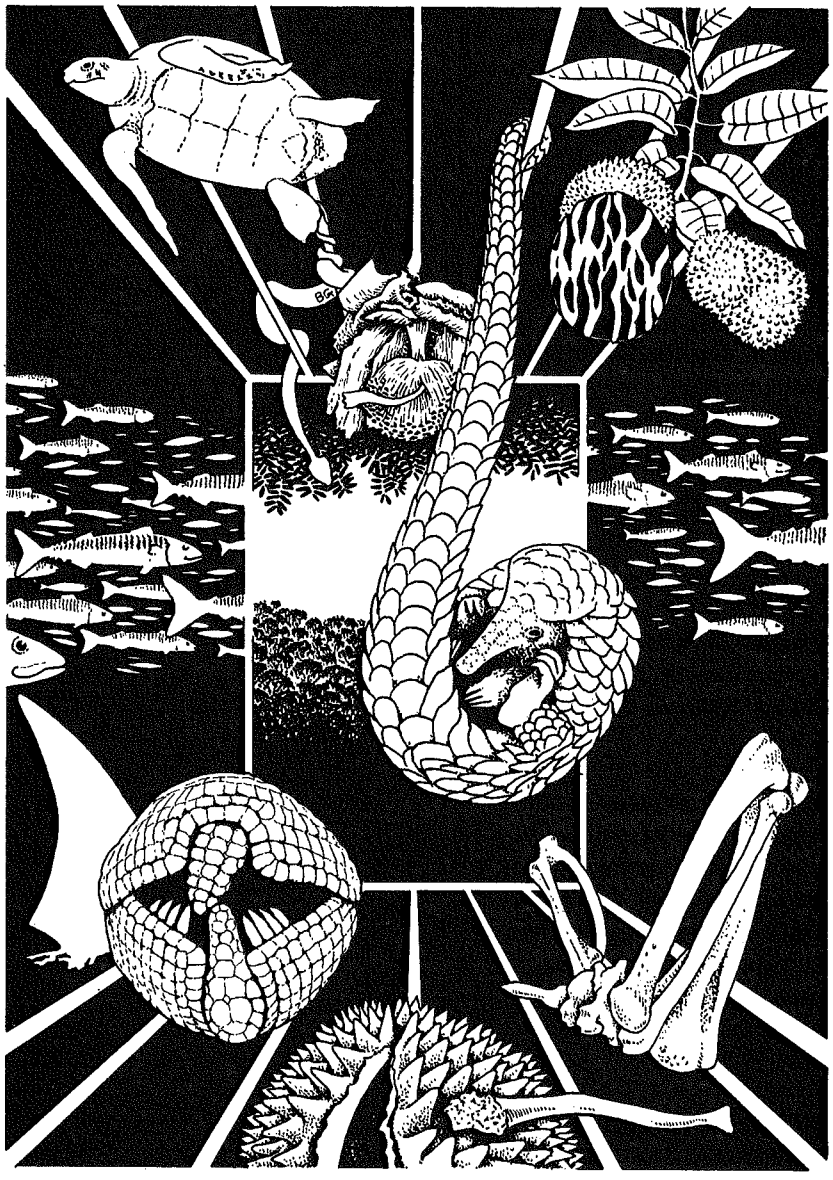

The Journal of the TRAFFIC Network disseminates information on the utilisation of wild animal and plant resources

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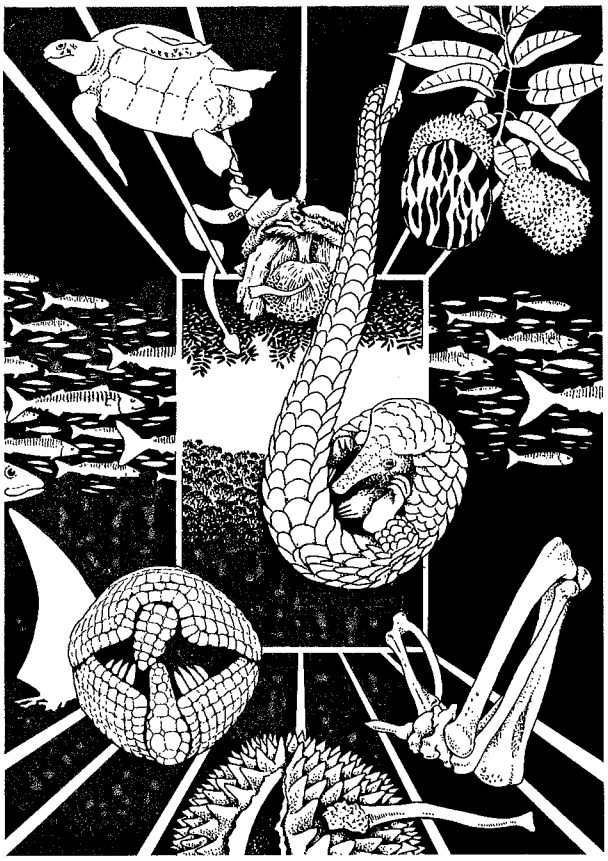

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VOL. 14 NO. 1

CONTENTS

Centre insert - Index Vol. 13

JULY/AUGUST 1993

Republic of Korea Joins CITES

The Republic of Korea (South Korea) acceded to CITES on 9 July 1993 and will become the 120th Party to the Convention on 7 October 1993. It has entered the following reservations for a period of three years:

Ursidae spp. (Appendix II species and populations); and *Moschus* spp. (Appendix II populations).

CITES Secretariat

Measures Taken to Control Trade In Rhino Horn and Tiger Bone as USA Threatens Sanctions

The People's Republic of China has announced a prohibition on the sale, purchase, importation, export and possession of Tiger *Panthera tigris* bone and rhinoceros Rhinocerotidae horn. As of 1990, registered stocks of rhino horn in China amounted to approximately 10 t (Martin, 1990); on 29 May 1993 the Chinese Government announced that traders had six months to dispose of existing stocks of rhino horn and Tiger bone, including medicine which contains the parts or products of rhinos and tigers. The Chinese Ministry of Foreign Affairs has further announced that increased protection would be given to other endangered species, including the Crested Ibis *Nipponia nippon*, several categories of deer and the Saiga Antelope *Saiga tatarica*.

Additionally, China's Minister for Science, Technology, Forestry and Wildlife has agreed to sign a protocol with India, designed to reduce illegal Tiger trade between the two countries. The protocol is expected to be signed shortly.

China appears to be responding to international concern by taking these measures. In May 1993, the US Secretary of the Interior declared that China and Taiwan were both "engaging in trade that diminishes the effectiveness of" CITES and that consequently the USA would impose sanctions against China and Taiwan if effective measures were not taken to counter this trade.

Taiwan also appears to be responding to pressure. The country banned the trade in rhino horn in November 1992 (see *TRAFFIC Bulletin* 13(2):56). To demonstrate the country's determination to stop illegal trade, Mr Sun Ming-Shien, Chairman of Taiwan's Council of Agriculture, sent a team of officials to South Africa, USA and to the UNEP Conference Between the Rhinoceros Range States, Consumer States and Donors on Financing the Conservation of the Rhinoceros, in Kenya, in late June. Further, Lieutenant-Colonel Charles Chang of the Taiwanese police made a two-week visit to South Africa in June to receive training and to liaise with South African police officers on the problems of rhino horn smuggling and to discuss future co-operation and training. During this month, the Taiwanese Government supervised the public burning of 25 rhino horns which had been confiscated in November 1992, and over 700 kg of ivory, to comply with the recommendation of the Standing Committee at its 29th meeting in March this year, which called for the destruction of all seized contraband rhino horns in Taiwan.

The Republics of Korea and Yemen were also criticized by the US Government, which has declared that pressure would be placed on these two nations to curb illegal trade. Since this announcement, the Republic of Korea has acceded to CITES (see above) and the Republic of Yemen has announced its intention to accede to the Convention and has taken further steps to control domestic rhino horn trade.

Martin, E.B. (1990). Medicines from Chinese treasures, *Pachyderm*, 13:12-13.

State Council of the People's Republic of China, 29 May 1993; Daily Times (Malawi), 16 June 1993; US Department of the Interior News Release, 9 June 1993; TRAFFIC India

Ivory Dealer Killed in Zimbabwe

A soldier from the Zimbabwean National Army has been shot dead in Chitungwiza whilst attempting to sell ivory.

Two men designated by the Department of National Parks in Zimbabwe to pose as ivory buyers had made arrangements to meet the soldier, Edward Dzinhuhwa, and a colleague, to purchase a piece of elephant ivory which is understood to have originated in Mozambique. During the transaction, the National Parks representatives disclosed their identity and informed the pair that they were under arrest. According to National Parks Chief Investigations Officer, Graham Nott, Dzinhuhwa then attempted to escape. One of the Parks representatives, following standard procedures, fired three warning shots into the air before firing a fourth time at the soldier's feet, with the intention to wound. Dzinhuhwa fell and died within minutes from his wounds.

According to the *Protection of Wild Life (Indemnity) Act, 1989*, persons designated by the Department are indemnified against criminal liability in respect of acts carried out in good faith for the purposes of, or in connection with, the suppression of the unlawful hunting of wildlife. Only the Attorney-General has the power to initiate a prosecution, an avenue which the police are now taking against the National Parks representatives.

The two representatives have been released from police custody on instructions from the Attorney-General's office after representations were made by National Parks.

The Herald (Zimbabwe), 4 August 1993
Protection of Wild Life (Indemnity) Act 1989, Zimbabwe

South Africa Bans Imports of Red-and-blue Lories

Responding to a call by TRAFFIC's South African office for a ban on imports of the endangered Red-and-blue Lory *Eos histrio*, on 27 July 1993, the Minister of Environment Affairs, Mr Japie van Wyk, announced his support for a prohibition on the importation of this species to South Africa.

As reported in *TRAFFIC Bulletin* (13(3):93-96), investigations by TRAFFIC Southeast Asia uncovered a worrying trade in this bird which, until a year ago, had been primarily threatened by the loss of habitat on the tiny groups of islands, Sangihe, Talaud and Nenusa, in Indonesia, where it occurs. During 1992 and early 1993, however, as many as 700 of the estimated 2000 birds believed to have remained in the wild, were found in trade: TRAFFIC estimates that as many as 400 to 500 of these parrots left the country for Singapore, with over 100 of these re-exported to South Africa. South Africa has a relatively large bird-keeping and breeding-community, and with importation restrictions in place in Europe and the USA, was one of the most important remaining markets for the species.

The Department of Environment Affairs will now request the South African provinces to use their nature conservation ordinances to enforce the ban, and will ask the CITES Secretariat to notify the Parties of this decision.

Avizandum, South Africa's main avicultural magazine, has published an editorial in support of TRAFFIC's call for a ban, and urges careful management of the birds already in the country.

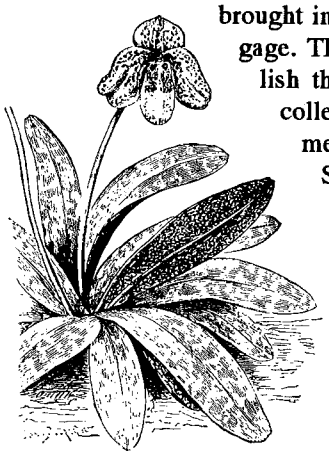
David Newton, TRAFFIC's national representative in South Africa, has applauded Minister van Wyk's decision and the positive action taken by provincial nature conservation authorities. "Their rapid response to our call for a ban will help ensure that South Africa no longer provides an export market for these endangered parrots, and demonstrates the Government's growing commitment to conservation of wildlife species in trade" he said.

TRAFFIC East/Southern Africa-South Africa, Press Release, 27 July 1993

Rare Orchids on Sale in South Africa

Wild-collected lady's slipper orchids *Paphiopedilum* (CITES Appendix I) have been discovered for sale at an orchid symposium held in Pretoria, South Africa, on 2 and 3 July 1993.

At the 1st International, 7th South African, Paphiopedilum Symposium, investigators for TRAFFIC observed an Indonesian citizen offering some 480 wild-collected *Paphiopedilum* plants for sale. The orchids were not openly displayed but could be viewed on request. The vendor admitted that the specimens were part of a consignment of 800 plants illegally brought into the country in his luggage. TRAFFIC was able to establish that the plants were wild-collected and included specimens endemic to northern Sumatra and the Moluccas, which experts believe to be almost extinct in the wild; they had been obtained from collectors in Indonesia. According to South African plant dealers who purchased the orchids, prices ranged from R10 (US$3) to R35 a plant, but rare specimens fetched greater sums.



Fearful of discovery, the dealer apparently abandoned the plants and fled the country. Local enforcement authorities were alerted and the Indonesian was stopped at Jan Smuts airport on 6 July as he was leaving the country, for Singapore. He was released after questioning. The matter is under investigation.

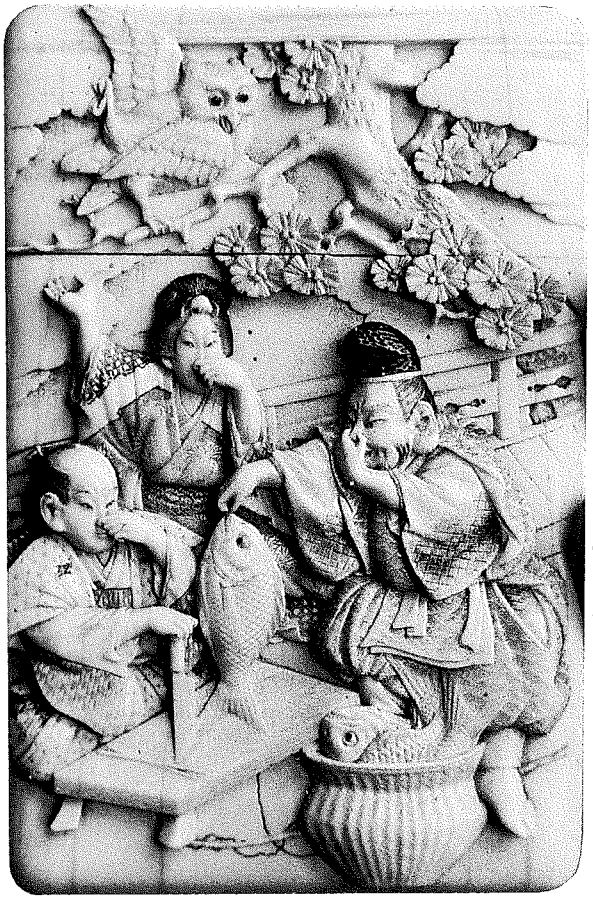
At the 12th World Orchid Conference (WOC) in Japan, in 1987, TRAFFIC's exposure of illegal trade in *Paphiopedilum* orchids led the organizers to ban the entry of any wild-collected orchid specimens at future WOC events.

TRAFFIC East/Southern Africa-South Africa, Press Release, 19 July 1993

Antique Ivory Auctioned

The CITES Appendix I-listing of elephants subjects internal trade in ivory within the EC to regulation under CITES-related Community legislation. Sale in the UK of ivory that is more than 100 years old may be exempt from those trade controls. In London, in April, the biggest collection of Japanese and Chinese carved ivory to be put on the market for 15 years was auctioned at Phillips for a total of £378 365 (US$565 655); all but three of the 386 lots found buyers. It is interesting to note, however, that the prices were not much higher than they would have been 10 or 12 years ago and indicates that the value of antique carved ivory has dropped in real terms by more than half. One of the buyers, Malcolm Fairley, a director of *Barry Davies, London,* Europe's biggest dealer specializing in Japanese art, attributed the decline in demand for ivory to the changes in taste, rather than to the four-year-old ban on international commercial trade in ivory of African Elephant *Loxodonta africana.*

The Independent (UK), 24 April 1993



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'Stinking fish' Japanese carved ivory card case.

Namibian Rhinos Fail to Attract Buyer

On 28 May 1993, the Namibian Government placed a large number of animals for auction, including six Black Rhinos *Diceros bicornis,* for sale to breeders and game farmers. In keeping with the plan to establish successful breeding groups, the Government had determined that the Rhinos should be sold together as a group. The two bulls and four cows were being offered at a minimum price of R500 000 (US$150 000) each - a total of R3 million. The highest offer tendered, however, was R180 000 per individual, which was refused.

Other animals for sale at the auction included 11 young African Elephant *Loxodonta africana,* 10 Buffalo *Syncerus caffer,* 20 Roan Antelope *Hippotragus equinus,* Giraffe *Giraffa camelopardalis,* zebra *Equus* spp., and Common Eland *Taurotragus oryx.*

According to Hanno Rumpf, Permanent Secretary for Wildlife, Conservation and Tourism, "Successful management of certain species including Black Rhino and elephant, has made sustainable utilisation possible, resulting in a surplus of animals which can be made available to the public without affecting sustainable populations within game parks".

South Africa auctioned 20 White Rhinos *Ceratotherium simum* in June 1993. The average price per specimen was R26 000 (US$7775).

Namibian Ministry of Wildlife, Conservation and Tourism; Natal Parks Board, South Africa; Japan Times (Japan), 8 April 1993

Tanzania Restricts Tourist Hunters

The exclusion of professional hunters has been ordered from all open areas (as opposed to game reserves) of Tanzania. In a letter dated 19 February 1993 from the Director of Wildlife, safari tour operators in Tanzania were informed that, effective from that date, "as a matter of policy, all open areas are now reserved for local and not tourist hunting. The decision will enhance the participation of all local hunters in the hunting sport which is their right."

Business Times (Tanzania), 5 March 1993; The Express (Tanzania), 11 March 1993

China Executes Panda Skin Sellers

On 30 May 1993, the Intermediate People's Court in Guangzhou sentenced two Chinese farmers, Deng Tianshun and Zhu Xiuying, to death for selling the skins of two Giant Pandas *Ailuropoda melanoleuca.*

The Independent (UK), 1 June 1993

Fish In Fashion

Almost all fish species have skin suitable for the manufacture of leather and the scale patterns on many apparently render them ideal substitutes for snake and lizard species. However, research finds that there is some prejudice against wearing clothing made from fish skin. The reluctance to buy fish skin goods for personal wear appears to be linked with the association of the smell of fish and the belief that this will still be present after processing the leather. Nevertheless, the level of public acceptance of fish skin clothing and jewellery is sufficiently high to make business viable for tanners and designers working with fish leather.

One company, *Aqua Leathers*, based north of Inverness, in Scotland, UK, received a grant for business from the Highlands and Islands Development Board to produce leather from salmon skins, which is sold to retailers worldwide. The company, which has a turnover of about 700 skins a week, opened for business in 1988 and receives most of its supply from Europe, especially Norway, in a frozen and meat-free state. Processing occurs immediately on receipt of the fish skins, to prevent putrefaction, and follows standard tanning procedure: the fact that the skins are washed several times in detergents ensures removal of excessive natural grease and odour. The resultant fish leather is soft, thin and as strong as cowhide, if properly processed: one notable export destination of salmon leather produced by *Aqua Leathers* is Japan, where it is made into durable golfing gloves.

Other fish species besides salmon currently being used or considered for use in the leather industry include Nile Perch *Lates niloticus*, tuna, barramundi, shark and Catfish *Anarhichas lupus*.

Leather, March 1993

Wild Fur Sales Rejuvenated

Around 50 buyers from North America, Europe and the Far East attended the Fur Harvesters' Sale in North Bay, Ontario, Canada, in March 1993. Officials at the auction of wild furs at the sale reported that sales were better than anticipated in some sections of this category, given the weakness that has prevailed in the wild furs market latterly. The Beaver *Castor canadensis* collection sold best, the 26 000 pelts fetching mostly higher prices than in 1992 and averaging US$13.77, with a top price of US$46. Some 5000 Canadian Sables *Martes zibellina* on offer held their price, when compared with last year's sales, within a range of US$28.37 to US$47 and tens of thousands of Muskrat *Ondatra zibethicus* pelts sold at slightly higher prices than the year before. Also on offer were thousands of furs of mink *Mustela*, North American River Otter *Lutra canadensis*, raccoon *Procyon*, Coyote *Canis latrans* and Red Fox *Vulpes vulpes*.

Sandy Parker Reports, 17(8), 5 April 1993

Mosquitoes Bite As Europeans Dine On Frogs

With the reduction of native frogs from the effects of over-collection and pollution, the French taste for frogs' legs can now only be met by imports of frozen meat; since a ban was imposed on exports of frogs' legs from India in 1987, supplies are almost all from Indonesia. Two Italian scientists, Gianluigi Negroni and Luca Farina, record 6202 t of frogs' legs imported into the European Community in 1990, 4683 t of which were from Indonesia. Of these imports into the Community, 42% were destined for France and 44% for Belgium and Luxembourg, with Italy receiving the bulk of the remainder.

Alain Dubois of the Laboratory for Reptiles and Amphibians at the National Museum of Natural History in Paris is among those who fear the consequences of the collection of large quantities of frogs in Indonesia, not least because, as in India previously, a reduction in frog numbers is thought by some to result in the proliferation of pests, especially mosquitoes.

Frogs' legs in Europe are not much more expensive than most other meats: half a kg sells for about Ff26 (US$4) and frog meat is served regularly in school dining rooms and work canteens. In 1992, Germany attempted to facilitate regulation of the trade by proposing a number of frog species, including Indonesian ones, for listing under CITES, but the proposals were rejected on the grounds of there being insufficient evidence of threat to wild populations. CITES protection would be difficult in practice, in any case, since species identification from frozen frogs' legs is almost impossible without costly and time-consuming biochemical analysis: research on such techniques is currently ongoing in Germany. The farming of frogs for the table is being tried in the USA, Brazil and Italy, among other countries, as a way of reducing the impact of collection from the wild, and has been tried in France. The need for live prey and the risk of imported species escaping from farms can pose problems for frog farming: the introduction of a large North American bullfrog species into western France, for example, could cause the extirpation of smaller frogs in the same area.

New Scientist, 10 April 1993;
TRAFFIC Europe, in litt., *2 June 1993*

Kenya Appeals for Co-operation in Regulating Aloe Exports

Following the discovery that a number of illegal exports of aloe *Aloe* extracts from Kenya have been accepted by several importing countries in the past, the Management Authority in Kenya has asked the CITES Secretariat to inform all Parties that all species of aloe are strictly protected in Kenya by Presidential decree. All CITES Parties are requested to turn away incoming shipments of aloe parts or derivatives originating in Kenya, unless they are accompanied by the appropriate CITES documentation. The CITES Secretariat strongly recommends that any CITES documentation issued or allegedly issued by Kenya for the export of aloe parts and derivatives be verified with the Management Authority of that country.

CITES Secretariat, Notification to the Parties No. 743, 7 May 1993

A report on international trade in aloes is included on pages 25 to 32 of this issue.

CITES Conference

Arrangements for the ninth meeting of the Conference of the Parties to CITES have not yet been finalized. It is almost certain, however, that the meeting will be held in Fort Lauderdale, Florida, USA, from 7 to 18 November 1994. The deadlines for the submission of documents, draft resolutions and proposals for amendment of Appendices I and II are as follows:

12 December 1993: proposals pursuant to Resolution Conf. 3.15 on ranching; proposals for amendment of Appendices I and II by Parties which do not intend to consult range States of the species in question [Resolution Conf. 8.21, recommendation b)];

31 December 1993: proposals for Agenda items;

10 June 1994: draft resolutions and amendment proposals other than those mentioned above.

CITES Secretariat, Notification to the Parties No. 758, 13 August 1993

New Regulation for Caiman Skin Exports from Colombia

The CITES Secretariat has issued a Notification explaining new conditions applying to exports of Spectacled Caiman *Caiman crocodilus* skins from Colombia, which has a captive breeding programme for the species. The Notification replaces Notification No. 706 and sets out new specific maximum lengths for exports of *Caiman crocodilus* skins in the categories of "full skins", "flanks", "tails" and "bellies" and allows different lengths within these categories for salted and tanned skins, since the method of processing affects the ultimate size of the product. The Secretariat stresses that the stated maximum lengths are to be treated as absolute values, and urges all Parties to control with particular care shipments of skins of *Caiman crocodilus* originating in Colombia, with regard to the new stipulations.

CITES Secretariat, Notification to the Parties No. 742, 7 May 1993

Concern over Exports of African Grey Parrots from Côte D'Ivoire

The CITES Secretariat recommends that no export permits accompanying African Grey Parrots *Psittacus erithacus* from Côte d'Ivoire, a non-Party, be accepted as valid. The recommendation relates to the subspecies *Psittacus erithacus timneh* and *Psittacus erithacus erithacus.*

The Secretariat expressed its concern in April 1992 to the Direction de la Protection de la Nature et des Parcs Nationaux in Côte d'Ivoire about the large numbers of *P.e. erithacus* that were being exported from that country, many of which are thought to originate in Ghana (which bans the export of African Grey Parrots) and other countries. Reports to the CITES Secretariat and the Government of Ghana, in October 1992 and March 1993 respectively, substantiate the belief that there is an illegal trade in African Greys from Ghana and out of Côte d'Ivoire. Although the Secretariat recommended that Côte d'Ivoire suspend exports of African Greys pending population surveys of the bird, no trade suspension has been ordered by the Government of Côte d'Ivoire.

The recommendation to all Parties will remain in force until the Secretariat is satisfied that wild populations of African Greys in that country have been surveyed and a management plan for sustainable international trade, based on these surveys, instituted.

CITES Secretariat, Notification to the Parties No.746, 7 May 1993

National Trust Upholds Deer Hunting

The members and ruling council of the UK National Trust have been in disagreement over whether deer hunting should continue on Trust land. At the 1990 annual general meeting, members voted, albeit by a narrow margin, for the cessation of deer hunting on Trust property; on 26 April 1993, however, the vote was overruled by the council, in favour of hunting.

The council's decision reflected the Trust's policy of formal neutrality on the ethics of hunting and on the findings of a study, which it commissioned in 1990, to review the implications of banning deer hunting in the Quantocks and on Exmoor. The study, led by Robert Savage, former Professor of the Department of Earth Sciences at Bristol University, believes the population of Red Deer in the area to number about 7000, and to be growing. The deer population is at present contained by an annual cull of approximately 1000 animals, and by hunting, which accounts for about 130 deer each year, mainly stags. The report maintains that deer hunting brings social and economic benefits to the rural communities in the area and that an increase in the number of deer would result in greater harm to land conservation strategies and to farms. All but one of the 52 council members accepted the report's findings.

The National Trust owns 10% of Exmoor and a sufficient area of the Quantocks, including most woodland, to make deer hunting impracticable in those regions, without its permission. Members of the National Trust opposed to hunting intend to submit further resolutions to this year's general meeting.

The Independent (UK), 21 April 1993

Scaling Up of Pangolin Trade

Namibia's Acting Permanent Secretary of the Ministry of Wildlife, Conservation and Tourism, Mr S. Simenda, has expressed concern over the apparent escalation in cases involving capture and trade in live Temminck's Ground Pangolins *Manis temmincki* (CITES Appendix I) (see page 36). He noted that, until recently, there had been few recorded cases of possession of pangolins, and added that Ministry personnel felt that there was growing interest in the capture and possible trade in the species.

Manis temmincki is the only pangolin species found in Namibia, and is considered rare throughout its range in that country. In Africa, pangolins are harvested both as a source of bush meat, and to supply the traditional medicine, or "muti" trade. Smoke from burning pangolin scales is believed to keep lions away, while other uses include improving the health of cattle. Scales are also linked to rain-making and are a popular magical charm, according to Mike Griffen, Ministry specialist in small mammal biology.

Although there is no open market for pangolins in Namibia, there is some evidence that specimens are exported to markets in Zimbabwe, Zambia and possibly South Africa. There is also concern that African pangolins are being exported illegally to meet the demand for pangolin scales and other pangolin body parts used in traditional Asian medicines.

Cape Nature Conservation; Namibian Ministry of Wildlife, Conservation and Tourism; Namibian Ministry of Wildlife, Conservation and Tourism Press Release, 16 March 1993

Poaching in Rockies Reaches New Heights

Law enforcement chief for the US Fish and Wildlife Service's Rocky Mountain Region, Mr Terry Grosz, perceives his job of combatting poachers as growing increasingly difficult. He attributes this to thriving demand for certain wildlife goods and an associated ruthlessness amongst poachers. Black Bears *Ursus americanus* and Rocky Mountain Bighorn Sheep *Ovis canadensis* are two of the species in demand, the former prized for its use in Oriental medicine, and the latter, as mounted trophies. Grosz notes that whereas wildlife officers used to seize prime specimens of animals from poachers, smaller specimens now make up most of the confiscations from poachers who, he says, cannot find anything else.

The AV Magazine, September 1992 In: Environmental News Digest, 11(1), 1993

Bighorn Sheep *Ovis canadensis*

UN Meeting over Fisheries Mismanagement

Regional fisheries bodies whose members meet regularly to agree on catches which sustain stocks at an optimum level, and who agree, or are legally bound, to abide by scientific advice, might help control damage to fish stocks in international waters. This was the opinion of nations which attended a recent meeting of the United Nations, which aimed to resolve the difficult task of managing migratory fish stocks, many of which are being fished to the point of collapse.

The meeting follows a request made at the Earth Summit in 1992 for the UN to settle fisheries disputes in international waters. In the 1980s, the UN drew up The Law of the Sea, a document which allocates an exclusive 320 km-fishing zone to coastal nations; although not yet in force, it is universally accepted that countries can claim and police these waters. However, it has proved inadequate in preventing disputes between countries and management of fish stocks which migrate beyond these limits. Canada's Atlantic stocks are overfished, to the point where the Grand Banks of Newfoundland, previously one of the richest fisheries in the world, is now closed to cod fishing for the rest of 1993 at least. Yet, up to 10% of fish from waters off Canada's eastern shore stray into international waters, where EC boats may then take them, quotas permitting. But EC nations have exceeded catch limits set by the North Atlantic Fisheries Organisation of which the EC is a member: in 1991, NAFO decided that no ocean perch should be fished, yet the Community allocated itself a quota of 6000 t, and its Member States then reported catching over 10 000 t of these fish.

The UN meeting achieved little to engender co-operation between nations: several countries say that they are considering extending their boundaries to protect fish stocks. Nevertheless, some measures have already been taken to improve European compliance with internationally agreed fishing limits: in 1992, for the first time, the European Commission engaged inspectors to monitor catches in NAFO waters, with a view to closing fisheries to boats from Community countries when quotas appear to have been reached. Norway, keen to limit any harm to its international reputation in the wake of its recent decision to resume commercial whaling, has agreed to compromise on the amount of Herring *Clupea harengus* it plans to catch in 1993, reducing its planned harvest from 240000 t to 195 000 t, (though scientists at the International Council for Exploration of the Sea (ICES) recommend a lower limit of 125 000 t). Although the Herring are currently within Norway's territorial waters, and therefore not subject to NAFO's nor the UN's decisions over fisheries in international waters, Norway's Herring stocks now amount to just under 2.5 million t, the size at which they are thought to resume their habit of migrating beyond their current limits, towards Iceland.

New Scientist, 9 January 1993;
The Independent (UK), 31 July 1993

Skippers Harbour Dissatisfaction

Over 130 boats were involved in blockades at Oban, Tarbert and the Kyle of Lochalsh, Scotland, UK, in late May in demonstrations against the Government's new restrictions on fishing. The biggest blockade was at Kyle of Lochalsh, where boats blocked the channel between Skye and the mainland disrupting work on the Skye bridge, under construction.

Representatives of fishermen's associations from all over Scotland were meeting in Aberdeen at the same time, to discuss the new regulations, issued in mid-May, which stipulate the number of days fishermen may spend catching fish. The lowest quota is an allocation of 80 days a year, which will apply principally to small boats fishing for prawns and scallops. Those affected by such rules fear they will bring financial ruin. So far the Scottish Fishermen's Federation has referred to the protests as local affairs, but has not ruled out a unified demonstration by Scottish fishermen.

The Scottish fisheries minister, Sir Hector Monro, has defended the new law, which he said aimed to conserve fish stocks and guarantee the long-term future of the industry. "The allocations of days at sea are provisional and the intention is to give fishermen as many days to fish as they had in 1991", said the minister, although this may still amount to a large reduction in days at sea in comparison with 1992: one skipper from Mallaig who fished on 240 days last year has been given a 160-day allocation this year.

The limits imposed on the fishing industry have been criticised by Members of Parliament who fear that the UK fleet may face financial ruin under such "unnecessarily draconian" restrictions. A report, dated 7 August, of the Commons Select Committee on Agriculture, states that a system of individual transferable quotas, which fishermen could buy and sell, would be a better method of conservation. Each boat would be allocated or would buy from the Government, a share of the national quota of fishing stocks. The report recommends that larger mesh sizes in fishing nets to allow younger fish to escape, should also be adopted.

The Independent (UK), 1 June, 14 August 1993

Nations Sign Bluefin Tuna Convention

After five years of negotiations, Australia, New Zealand and Japan signed the Convention for the Conservation of Southern Bluefin Tuna on 10 May 1993; this will enter into force after ratification by the countries.

Since 1986, these nations, which are the three main countries fishing for Southern Bluefin Tuna *Thunnus maccoyii*, have met to establish global annual quotas for this resource after it became apparent that only stringent quota reductions could prevent a collapse of the fishery.

The Convention aims to conserve both the Southern Bluefin Tuna and "ecologically related species" which are referred to as "marine species which are associated with Southern Bluefin Tuna, including but not restricted to both predators and prey of Southern Bluefin Tuna". It will be particularly important for conserving tuna resources in the high seas, outside the jurisdiction of any national laws, and will allocate the total allowable catch among its Parties. Members will meet each year to set management measures for the fishery.

Australia's Southern Bluefin Tuna industry has already undergone restructuring in response to reductions in quotas, for example, by converting vessels to longline fishing capabilities, which has resulted in higher returns from Japan, the main consumer of bluefin tuna, where thin, raw fillets of the fish, known as *sashimi*, are considered to be a delicacy.

Joint Statement by the Minister for Primary Industries and Energy and the Minister for Foreign Affairs of Australia, 10 May 1993; TRAFFIC Oceania

Tuna Lawsuit Rejected

The Center for Marine Conservation filed suit in a federal district court in November 1992 to force the US Government to prepare an up-to-date Environmental Impact Statement (EIS) on the Western Atlantic Northern Bluefin Tuna *Thunnus thynnus* fishery, as is required by US law (see *TRAFFIC Bulletin* 13(3):86).

In late March 1993, the US district court rejected the lawsuit but recognized the need for a draft EIS to be prepared by 1 June 1993 and presented to the International Commission for the Conservation of Atlantic Tunas, which convenes in Madrid, in November, to set quotas of the catch of Northern Bluefin Tuna in the Western Atlantic Ocean. At the time of going to press, the draft EIS had not been released.

Center for Marine Conservation Press Release, 5 May 1993; TRAFFIC USA

Norway Resumes Commercial Whaling

In mid-May 1993, Norway announced that it would authorize resumption of commercial whaling for the first time since 1987. The announcement runs contrary to majority opinion expressed at the 45th meeting of the International Whaling Commission, held in Kyoto, Japan, in May 1993. Norwegian fishermen will be permitted by their Government to take 296 Minke Whales *Balaenoptera acutorostrata* from the northeast Atlantic during this year's whaling season (the season in Norway usually lasts from June till early September). Norway's Foreign Minister, Johan Jorgen Holst told the Norwegian parliament that 160 of the 296 whales would be hunted for commercial purposes and the remaining 136 for scientific purposes.

The first whale killed for commercial purposes was taken on 16 June 1993; each of about 40 boats has been granted a quota of approximately five whales. However, in accordance with the IWC's Scientific Committee's recommendations, the whaling boats will not be taking whales from Lofoten or Vestfjorden, where much of the hunt has traditionally taken place, since it is thought that these areas could contain a discrete stock of Minke Whales, too small to sustain even a limited hunt.

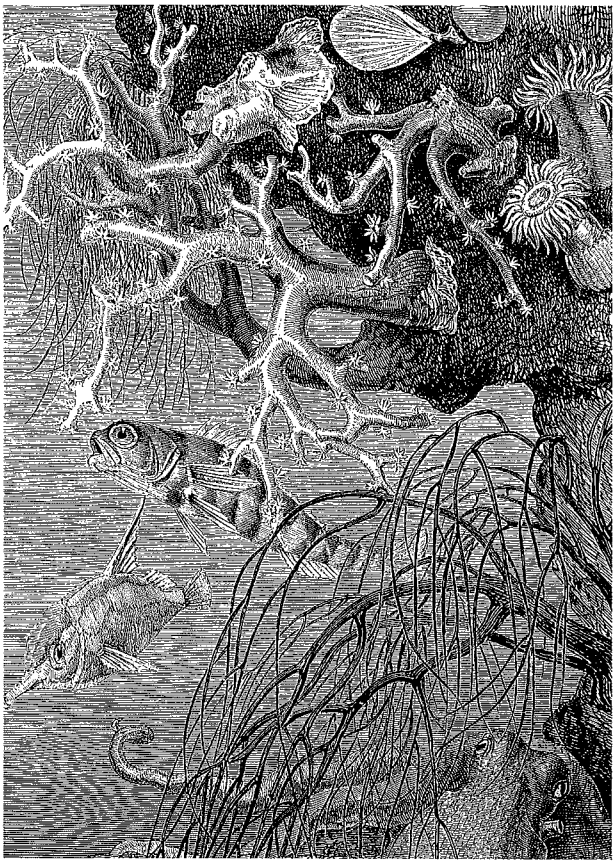
The Independent (UK), 16 May 1993; The Times (UK), 19 May 1993; Reuter, 4 June 1993.

A report of the 45th IWC annual meeting is featured on pages 21 to 24 of this issue.

Coastal Waters of Kerala Over-exploited

The estimated maximum sustainable catches of fish from the coastal fishing grounds of Kerala, in South India, have been exceeded in 1990 and 1991, and the region's fishing economy is in need of a management policy to replenish stocks. Post-Independence economic planning in India brought economically efficient but ecologically destructive fishing techniques, which must be strictly controlled now to avert the collapse of fisheries: the ring seine fishery in Central Kerala has already closed down as a result of overfishing. The Indian Government instituted bans on the use of trawlers fishing in Kerala's depleted waters during the monsoon periods of 1991 and 1992, but local fisherfamilies, whose traditional livelihood is threatened by such mechanized boats, usually owned by outsiders, say the bans are not enforced.

The Ecologist 23(1), January/February, 1993



Saltwater Guinea Pigs

Lobster, squid, monkfish *Lophius*, clam and Flounder *Platichthys flesus* are in demand not only for their edible qualities, but as laboratory research animals. Their relatively simple physiology recommends them as subjects for the study of basic life processes and, moreover, some specific applications to various medical disorders are resulting from their observation.

Research on lobsters' well-developed olfactory systems may form the basis for inventing an unmanned submarine which can identify dangerous pollutants, while squid are remarkable for their nerve fibres, or axons, which, at up to half a millimetre in diameter, are the largest in the animal kingdom. Axon research has contributed to safer anaesthetics and to drugs for treating epilepsy and is expected to provide insight into Alzheimer's and Parkinson's diseases. Monkfish have an organ containing insulin-producing cells which are being studied with the aim of tackling diabetes and possibly certain abnormalities of the human reproductive system, an area of research to which clams have also contributed. Flounder and other cold water fish are of interest owing to their anti-freeze proteins which bind tiny ice crystals, and lower the freezing point of blood.

The Marine Biological Laboratory at Woods Hole in Massachusetts which is undertaking such research has taken most of its specimens from the wild, but has plans to breed its own stock of "the white mice of the sea", says the acting director, Alan Kuzarian.

The China Post (China), 31 October 1992

Clams on the Move

The Royal Australian Navy has been enlisted in the translocation of thousands of Giant Clams *Tridacna gigas* (CITES Appendix II) in recent months. The clams are among those bred on Orpheus Island, on the Great Barrier Reef north of Townsville, Queenland, by scientists from James Cook University, as part of a project to learn more about the bivalves' reproduction. Results of the study are intended to benefit those Pacific island communities which traditionally collect clams for food. Removal of clams from the island became necessary as overcrowding had reached the point where shells hit each other on opening and competition for sunlight and an adequate flow of water was so intense that clams were dying. Some 8000-9000 clams have been moved so far and more may follow, after an inventory of those remaining, thought to number about 35 000; some are believed to have been lost to poachers, who in the past have been a serious threat to the survival of the species, a fact which provided a further incentive for the relocation. The destination of the clams taken from Orpheus Island is secret.

Because the genetic make-up of individual clams bred for the project is known to scientists, it is hoped that this information may be useful in tracing the dispersal patterns of clams around the Reef and in identifying which reefs are the sources of marine life which, in turn, will help in the management of the Great Barrier Reef.

New Scientist, 24 April 1993

Fish Fall Foul of Prawns

Hundreds of thousands of fish are being unintentionally caught by prawn trawlers in Australia and discarded. These findings arise from two separate studies which are examining the size of fish by-catches by prawn trawlers: one study, set up by the New South Wales Fisheries Department, is being carried out over a period of three years on the Hawkesbury River, and the other is the work of the Fisheries Research Institute, and centres around Botany Bay. The first study investigated the trawls of 71 randomly selected boats on 110 trips, and reports that by-catches comprise hundreds of thousands of fish, per fleet, annually. The species that are caught include Mulloway *Argyrosomus hololepidotus*, bream *Acanthopagrus* spp., Snapper *Pagrus auratus*, and flathead Platycephalidae. The Botany Bay study has estimated that prawn trawlers are taking and discarding approximately 400 000 young Snapper each year.

The by-catches, together with other pressures on these fish, namely urban pollution and shoreline development, may mean that stocks have become seriously depleted in some waterways. Fishing clubs are expressing anxiety over the issue and calling for the development of fish exclusion devices in prawn nets.

Sydney Morning Herald (Australia), 25 March 1993

Eel Appeal

A handful of companies in Queensland, Victoria and New South Wales, Australia, have identified a market for Longfin Eels *Anguilla reinhardtii* in Asia, where they are eaten as a health food. The eels, which are found in freshwater pools and tidal reaches along the eastern Australian coast, are exported live, to be sold on to restaurants, whose customers choose their preferred eel from a tank containing the live animals. Peak demand for the eels in Asia is between October and March, since eating them is believed to fortify a person against seasonal colds and influenza. Aphrodisiac effects are also attributed to food made from the eels.

Over the past year, sales of Australian eels worth A$1 million (US$688 000) were made. Fifty-six tonnes of these were Longfin Eels exported by one company, Manhattan Enterprises, to Taiwan and Hong Kong. The owners of this company describe their business as one with a "small niche market" whose demands for a high quality product must be understood and whose resources must be properly managed in order for the trade to remain profitable (see also *TRAFFIC Bulletin* 8(3):52).

Australian Fisheries, March 1993

Sea Slug Revival

One of the oldest export industries in Australia is about to be revived after the issuing of licences to take sea slugs or sea cucumbers (holothurians) for commercial and export purposes (see *TRAFFIC Bulletin* 8(1):22). The slugs have been favoured by fishermen in the Indonesian archipelago for centuries and are still harvested in the Indo-Pacific region, where the dried body wall of the slug, known as bêche-de-mer, or trepang, is processed for food and medicinal purposes. Until the early 1940s the slugs formed the basis of Australia's first substantial fishery and export industry, but legislation was introduced prohibiting exports of the resource, which led in turn to a sharp decline in its harvesting. Now, the Northern Territory fisheries authorities have responded to increased interest in the commodity from commercial fishermen wishing to export to Hong Kong and Singapore, where there is a strong demand for the slugs as gastronomic delicacies and for their supposed aphrodisiac powers: six licencees will be permitted to harvest the slugs and will operate mainly in the inter-tidal zone around the Northern Territory coastline and offshore islands. The sea slugs are widely distributed in these waters and are particularly abundant in the shallow, protected estuarine and littoral zones. The family Holothuridae, of which sea slugs are members, has an extremely high reproductive capacity; high losses can be expected during the larval stage, however, and since information about the distribution and abundance of these slugs is incomplete, attempts are being made to minimize the impact of increased commercial interest in the resource. Three zones have been set up in the designated fishing area, each of which has been allocated to two licence holders for slug fishing. Harvesting must be by hand or by diving without the use of scuba equipment and a minimum length for each of six species of sea slug will apply to the take.

The slugs are usually dried for export and rehydrated to about 10 times their dehydrated size on arrival at their destination, but sometimes they may be marketed fresh or frozen.

Australian Fisheries, March 1993

POACHING PENALTIES

The State Cabinet of Tasmania, Australia, has responded to a call from the fishing industry for heavier penalties to be introduced for poachers in Tasmanian waters. With abalone meat selling for between A$40 (US$27) and A$95 a kg, and a medium-sized rock lobster or crayfish retailing for A$40 each, "the potential profits an illegal fisher stands to realize from their crime, particularly in the abalone and rock lobster fisheries are far greater than the maximum penalties which can be handed down by the courts", stated Mr Gray, the Minister for Primary Industry and Fisheries in Tasmania. The new penalties approved will include a maximum fine of A$500 000.

The Advocate (Australia), 13 April 1993;
The Advertiser (Australia), 21 April 1993

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Rock lobster

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BOPHUTHATSWANA

Stricter penalties for poaching offences have been introduced in Bophuthatswana. First-time offenders are now liable to fines of R200 000 (US$60 000) or a prison sentence of 20 years; penalties could be doubled for subsequent convictions. The new penalties have been introduced to prevent a possible increase in poaching following the opening of the Madikwe Game Reserve, along Bophuthatswana's border with Botswana.

The Star (South Africa), 1 April 1993

GUYANA

Guyana temporarily suspended wildlife exports with effect from 13 May 1993. The ban is expected to continue pending the results of a review of wildlife trade management in the country. The CITES Secretariat has suggested that Guyana lift the ban with respect to skins of Spectacled Caiman *Caiman crocodilus*, in view of the good management programme for this species.

UK Department of the Environment CITES Newsletter, July 1993; IUCN Sustainable Use of Wildlife Programme; CITES Secretariat

INDIA

On 1 April 1993, India banned the export of medicinal plants of wild origin; the export of wild and cultivated Costus (Kuth) roots *Saussurea lappa* (CITES Appendix I) has also been prohibited.

TRAFFIC India

SHARJAH

The municipality of Sharjah, in the United Arab Emirates, has lifted a ban it imposed in April on the trade in certain bird species. The trade in Houbara Bustard *Chlamydotis undulata* (CITES Appendix I), Hoopoe *Upupa epops*, Ostrich *Struthio camelus*, and species of pelican, crane, flamingo, stork, owl and a number of other birds of prey, is now permitted. Trade in other animals covered by the ban remains prohibited.

The instruction to lift the ban was ordered by the Ruler of Sharjah, H.H. Dr Sheikh Sultan bin Mohammed Al-Qasemi. In November 1992, UNEP's Special Envoy for the Rhinoceros, Esmond Bradley Martin, had a meeting with the Ruler of Sharjah at which the Ruler agreed to order his authorities to stop any endangered wildlife from entering the Emirate and stated that he was anxious to see that CITES regulations are implemented in Sharjah.

Gulf News (Dubai), 25 May 1993; Swara, May/June 16(3), 1993

QUOTAS

China and Russia: Lynx

The Management Authority of China has established a quota on the export of specimens of Lynx *Felis lynx* at the level of 1000 animals a year.

The Russian Federation has also established a quota for the export of specimens of *Felis lynx*, set at 2800 animals a year. This national quota applies to the Russian Federation only and not to any of the other States in the Commonwealth of Independent States, many of which prohibit the capture of and trade in specimens of *Felis lynx*.

CITES Secretariat, Notifications to the Parties Nos. 741 and 745, 7 May 1993

Madagascar: Grey-headed Lovebird

Madagascar has established a quota on the export of specimens of Grey-headed Lovebirds *Agapornis canus* at the level of 3500 birds a year, pending the results of a survey of this species in the wild.

CITES Secretariat, Notification to the Parties No. 744, 7 May 1993

Tanzania: African Elephant

Tanzania has announced that its hunting trophy export quota for African Elephant *Loxodonta africana* will remain at 50 animals for 1993.

CITES Secretariat

VIET NAM

In March 1993, the Prime Minister of Viet Nam, Mr Vo Van Kiet, issued an instruction which prohibits the display or sale of "rare or endemic" wildlife and specifies a strict ban on the sale of "rare or endemic" wildlife at local and border markets, for food, for making medicines, or for raising as pets. The instruction restricts to a "minimum level" the catch for export of animals to be used as food, such as snakes, tortoises, crabs, frogs and other animals which, although not rare, are threatened by overuse. In his order, Mr Vo Van Kiet also calls for publication of a Red Data Book for Viet Nam and for preparations to be made for the country to join CITES.

TRAFFIC Southeast Asia

PUBLICATIONS

The TRAFFIC Network has published the following reports in the SPECIES IN DANGER series which are available from TRAFFIC International

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The Smuggling of Endangered Wildlife Across the Taiwan Strait
Jim Low

The result of an investigation which aimed to identify species illicitly traded across the Strait from mainland China to the island of Taiwan.

July 1991. 24pp. £2.50 (US$5)

Perceptions, Conservation and Management of Wild Birds in Trade
Edited by Jorgen B. Thomsen, Stephen R. Edwards & Teresa A. Mulliken

A report of the bird trade within the key exporting countries: Argentina, Guyana, Indonesia, Senegal and Tanzania, and an overview of the global trade. It explores the economics of the trade, its relationship to animal welfare and conservation issues, and proposes a model management framework.

January 1992. 165pp. £5 (US$10). Out of Print. Reprint in preparation.

The Horns of a Dilemma: The Market for Rhino Horn in Taiwan
Kristin Nowell, Chyi Wei-Lien & Pei Chia-Jai

A summary of the status of the domestic market for rhino horn in Taiwan in February 1992, with recommendations for a strategy to bring consumption of rhino horn under control.

February 1992. 44pp. £2.50 (US$5). Out of print. Reprint in preparation.

The Control of Wildlife Trade in Greece
Edited by Tom De Meulenaer & Julie Gray

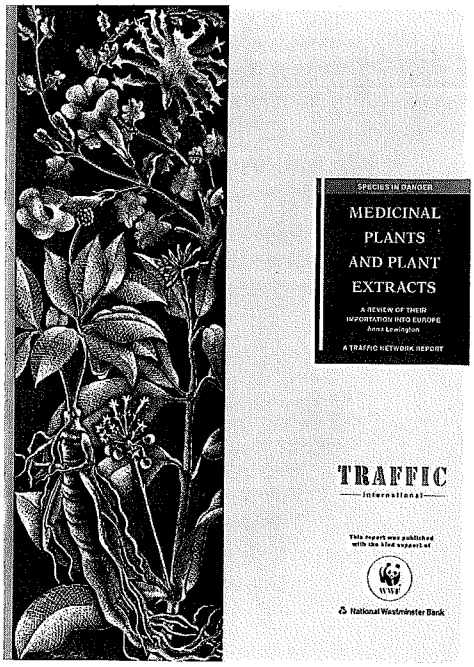
This report documents the findings of a survey of wildlife trade prior to the country's ratification of CITES, but when the country was already bound by its membership in the European Community to enforce the EC CITES regulation.

July 1992. 37pp. £2.50 (US$5)

The World Trade in Rhino Horn: A Review
Nigel Leader-Williams

A summary of the available information on volumes and prices of rhino horn on world markets and an examination of policies to halt the rhino horn trade.

September 1992. 40pp. £2.50 (US$5)



Illegal Tropical Timber Trade: Asia-Pacific
Debra J. Callister

Preliminary findings on illegal forestry practices which have resulted in the loss of millions of dollars in foreign exchange, uncollected forestry taxes and loss of forest resources.

October 1992. 83pp. £5 (US$10).

Wild Plants in Trade
Martin Jenkins & Sara Oldfield

Based on the results of a Europe-wide survey, this report describes the legal and illegal trade in wild-collected plants and discusses the impact of such collection on these species.

December 1992. 36pp. £2.50 (US$5)

Medicinal Plants and Plant Extracts: A Review of their Importation into Europe
Anna Lewington

An overview of the pharmaceutical trade in wild plant material with recommendations for future conservation action.

May 1993. 37pp. £2.50 (US$5).

The Decline of the Black Rhino in Zimbabwe: Implications for Future Rhino Conservation
Tom Milliken, Kristin Nowell & Jorgen B. Thomsen

An evaluation of Zimbabwe's Black Rhino conservation strategy in the face of continuous poaching and illegal trade in rhino horn, and an assessment of future options for rhino conservation, including re-establishment of a legal trade in rhino horn.

June 1993. 76pp. £5 (US$10)

Domestic and International Trade in Narwhal Products

Randall R. Reeves

The Narwhal Monodon monoceros *is a medium-sized odontocete, or toothed whale, that has long been hunted by aboriginal inhabitants of arctic regions, where this species occurs. Besides providing food and oil, adult male Narwhals produce a unique and valuable commodity: a long, straight, spiralled ivory tusk - the natural object most closely resembling the fabled unicorn's horn. In addition to its value to local communities, the Narwhal is subject to commercial hunting for the international market. All cetaceans were included in CITES Appendix II in 1979, which has allowed a closer examination of the Narwhal trade. The present article is a synthesis of the trade information contained in Reeves (1992a, 1992b, 1993) and Reeves and Heide-Jørgensen (in prep.), with some statistical updates.*

Introduction

From as early as the 18th century, European and Asian merchants conducted a brisk trade in Narwhal ivory and encouraged the belief that 'alicorn', as it was called, had medicinal, therapeutic and aphrodisiac qualities. Commercial whalers who visited the Arctic in pursuit of Bowhead Whales *Balaena mysticetus* occasionally hunted Narwhals. However, many of the Narwhal products that these whalers brought home (mostly tusks but also skins for tanning) were obtained through barter with the local Inuit inhabitants. In addition to their contact with commercial whalers, the Narwhal hunters were linked to distant markets by private traders, the Hudson's Bay Company, and the Royal Greenland Trade Department (Kongelige Grønlandske Handel). This longstanding arrangement continues to the present. Although some tusks are sold privately, Inuit hunters in both Canada and Greenland often depend upon middlemen to buy tusks in the settlements and then distribute them in the global marketplace.

Aside from the tusk, the skin and meat are the only other Narwhal products with a cash value today, but the demand for them is almost entirely within Inuit communities. Narwhal skin, called *maktaq* in Canada and *mattak* in Greenland, is nutritious (particularly high in Vitamin C) and regarded by most Inuit as a delicacy. The red meat is generally not sold in Canada but is sold in Greenland, albeit at a price well below that of *mattak*.

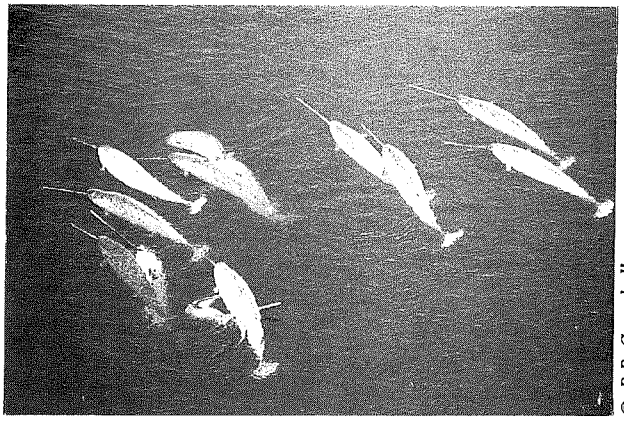
The Narwhal has been listed in CITES Appendix II since 1979; international trade in this species must therefore be supported by export permits and re-export certificates as appropriate.

Distribution and Population Status

The Narwhal is one of three whale species endemic to arctic waters. Its distribution is more restricted than that of either the Bowhead or the Beluga *Delphinapterus leucas*, both of which have a more circumpolar range. The three centres of Narwhal distribution are: (1) waters bordering the eastern Canadian Arctic Archipelago and western Greenland; (2) northern Hudson Bay and western Hudson Strait; and (3) the Greenland and western Barents Seas. The degree of genetic mixing among animals from the three centres of distribution is uncertain. However, for assessment and hunt management they are generally viewed as discrete stocks (Anon., 1992a; in press).

Narwhals live in an extremely harsh environment, where field research is high-risk, expensive and logistically complex. Aerial surveys must sample huge areas of ocean and are often compromised by unfavourable ice conditions, stormy weather, limited daylight and equipment breakdown. Therefore it is not surprising that most abundance estimates have large variances and require careful interpretation. The Hudson Bay stock has been conservatively estimated at about 1300 whales, with no correction for animals below the surface during the surveys (Richard, 1991). The shared 'Baffin Bay stock' between eastern Canada and western Greenland has an estimated 28 000 to 43 000 whales (Anon., in press). No meaningful estimate has been made for stocks east of Greenland.

The International Whaling Commission (IWC) has usually expressed the status of cetacean stocks in terms of their current abundance relative to 'pristine' or pre-exploitation abundance. For Narwhals, however, this is impossible since little is known about past numbers. It is also difficult to estimate sustainable yield in the absence of reliable information on Narwhal reproduction and natural mortality. Even if abundance and life-history parameters were better known than they are, the problem would remain of determining how many Narwhals are actually killed each year by hunting, and thus of judging whether the hunt is sustainable. Catches in both Canada and Greenland are incompletely reported, and there is often undocumented mortality when whales that have been killed sink, or when severely wounded whales escape.



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Adult male Narwhals, Milne Inlet, off northern Baffin Island.

Regulations Affecting the Hunt

Self-Regulation

The question of whether Inuit traditionally managed their own hunting practices with the explicit goal of conserving Narwhals has no satisfactory answer. Narwhals were never easy quarry. Their capture tested a hunter's strength, skill and stamina. The difficulty of killing Narwhals with pre-modern whaling techniques and equipment gave the animals virtual protection from overexploitation. Also, most aboriginal hunters followed a seasonal round of activities, hunting each species of game during a particular time of year. Depending on the location, Narwhals either were intercepted as they migrated along an ice edge or a particular stretch of coast, or they were hunted during the brief summer while congregated in deep embayments. In some parts of Greenland a special effort was, and still is, made in winter to locate and catch ice-entrapped pods of Narwhals (Porsild, 1918; Siegstad and Heide-Jørgensen, in prep.). The low density of human habitation in most of the Arctic probably meant that a given group of Narwhals was subjected to intensive hunting during only a part of its annual migratory cycle.

Even with modern equipment, including engine-powered conveyances and high-powered rifles, hunters must work hard to bring home *maktaq* and ivory. During the past half-century Inuit in both Canada and Greenland have increasingly settled in villages; relatively few people still live 'on the land' in scattered encampments. Some of the men who formerly would have hunted full-time now have waged employment and hunt only at weekends and during holidays. Thus, while the killing power of individual hunters has certainly increased, and they are now able to travel more quickly over long distances by power boat or motor toboggan (skidoo or snowmobile), the collective hunting effort may be more circumscribed than it was formerly.

Hunting Regulations in Canada

Prior to the early 1970s, there was no national or international regulation of hunting, and products could be traded without any interference by Government authorities. In 1971, the Canadian federal Government enacted the *Narwhal Protection Regulations* which gave Inuit the exclusive right to hunt and established an annual catch limit of five Narwhals per hunter, to be taken "for food for himself, his family and his dogs." However, little effort was made to enforce the catch limit. In 1976, the five-whales-per-hunter catch limit was replaced by a system of settlement quotas "based on historic harvest levels and limited biological data" (Strong, 1988), and this system continues today. To help enforce the quotas, all tusks entering trade have to be accompanied by an official tag. The current national quota of 527 Narwhals[1] is not reached in most years according to official catch statistics. However, the quota is applied essentially as a limit on the number of tusks (and to some extent units of *maktaq*) that enter trade rather than as a limit on the total Narwhal catch. Since females and young Narwhals usually lack tusks of commercial size, the number of tusks traded under-represents the actual catch. Some untusked Narwhals do get reported and entered against the quota, but some do not. For example, in a detailed study at Pond Inlet, on northern Baffin Island, in 1979, it was estimated that only seven of 67 females taken (about 10%) were reported (Finley and Miller, 1982).

With the imminent resolution of land claims in the eastern part of the Northwest Territories (Nunavut), responsibility for developing hunt-management strategies will increasingly devolve from the federal Government to regional bodies with broad representation of local interests (Richard and Pike, 1993). It is hoped that the evolving 'co-management' arrangements in Canada will lead to a more effective regime for ensuring that catches are sustainable.

Hunting Regulations in Greenland

The Inuit of Greenland are widely perceived as having a more traditional, or conservative, approach to hunting and resource use than the Inuit of Canada. Hunting by kayak is still practised in a few areas (Born, 1987), and this results in a smaller proportion of whales being wounded or killed but not retrieved: the whales are not shot until they have been harpooned, thus greatly improving the chances of landing those that are struck. The system for reporting catches in Greenland, begun in 1862, has become less reliable since the early 1970s (Kapel, 1978; Heide-Jørgensen, 1990). Although most of the hunting regulations have been more concerned with hunter safety and access to game than with conservation *per se*, provisions in some of the regulations protect wildlife that is sensitive to disturbance, such as that from motorboat traffic (Kapel and Petersen, 1982; Qujaakitsoq, 1990). In 1992, the regulations were clarified concerning who is allowed to hunt Narwhals and Belugas, the methods and devices that are permitted to be used in the hunt, the conduct of hunting at ice-entrapment events (*sassats*), and the reporting of catches (Anon., 1992b). However, there is no quota on the number of Narwhals that can be taken in Greenland, nor is there any control of the trade in Narwhal tusks apart from the need for CITES export permits.

[1]Although the printed regulations give settlement quotas totalling 527, the quota for Igloolik has been raised from 10 to 25 each year since 1980 through 'variation notices' (J.G. Pryznyk, Department of Fisheries and Oceans, Co-ordinator, Legislation and Compliance, Yellowknife, NWT, *in litt.*, 11 March 1992). Thus, the total national quota has actually been 542 Narwhals.

The Tusk Trade in Canada

Historically most Narwhal tusks from the Canadian Arctic were apparently either sold within Canada or exported to the UK. Some tusks were also exported to the USA, until the introduction of the *Marine Mammal Protection Act* outlawed the import of cetacean ivory in 1972. A small number of tusks, often designated as 'pre-CITES', still enters the USA with CITES documentation (Table 1).

The price paid to hunters, which had increased from CA$2 in 1966 to more than CA$60 per pound (453 g) in the early 1980s, plunged to about CA$13 in 1984[2] (the year an EC import ban came into effect, see below). Canadian wholesalers, including the Hudson's Bay Company, were unable to dispose of inventoried stock and sharply reduced their purchases of Narwhal ivory.

In 1983, a private wholesaler based in Ontario, who had good contacts in Japan, began buying tusks in northern Baffin Island. By the end of the decade this dealer had taken over much of the export market, and hunter prices had recovered to near their peak levels of the early 1980s (Reeves, 1992a). In August 1990, when the author last visited northern Baffin Island, the Hudson's Bay Company store (now called Northern Stores) in Arctic Bay had the following price schedule for the purchase of Narwhal tusks from hunters: CA$100 a foot (US$87) (1 foot = 0.3048 metre) for 5-6 foot tusks, CA$150 a foot for 6-7 foot tusks, CA$200 a foot for 7-8 foot tusks, and CA$250 a foot for tusks longer than 8 feet. An average unbroken tusk is about 7 feet long (2 m) and thus would have been worth more than CA$1000 to the hunter at that time.

Year	No. of tusks	Country of origin	Country of export/re-export
1979	1	?	UK
1980	2	Greenland	UK
1981	1	Greenland	Greenland
	4	?	UK
1982	1	Denmark	UK
	1	?	France
	1(carving)	?	UK
1985	1	Greenland	Denmark
	2	?	UK
1986	1	?	UK
	2(carvings)	Greenland	UK
1987	1	Canada	Canada
	1[2?]	?	UK
1988	1(carving)	?	UK
	2	?	UK
1990	7(carvings)	?	UK

Table 1. US imports of Narwhal tusks, 1979-1990.
Sources: M.P. Jones, Department of the Interior, Washington, D.C., in litt. *to R.L. Brownell, Jr., 26 May 1992; supplemented by US CITES annual reports. A few additional items have been reported as exported to the USA by CITES Parties in the CITES annual reports.*

In addition to regulation of the international Narwhal trade under CITES, EC Regulation 3626/82 (which took effect on 1 January 1984) requires European Community Member States to treat all cetaceans as though they were listed in CITES Appendix I. This regulation effectively stopped, or at least significantly slowed, the exportation of Canadian Narwhal ivory to the UK and other EC countries (Table 2). The pattern of Canadian exports is

Importer	79	80	81	82	83	84	85	86	87	88	89	90	91	92
UK	96	60	36	33	63	33					1	1		10
Japan	2	3	1	4	4	16	15	20	9	27	104	76	49	42
Switzerland			1		2	1			10	2	17	22	25	10
Italy	6	3	1		17	1				3	1	1	1	
France	2	3			3	3		1			1	6	23	
Germany			1			2		1						
Mexico												5	4	5
Australia				3										
Denmark												3		
USA	1								1			1		
Saudi Arabia		1												
Sweden									1					
Ireland				1										
New Caledonia						1								
Netherlands								1						1
Austria										1		1		
Singapore										1				
New Zealand					1									
Cuba					-*									
Monaco				1										

Table 2. Numbers of whole Narwhal tusks exported by Canada, 1979-1992. *One bag of small tusk pieces
Sources: 1979-1991 data (CITES annual reports for Canada); 1992 data (R.R. Campbell, CITES Administrator, Canadian Wildlife Service, Hull, Québec, in litt., *14 July 1993).*

[2]The price rise and decline is still quite pronounced when adjusted for inflation (see Reeves, 1992a: Fig.2).

Importer	85	86	87	88	89	90	91
Denmark	51	93	91	162	153	325	152
Switzerland		2			3		22
Japan		11	1	2	3	3	2
Canada	3	1		3			5
Germany			2		4	1	5
Sweden	2			1	2	3	4
Norway		1	1	4	1		4
Faroe Islands	1	2	1		2		
France	1	1		2			1
Italy						2	3
UK			4				
Philippines							3
Finland						1	
USA							1
New Zealand							1
Belgium					1		

Table 3. Export destinations and numbers of Narwhal tusks covered by CITES permits issued by Greenland Home Rule, 1985-1991. *Sources: Files of Greenland Home Rule examined by the author; additional information supplied by Greenland CITES Management Authority; see Reeves and Heide-Jørgensen (in prep.).*

now much different than it was prior to the EC trade ban. Whereas before the ban more than 80% of the exported tusks went to the UK, now more than 50% usually go directly to Japan and few go directly to the UK (Table 2). After 1985, Switzerland, a non-EC country, was the second most important export destination after Japan, although a relatively large number of exports to France was reported in 1991. Narwhal tusks from Canada can be imported to EC countries if the transaction is not commercial in nature, for example if they are declared as "personal effects" (as were 17 of the 23 tusks exported to France in 1991, according to Canada's CITES annual report for that year).

There is a substantial demand for Narwhal tusks within Canada. Temporary residents and visitors to the Northwest Territories often buy tusks as souvenirs, and whole tusks can be purchased at speciality shops in southern Canadian cities. Because wholesalers sometimes carry large inventories of tusks for several years (Broad *et al.*, 1988), it is difficult to estimate the proportion of a given year's tusk harvest that is exported rather than sold within Canada. Reeves (1992b) made a crude estimate that slightly more than half of the tusks that became available between 1975 and 1989 were covered by CITES export permits.

The Tusk Trade in Greenland

As one would expect, historically the bulk of Narwhal tusks from Greenland was shipped to Denmark and this remains true today (Table 3). In fact the Kongelige Grønlandske Handel (KGH) had an official monopoly on the Greenland trade from 1774 to 1953 (Tejsen, 1977). After 1953, when Greenland's status changed from a colony to a county of Denmark, the KGH continued to dominate trade. Although a growing influx of visitors and temporary foreign residents has given hunters some direct access to markets, many Narwhal tusks are still sold initially to the Kalaallit Niuerfiat (KNI) as the KGH has been re-named. These are then either sold by KNI retail stores in Greenland (mainly to Danes but also to other foreign visitors) or shipped to the company's headquarters in Copenhagen for domestic distribution or re-exportation. Although Greenland formally withdrew from the EC in 1985, the restrictions on commercial importation of Narwhal ivory under EC Regulation 3626/82 do not apply to tusks originating in Greenland. Annex C of the EC Regulation explicitly exempts the products and derivatives of cetacean specimens "taken by the people of Greenland under licence granted by the competent authorities of Greenland or Denmark." A recent amendment to EC Regulation 3626/82 explains that "in view of the predominantly cultural nature of the making of certain handicraft articles in Greenland from species of Cetacea and of the low volume of such activity, it shall not be regarded as consistent with the relevant provisions of the Regulation. The management authorities in Denmark will, in consultation with the Commission, monitor such exports and imports, which must not significantly exceed the present low level" (Anon., 1990).

No. of tusks:		UK imports	UK re-exports									
Year		(Exporting country)	Belgium	Guadeloupe	Germany	Italy	USA	France	Spain	Switzerland	Denmark	Japan	Chile
1979	81	(Canada)			3	1							
1980	211	(Canada)				23	2	2	1				
1981	20	(Canada)				11	1	4		3	1	1	
1982	38	(Canada)			1	11	2	1		3			4
	1	(Denmark)											
1983	30	(Canada)	2		1		1			8			
1984	8	(Canada)		2			4[1]						
	1	(Denmark)											
1987	1[2]	(USA)											
	1	(Israel)											
1988	2	(Greenland)											
1989	2 kg	(Canada)											
1990	1	(Canada)								1[2]			

Table 4. UK imports and re-exports of Narwhal tusks, 1979-1990. [1]includes 2 ivory carvings; [2]ivory carving. *Source: UK CITES annual reports.*

Year	No. of tusks : Country of export (Country of origin) Switzerland (Canada)	(Denmark)	(Greenland)	(Dominica)	Canada	Denmark (Greenland)	Denmark	Greenland	Germany
1983	5kg	4kg							
1984			2						
1985					15	1			
1986		1			24		1	2	
1987	3				8		1		
1988	3				20				
1989	7				97	75kg			
1990	5			12[1]	67				1

Table 5. Japanese imports of Narwhal tusks, 1983-1990. [1]Country of origin given as Dominica, in error. *Source: Japanese CITES annual reports.*

Comparatively little information is available on trends in the price of Narwhal ivory in Greenland. Hunters reportedly received DKr.45 a kg in 1968 (Hansen, 1970) and DKr.715 a kg in 1984 (Born, 1987). In view of the high inflation in Greenland between 1970 and 1985 (Hertz and Kapel, 1986; Born, 1987), the real increase in value of Greenlandic Narwhal ivory was not nearly as dramatic as it might appear. In any event, the price paid to hunters declined by about 30% in 1985 owing to "a reduced market outside Greenland probably related to import restrictions enforced in 1984 by the EEC" (Born, 1987). Hunters in Greenland received DKr.725 (US$120) a kg for unbroken Narwhal tusks in 1990. Unlike in Canada, where Narwhal ivory is infrequently used for carving and crafting, Greenlanders often make souvenirs and craft items from small or damaged tusks. Figurines (*tupilaks*), rings, crochet hooks, and flag or lamp stands made entirely or partly from Narwhal ivory are among the items exported.

In comparison with Canada, it is likely that a much higher proportion of the total Narwhal ivory secured in Greenland is ultimately exported, either as raw tusks or in the form of craft items.

Re-Exportation of Narwhal Tusks

Denmark and Switzerland apparently re-export many of the Narwhal tusks that they import. In the case of Denmark, exports to other EC countries do not require CITES export permits, so records of these exchanges do not necessarily appear in the CITES annual reports. Information obtained directly from Denmark's Ministry of the Environment, however, indicates that substantial numbers of tusks are re-exported to the UK, with smaller numbers going to Switzerland, Belgium, Italy and Japan (Reeves and Heide-Jørgensen, in prep.). Many of the tusks re-exported to the UK are shipped in lots of four or more, suggesting that they are destined for companies or individuals who intend to re-sell the tusks, either within the UK or abroad. The UK was apparently an entrepôt for the international Narwhal tusk trade prior to the EC ban (Klinowska, 1991). A large proportion of re-exports went to other EC Member States (Table 4); such intra-Community trade has not been recorded since 1984. Most of the tusks re-exported from Switzerland went to Japan (Tables 5 and 6). It is noteworthy that Japan's imports of Narwhal tusks from Switzerland are lower than the re-exports to Japan recorded by Switzerland.

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Children sitting on carcass of a female Narwhal, Arctic Bay, Northwest Territories.

Year	No. of tusks: Swiss imports (Exporting country)	Swiss re-exports Japan	Italy
1979	1 (France)		
1981	2 (UK)	4	
1982	1 (Canada)	6	
	6 (Denmark)		
	3 (UK)		
	2 (Greenland)		
1983	2 (Canada)	14	
1984	2 (USA)	2	
1985	2 (Denmark)		
1986	1 (Denmark)	1	
1987	8 (Canada)	5	
	1 (Denmark)		
	1 (France)		
1988	1 (Denmark)	7	
	3 (France)		
1989	5 (Canada)	10	3
1990	24 (Canada)	17	
	16 (Denmark)		
	1 (France)		
1991[1]	22 (Canada)	13	
	7 (Denmark)		
	1 (Japan)		

Table 6. Swiss imports and re-exports of Narwhal tusks, 1979-1991. [1]Preliminary data *Source: Swiss CITES annual reports.*

Commerce in *Maktaq* and Meat

There is still a strong demand for Narwhal *maktaq* among the Inuit of Canada and Greenland. The diet of modern Inuit includes many imported items, and most people no longer depend on food from wild animals for their survival. Nevertheless, even with the knowledge that whale skin and meat are contaminated with organochlorines and heavy metals, many Inuit continue to regard such 'country food' as more palatable and nutritious than imported substitutes. This tenacious preference is rooted in a longstanding appreciation of the benefits provided by traditional foods - some nutritional and some socio-cultural (Kinloch *et al.*, 1992).

If the trend in *maktaq* prices is any indication, the demand for this commodity has been growing faster than the supply in both Canada and Greenland over the last 15 years. At Arctic Bay, the price paid to hunters increased from less than CA$2 a kg in 1980 to more than CA$4 a kg in 1990 (Reeves, 1993). The local retail price has soared from CA$0.77 a kg in 1975 to CA$10.36 a kg in 1990[3]. Substantial amounts of frozen Narwhal *maktaq* are exported from Arctic Bay to Iqaluit in southeastern Baffin Island, where it can be sold in stores for almost twice the price that it commands at stores in Arctic Bay. This 'export' business means that the Narwhal population of the Lancaster Sound region is supplying *maktaq* to a larger Inuit community than just the few settlements in northern Baffin Island.

Greenland's internal marketing system for Narwhal *mattak* and meat is more developed than that which exists in Canada. Already by the early 1970s as much as 80% of the *mattak* landed in Avanersuaq district was sold to the KGH, some of it for local re-sale and some for export to southern districts of Greenland (Bruemmer, 1971; Born, 1987). The price paid to hunters increased from DKr.7.50 in 1971 to DKr.50 a kg in 1990 (an increase that can be attributed almost entirely to inflation). In 1991 the retail price of *mattak* in Greenland was DKr.145.50 (US$24) a kg but it has since declined to DKr.104.50 a kg (M.P. Heide-Jørgensen, pers. comm., April 1993). However, it is still relatively expensive (Table 7). Given the high mark-up, hunters often circumvent the shops and sell their products directly to consumers (M.P. Heide-Jørgensen, pers. comm., April 1993).

Traditionally Inuit in northern Baffin Island fed much of the meat and viscera of whales to their sledge dogs. With the proliferation of motor toboggans and consequent decline of dog traction as the standard mode of winter transportation however, the need for whale carcasses as dog food declined sharply in the Canadian Arctic. Dog teams are making a resurgence in some areas today, re-establishing the need for reliable supplies of meat and fat. The Hunters and Trappers Association in Arctic Bay also initiated a project several years ago to encourage more human consumption of dried Narwhal meat ('jerky'). The Association bought some of the meat from hunters and sold it dried for CA$35-CA$40 a kg. In Greenland, in 1990, frozen Narwhal and Beluga meat was available in stores for about the same price as frozen fillets of Halibut *Reinhardtius hippoglossoides* (Table 8).

Item	Price/kg (DKr.)
Halibut fillet	65.75
Reindeer T-bone	64.75
Mattak	104.50
Dried capelin	20.50
Smoked salmon	125.00
Scallops	142.50
Shrimp	44.50
Camembert	12.25
Red cabbage	16.95

Table 7. Selected retail food prices in Søndre Strømfjord, West Greenland, March 1993.
Source: M.P. Heide-Jørgensen, in litt., *7 April 1993.*

Item	Price/kg (DKr.)
Nuuk:	
Beluga/Narwhal meat from Upernavik, frozen	43
'Whale beef' (fin or minke whale), fresh	60
Halibut, fresh at open-air market	40
Ilulissat:	
Fin whale meat, fresh	50
Reindeer meat, fresh at open-air market	70
Seal meat, frozen	41
Lamb heart, fresh	35
Ground beef, fresh	55
Reindeer steak, frozen	153
Leg of lamb, frozen	72
T-bone steak, fresh	100
Pork chops, fresh	80
Halibut fillets, frozen	42
Whole halibut, frozen	22
Shrimp, frozen	108

Table 8. Selected meat prices in stores in Nuuk and Ilulissat, West Greenland, August 1990.
Survey by the author.

Future Hunt Management

The IWC Scientific Committee reviewed the status of Narwhal stocks at its 1992 annual meeting and expressed continuing concern about the sustainability of harvests from the Baffin Bay stock (Anon., in press). There is controversy within the IWC about the Commission's competence for managing the exploitation of small and medium-sized toothed whales, including the Narwhal and Beluga. At present these species are not included in the IWC's schedule of whaling regulations. Thus, resolutions calling for more intensive research and more prudent hunt-management measures are of questionable

[3]When adjusted for inflation, this price has still increased by nearly five times (Reeves, 1993:Table 1).

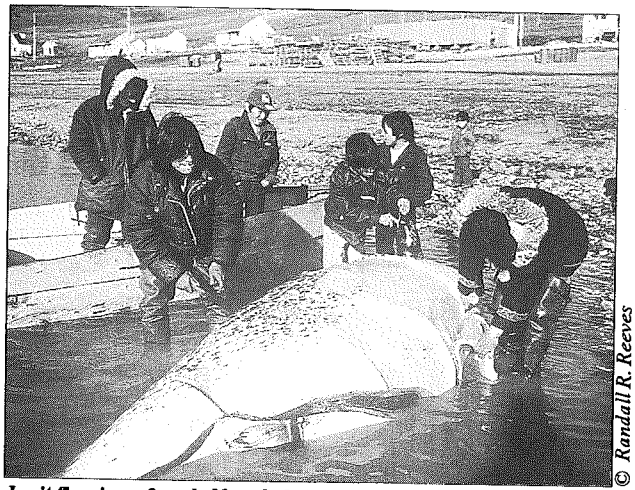
value, especially in view of the fact that Canada withdrew from the IWC in 1981. Greenland is officially represented in the IWC by Denmark, but it is doubtful whether the Home Rule Government would allow restrictions from outside the country to have any major direct impact on the Narwhal and Beluga hunts, which are central to the mixed (subsistence and cash) economies of some northern settlements.

Canada and Greenland have been seeking ways to manage Narwhal hunting jointly outside the IWC framework. They agreed in 1989 to form a Canada-Greenland Joint Commission on Conservation and Management of Narwhal and Beluga (JCCMNB), which met for the first time in 1991. At its second meeting, in April 1992, the Commission was advised by its scientific working group that the rate of removals of Narwhals by hunting from the Baffin Bay stock may not be sustainable, and tentative plans were made for a comprehensive aerial survey of the summering areas, possibly in 1996 (Anon., 1992c). At the time of writing (July 1993), the JCCMNB has made no recommendations concerning Narwhal hunt management. Hunters and their representatives have been encouraged to participate in this Commission's deliberations, and such participation should provide the legitimacy necessary for any conservation measures eventually recommended.

A proposal sponsored by the Federal Republic of Germany in 1985 sought to place the Narwhal in Appendix I of CITES. Canada and Denmark mounted a concerted effort to demonstrate that such a classification was unwarranted, and the proposal was defeated. Since 1985, the value of Narwhal ivory and *maktaq* has increased in Canada and remained high in Greenland. Scientific understanding of Narwhal biology and behaviour remains rudimentary. Trends in Narwhal populations are poorly known, although the total population size remains fairly large. Given the scientific and technical problems of field research and present funding constraints, the prospects for improving knowledge of population trends are uncertain. It is very difficult to assess the relationship between the market demand for ivory and the intensity of hunting. Hunters are motivated by a desire not only to obtain large tusks but also by the demand for *maktaq* (whether for household consumption or for sale) and by less tangible considerations that have more to do with 'cultural reproduction' than simply with cash generation or food procurement.

Discussion and Recommendations

There is evidence that Narwhal tusks have been imported by at least 25 countries between 1979 and 1991 and that several hundred new tusks have been introduced to the marketplace in most years. Further research is needed on the destination of these tusks and how economic and socio-cultural factors affect decisions about the investment in Narwhal ivory. The market for *maktaq* also requires further investigation. If it is correct to assume, as the Canadian federal Government has done, that Narwhal hunting is primarily a food quest and that



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Inuit flensing a female Narwhal, Arctic Bay, Northwest Territories.

ivory is only a 'by-product' (Yaremchuk and Wong, 1989), then the demand for *maktaq* may ultimately be a more critical factor when considering Narwhal conservation.

It would also be useful to investigate more closely the uses to which Narwhal ivory is put today. Presumably most large, unbroken tusks are purchased as souvenirs or trophies, and they end up mounted in homes or offices. At least some of the small or broken tusks are used for carving and other crafts. Particularly intriguing is the prominent role Narwhal ivory once played in Asian pharmacology. A late 18th-century Japanese source described it as having "miraculous" medicinal properties and as being "more potent" than rhinoceros horn (Hawley, 1960). This "unicorn horn" was considered "a veritable catholicon or universal remedy, and an antidote ... against all poisons; and Japanese physicians profusely vied with one another to procure it" (Hawley, 1960).

A photograph published in 1983 in *Swara* , the magazine of the East African Wildlife Society (Martin, 1983; see also Martin and Martin, 1987), shows a small, intact Narwhal tusk on display next to a rhinoceros horn in the window of a traditional Japanese medicine shop in Kyoto. Presumably it was to be pulverized or reduced to shavings and administered as a drug, following the custom that existed at least as recently as the 1950s (Hawley, 1960). However, E. Martin (*in litt.*, 23 February 1991) rarely encountered Narwhal tusks during his investigations of wildlife medicines in Japan, and Japanese conservationist H. Sato (*in litt.*, 3 April 1992) believes that the use of Narwhal ivory in Oriental medicine is exceptional today.

Narwhal ivory, generally described as hard and brittle in comparison with elephant ivory, is not believed to have been used on a large scale as a substitute for elephant ivory. Nevertheless, the dramatic depletion of rhinoceros and elephant populations as a result of demand for their horns and tusks might provide a lesson for Narwhal conservationists. The demand for Narwhal tusks may be sensitive to factors not unlike those that have affected the markets for rhinoceros and elephant products (as status symbols, for the development of craft industries, and as folk medicine, for example).

The Narwhal is not an endangered species, and it might be argued that Narwhal hunting is potentially suited to the new rhetoric of 'sustainable development': the species offers the possibility of providing both nutritious food and cash income to inhabitants of the Arctic. However, before the full potential of integrating human needs with Narwhal conservation can be realized, much more needs to be known about the condition of Narwhal stocks and their resilience to harvests, and about the factors that drive the hunt.

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INDEX VOL. 13

Entries in bold type indicate illustrations

TRAFFIC Bulletin
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A Report of the 45th Annual Meeting

Justin Cooke and Jørgen Thomsen

The 45th Annual Meeting of the International Whaling Commission (IWC) was held in Kyoto, Japan, from 10 to 14 May 1993. The Scientific Committee and various working groups of IWC met prior to the meeting from 22 April. Thirty-four IWC Member States, of which 32 had voting rights, participated in the meeting of the Commission, together with three non-Parties (Austria, Canada and Iceland). Observers from eight inter-governmental organizations and 84 non-governmental organizations also attended. In addition, over 600 members of the press were accredited to attend the meeting.

Revised Management Scheme

A Revised Management Scheme (RMS) was defined by a resolution passed at the 44th annual meeting of the IWC in 1992. The resolution specified that the central part of the RMS, the Revised Management Procedure (RMP) which includes the Catch Limit Algorithm (CLA), not be implemented until all elements of the RMS were incorporated into the IWC Schedule, thereby giving them legal force. The CLA is a set of rules for calculating catch quotas based on the available estimates of population size, previous catches, and other information. The other items identified in the 1992 resolution as essential components of the RMS were: (i) a system of observation and inspection; ii) minimum data standards; and (iii) mechanisms to ensure that RMP catch limits are not exceeded.

This year, the Scientific Committee put the finishing touches on the RMP, and forwarded it to the Commission in a form suitable for inclusion in the IWC Schedule. The Scientific Committee unanimously recommended its adoption. It also submitted a list of minimum data standards.

The Scientific Committee also approved a protocol for amendments to the RMP. The protocol requires that any proposed amendments to the RMP be shown to be safe in computer simulation tests before they can be considered by the Commission.

A working group met during the Commission meeting to discuss proposals for an observation and inspection scheme under the RMS. Although there was broad agreement on most aspects of the scheme apart from financing it, the Commission took no action.

The delegation of the USA announced that it was conducting its own, national scientific review of the RMP and that it could therefore not support its adoption at this time, despite the fact that the USA had voted for the 1992 RMS resolution. Norway, the only country to vote against the RMS in 1992, had since changed its position and this year supported the RMS, although the Norwegian whaling commissioner insisted on reserving the right to use a modified version of the RMP.

The initiative was left to Norway and Japan who proposed a resolution calling for continuation of the process of completion of the RMS. The resolution deliberately contained some paragraphs known to be unacceptable to the majority, such as an explicit condonation of Norway's unilateral decision to resume commercial whaling. Russia and Chile called for the resolution to be voted on in parts, so that the acceptable parts relating to the RMS could be adopted without the unacceptable parts. The call for a vote by parts was narrowly rejected by 16 votes to 14, with no abstentions. The resolution of the RMS was then voted on as a whole and rejected by 18 votes to six, with six abstentions.

After the vote, Norway announced that it would resume commercial whaling immediately and issue a domestic quota of 296 Minke Whales *Balaenoptera acutorostrata* for the 1993 season. The figure corresponds to the quota that would result from application of the RMP to the Minke Whale stocks fished by Norwegian whalers.

Specific Catch Limits

As was the case at previous annual meetings since 1986, a proposal by Japan for an interim 'relief' allocation of 50 Minke Whales from the Okhotsk Sea-West Pacific stock of the North Pacific was rejected by 16 votes to 10, with six abstentions. Again, the IWC did not accept any traditional, aboriginal or subsistence exemption for the coastal whalers who would engage in this fishery.

The sticking point appeared to be not that IWC members regarded a coastal take of 50 Minke Whales to be unjustified, but that it could only be permitted by amending the commercial whaling moratorium, which most members were reluctant to do at this time. The Korean delegation noted that if Japanese fishermen were granted an exemption, it would be difficult for them to deny a similar concession to their own fishermen. The delegation felt that the speedy implementation of the RMP in the region would be the best way of resolving the dispute.

As a face-saving measure, a resolution on Japanese community-based Minke whaling, which resolves to work "expeditiously to alleviate the distress" to coastal communities resulting from the whaling moratorium, was adopted by consensus.

Scientific Whaling

Japan and Norway announced their intentions to continue issuing "special permits" for 'scientific' whaling in the Southern Hemisphere and in the North Atlantic. Japan's scientific whaling programme aims at a total catch of about 300 Minke Whales during the 1993/94 season, whereas Norway intends to take 136 Minke Whales for scientific purposes in the 1993 season. The latter were to be taken from Norway's domestic quota of 296 Minke Whales, leaving 160 whales for exclusively commercial use.

As in previous years, two resolutions were introduced calling on Japan and Norway to reconsider their proposed scientific research catches. The resolutions were adopted by 14 votes to eight, with nine abstentions, and 14 votes to seven, with 10 abstentions, respectively.

A resolution introduced by Japan and Norway, which encouraged Japan to continue scientific catches in the Antarctic and in other areas was rejected by 12 votes to 10, with nine abstentions.

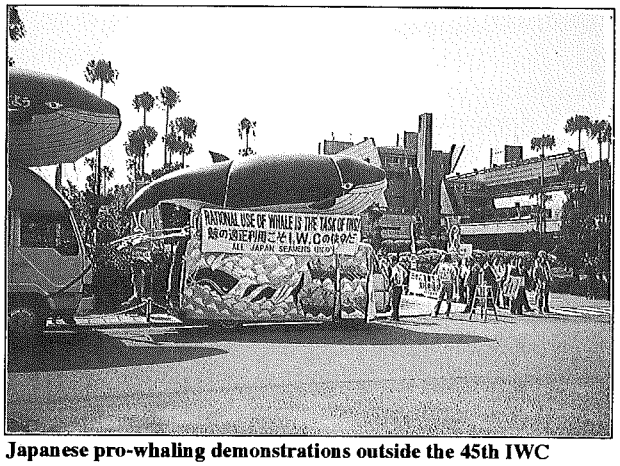
All reported catches under special permit during the 1992 and 1992/93 seasons are listed in Table 1.

Aboriginal Subsistence Whaling

The IWC decided by consensus to renew St. Vincent and The Grenadines' aboriginal subsistence whaling quota for the seasons 1993/94 to 1995/96, during which period the country is allowed to take two Humpback Whales *Megaptera novaeanglia* each season.

While a number of other aboriginal subsistence quotas are still in force from previous years (see Box), the IWC's entire subsistence whaling scheme is up for review at the next annual meeting of the Commission.

All reported aboriginal subsistence catches during the 1992 and 1992/93 seasons are listed in Table 1.



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Japanese pro-whaling demonstrations outside the 45th IWC meeting.

Aboriginal subsistence whaling catch limits:

Humpback Whale *Megaptera novaeanglia* (taken by residents of St Vincent & The Grenadines): the catch limit for the seasons 1993/94 to 1995/96 is two whales.

The following catch limits remain in force from previous years:

Bowhead Whale *Balaena mysticetus* (Bering-Chukchi-Beaufort Seas stock taken by Alaskan Eskimos): the total number of strikes for the years 1992, 1993 and 1994 shall not exceed 141 (with a provision to carry over a maximum of 13 whales, depending on the number of strikes made during the autumn 1991 hunt). In any one year no more than 54 whales shall be struck and no more than 41 shall be landed.

Fin Whale *Balaenoptera physalus* (West Greenland stock taken by Greenlanders): the catch limit for 1993 is 21 whales.

Grey Whale *Eschrichtius robustus* (Eastern North Pacific stock taken by Russian Eskimos): the catch limit for each of the years 1993 and 1994 is 169 whales.

Minke Whale (West Greenland stock taken by Greenlanders): the total number of strikes for the years 1992, 1993 and 1994 shall not exceed 315, with a maximum catch limit of 115 in any one year.

Minke Whale (East Greenland stock taken by Greenlanders): the catch limit for each of the years 1993 and 1994 is 12 whales.

	Fin	Minke	Humpback	Bowhead	Comment
North Atlantic					
Denmark (Greenland)	22[1]	114[2]	1	-	Aboriginal
Norway	-	95[3]	-	-	Special Permit
St. Vincent & The Grenadines	-	-	2[4]	-	Aboriginal
North Pacific					
USA	-	-	-	50[5]	Aboriginal
Antarctic					
Japan	-	330	-	-	Special Permit

Table 1. Catches by IWC Member States in the 1992 and 1992/93 seasons.

[1] including 6 struck but lost
[2] including 7 struck but lost from West Greenland and 3 struck but lost from East Greenland
[3] including 3 lost
[4] including 1 struck but lost
[5] including 12 struck

Source: International Whaling Commission

Small Cetaceans

The working group established at the previous annual meeting of the Commission to consider the legal issues of IWC's competence to manage small cetaceans initially considered a Brazilian proposal that all small cetacean issues be dealt with only to the level of the Technical Committee. This would effectively prevent IWC from taking any legally-binding decisions on such issues, but not prevent analysis and debate on the status and management of small cetacean stocks. However, the proposal was met by general dissatisfaction and, in the end, a rather insignificant resolution was adopted by 23 votes to three, with six abstentions. This resolution calls for a framework to be developed which would allow for small cetacean issues to be addressed by the IWC without prejudice to the views of Member States on the regulatory competence of the Commission.

Despite IWC's ambivalence towards small cetaceans, the majority of Member States continued its policy of 'creeping competence', which has resulted in a number of species-specific resolutions being adopted during the past few years. This year, three resolutions were adopted on different aspects of small cetacean management:

1) by consensus, IWC adopted a resolution on Harbour Porpoise *Phocoena phocoena* in the North Atlantic and the Baltic Sea which recommends that Member States give high priority to reducing by-catches of this species;

2) by 12 votes in favour, seven against and 12 abstentions, IWC adopted a resolution on the directed take of Striped Dolphin *Stenella coeruleoalba*, which invites the Government of Japan to take appropriate action as soon as possible that will allow recovery of the population;

3) by 12 votes in favour, eight against and 11 abstentions, IWC adopted a resolution on Pilot Whales *Globicephala melas*, which expresses concern about the adequacy of the implementation of existing Faroese legislation relevant to this fishery and invites the Danish Government to encourage the Faroese Government to provide information to the IWC on the Pilot Whale hunt.

The figures for catches of small cetaceans for species with landings exceeding 1000 during the period 1989 and 1992 are contained in Table 2.

Southern Ocean Whale Sanctuary

The establishment of a Southern Ocean Whale Sanctuary had been proposed by France at the 44th annual meeting. The Commission was unable to give it much attention at that time, but passed a resolution for it to be examined at the 45th meeting. Since the sanctuary issue is not primarily

		1989	1990	1991	1992
Narwhal	I				
Monodon monoceros	D	942	1200		130
White Whale	I				
Delphinapterus leucas	D	1765/1779	1283/1302	228/238	592
Long-finned Pilot Whale	I			28	21
Globicephala melas	D	1258	916		1572
Pacific White-sided Dolphin	I	6119	4449	14	26
Lagenorhynchus obliquidens	D	3912			136
Bottlenose Dolphin	I	22	33	96	63
Tursiops truncatus	D	401	1363	437	173
Pantropical Spotted Dolphin	I	56016/58270	33851/35920	13991/14560	6512/6680
Stenella attenuata	D	129	11	153	637
Spinner Dolphin	I	23547/24536	12330/13153	8854/9078	4821/5002
Stenella longirostris	D				
Striped Dolphin	I	250	9	311	330
Stenella coerulcoalba	D	1225	749	1022	1122
Common Dolphin	I	14447/15498	5659/6046	3689/4008	4215/4308
Delphinus delphis	D	120	239/240	22	283
Northern Right Whale Dolphin	I	10961	7909	7	16
Lissodelphis borealis	D		11	1	20
Dall's Porpoise	I	331	3108	141	16
Phocoenoides dalli	D	29048	21804	17634	11403

Table 2. Catches of small cetaceans for species with landings exceeding 1000 in one or more years, 1989-1992.
"I" denotes incidental take; "D" denotes directed take. Where two values appear the first is based on reports to IWC, the second is based on IWC reports as well as additional information from non-IWC reports.
Source: International Whaling Commission

a scientific question, but a political question of what the international community wants to do with the Southern Ocean, most of the Scientific Committee's discussions on the matter were tangential.

At the insistence of France, the sanctuary proposal was formally put to a vote in the Technical Committee, where it was approved by 13 votes to eight, with 10 abstentions, despite considerable behind-the-scenes efforts by other countries to dissuade France from calling for the vote. After the vote, Japan announced that it would withdraw from the IWC in the event of the French proposal being adopted in Plenary.

Since it appeared unlikely that the proposal would receive the required three-quarter majority in Plenary, France refrained from calling for a final vote. Instead, a resolution was adopted by 19 votes to eight, with four abstentions, which endorsed the concept of a sanctuary in the Southern Ocean and called for the matter to be examined further at the next meeting and at an intersessional working group meeting to be held in Hobart, Tasmania, in March 1994.

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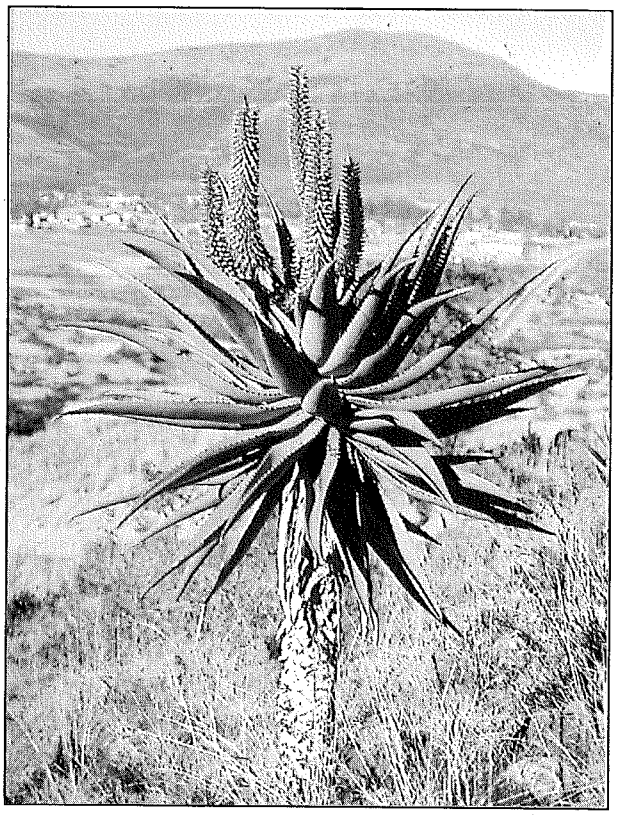

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Aloe ferox

International Trade in Aloes

Sara Oldfield

As well as being popular house plants, species of aloes yield compounds that are used medicinally and in the production of cosmetics. Plants are used locally, where species are native or have been introduced, and there is also a thriving international trade in live plants and extracts. Concern about potential over-exploitation of wild plants led to the listing of the entire genus Aloe *in Appendix II of CITES in 1973, with the exception of five South African species which were listed in Appendix I. Leaves and parts and derivatives of* Aloe vera *have been exempt from CITES controls since 1985.*

A review of significant trade in CITES Appendix II plants for the period 1983 to 1989, inclusive, was carried out by the World Conservation Monitoring Centre in 1991 under contract to the CITES Secretariat. The study provided the opportunity to analyse the trade data for Aloe *spp. and to assess where levels of trade may be having a significant impact on populations in the wild. The results of the review of the trade in aloes form the basis for this article.*

Introduction

The succulent plant genus *Aloe*, in the family Aloeaceae, comprises around 360 species which occur predominantly in southern and east Africa, Arabia and Madagascar. The leaves are arranged in a rosette and are tapered, sometimes with spiny-toothed edges. The flowers are tubular and pendant, in shades of red, orange and yellow. The plants of certain species have been utilised medicinally since historical times, with *Aloe vera* being the most widely used. The leaves of *A. vera* yield two medicinal products - mucilaginous gel and a bitter exudate "bitter aloes", both of which are used to treat burns and a range of other skin ailments, although the latter is used mainly as a laxative. In some countries, purified bitter aloes is used as a bittering agent in certain beverages (D. Newton, *in litt.*, 1993). The principal use of *A. vera* nowadays is the incorporation of the gel into cosmetic products for its moisturizing and soothing properties. A range of other *Aloe* species also yield bitter aloes. The *Aloe* genus is listed in CITES Appendix II, with the exception of five species which are listed in Appendix I.

Methods

The annual reports of CITES Parties were examined for records of trade in *Aloe* species. Review of the data also involved consultation with botanists, the TRAFFIC Network, CITES Management and Scientific Authorities and the trade. A list of suppliers of *Aloe vera* was provided by the Cosmetic, Toiletry and Perfumery Association Ltd (UK) (CTPA). Suppliers based in the UK were contacted for information on the importation and use of aloe parts and derivatives. Statistical information produced by Customs authorities has been consulted for comparison with the CITES data.

The Utilisation of Aloe Species

Aloe vera is the main species of aloe used commercially for medicinal and cosmetic purposes. It has been used for centuries in traditional medicine in China, and is of major importance medicinally in India. In Europe, however, the interest in *A. vera* is essentially confined to its value as a cosmetic (Grindlay and Reynolds, 1986). The mucilaginous gel from the leaves is evaporated and turned into a powder by freeze-drying, or sold as an oily extract for use in cosmetics. The species is believed to be native to the Arabian Peninsula but is not known to occur naturally in its original habitat. It is widely naturalized in southern USA, Central America, the Caribbean, and elsewhere and is cultivated as a commercial crop.

The main species used to produce the drug aloes (often called bitter aloes) is *Aloe ferox*. Other species commercially exploited in the past for their medicinal properties are listed in Table 1; most of these species are not believed to be currently exploited for commercial use: *Aloe maculata*, for example, is not known to be used commercially, *Aloe distans* is not thought to be harvested (van Jaarsveld, *in litt.*, 1992), and the only commercial interest in *Aloe succotrina* has been in the use of the purple-staining leaf sap. *Aloe ferox* is thought to be the only indigenous aloe species harvested in South Africa at present (Botha, *in litt.*, 1992).

Species	Distribution	Status	Commercial Product
Aloe africana	South Africa	nt	Cape Aloes
A. bainesii	Mozambique, Swaziland	R (Swaziland)	Natal Aloes
	South Africa	nt (South Africa)	
A. candelabrum	South Africa	nt	Natal Aloes
A. distans	South Africa	R	Natal Aloes
			Zanzibar Aloes
A. ferox	South Africa	nt	Cape Aloes
A. maculata (=saponaria)	South Africa, Swaziland	?	Natal Aloes
	Lesotho, Zimbabwe		
A. marlothii	South Africa	nt (South Africa)	Natal Aloes
	Botswana		
A. perryi	Socotra	nt	Socotrine Aloes,
A. spectabilis	South Africa	nt	Natal Aloes
A. succotrina	South Africa	nt	Natal Aloes
A. vera	many countries	nt	Curacao Aloes (=Barbados Aloes)

Table 1. Species used as sources of the drug aloes.
? = no information; nt = not threatened; R = rare
Sources: List of species and products from Reynolds, 1985; distribution and conservation status from the World Conservation Monitoring Centre.

Various other species have been subject to scientific investigation for medicinal use, such as the Madagascan *Aloe vahombe*, and certain Kenyan species have been considered on the basis of their habitat and growth pattern to have potential value for cultivation for medicinal use and cosmetics. These are *Aloe classenii*, *Aloe graminicola*, *Aloe macrosiphon*, *Aloe ruspoliana* and *Aloe ukambensis* (Newton, 1987; *in litt.*, 1992), but, of these, only three (*A. macrosiphon*, *A. ruspoliana* and *A. ukambensis*) might possibly produce leaves of an acceptable size under plantation conditions. The three species are of relatively limited distribution and Newton (1987) considers that collection of the plants in quantities necessary for further investigation would harm the wild populations. In Zimbabwe, indigenous aloe species are being investigated for possible commercial use and this, too, may pose a threat to wild populations (Müller, *in litt.*, 1992).

A number of other species are used locally for medicinal purposes. These include *Aloe capitata*, *Aloe divaricata* and *Aloe macroclada*, used medicinally in Madagascar (Jenkins, 1987), and *Aloe aristata*, *Aloe chabaudii*, *Aloe cooperi* and *Aloe linearifolia*, used in South Africa (Cunningham, 1990). One of these - *A. aristata* - has a relatively small population and is considered to be vulnerable to over-exploitation if harvesting for medicinal purposes increases (Cunningham, 1991).

International Trade in Aloe Products

There is a substantial international trade in aloe products. For example, in the USA it was estimated that the value of aloe imports in 1985 was more than US$1 million, domestic production worth more than US$20 million, and sales worth more than US$100 million. Attempts to obtain accurate global figures for the value and volume of the trade, however, were frustrated by variation in published figures, lack of response to enquiries made to companies dealing in aloe products, and the aggregated nature of data for international trade in drug products (Duke, *in litt.*, 1985). Customs statistics rarely distinguish aloe products at the commodity level (and almost never at the species level): usually they are grouped with other plant products. For the present study, published statistics from countries expected to be involved in the export and import of aloe products were reviewed. The only Customs statistics found to mention aloes specifically were Eurostat (statistics for European trade).

EC Countries Importing Aloe Products

The only countries known to be recording imports of aloe products are the European Community Member States. In Eurostat statistics, which use the Harmonized System, tariff heading *1302.19 Vegetable Saps and Extracts* is subdivided and includes tariff heading 1302.19-10 *Saps and Extracts of* Quassia amara, *Aloes and Manna*. Tables 2 and 3 summarize imports into and re-exports within the EC of products in this category, based on Eurostat data.

The statistics for 1987 further separate out *Q. amara*. In that year, the total import of aloes and manna was 431 t

Re-exporting Countries	1988	1989	1990	1991
France	75	78	62	31
Belgium/Luxembourg	0	<1	<1	3
Netherlands	3	4	4	4
Germany	14	13	12	22
Italy	29	33	39	40
UK	4	2	<1	4
Ireland	<1	0	0	2

Table 2. Trade within EC of aloe, manna and *Quassia amara* extracts by quantity (tonnes), 1988-1991.
Source: Eurostat data.

Exporting Country	1988	1989	1990	1991
Spain	5	9	8	1
Sweden	0	5	0	4
Switzerland	<1	9	17	4
Kenya	7	5	8	73
South Africa	216	190	163	165
Namibia	0	0	7	9
USA	136	92	105	105
Canada	0	0	1	0
Mexico	<1	<1	1	<1
Brazil	6	6	11	12
Philippines	10	20	0	0
Australia	1	0	1	0
New Zealand	1	4	1	1

Table 3. Imports by the EC of aloe, manna and *Quassia amara* extracts from exporting countries, by quantity (tonnes), 1988-1991.
Source: Eurostat data.

and the total import of *Q. amara* amounted to three tonnes. It is likely that quantities of *Q. amara* form a similarly small proportion of the figures given in Tables 2 and 3. Extracts of this tree species, used as bitter purgatives, vermifuge and poison in fly-papers, are assumed to be imported to the EC from Brazil, where the species is native. The author believes that manna imports to the EC also represent a relatively small proportion of the quantities shown above but this is in need of verification. Assuming that manna (a sweet plant substance used as a mild laxative) and *Q. amara* imports into the EC are relatively minor, it would appear that an estimated 300 t to 400 t of aloe extracts are imported into the EC annually (Table 3). The approximate annual value of this trade is ECU 2 million (US$2.26M).

Another source of information is the trade: 30 UK suppliers of aloe products were contacted for the present study and 10 responses were received. One company reported importing between 10 t and 15 t a year of *A. vera* products from a manufacturing company in the USA; these ranged from gels of different concentrations, to lipid extracts and freeze-dried/spray-dried powders. Another company reported annual imports of about 20 kg of lipid extracts from France derived from *A. vera* plants grown in the USA. Annual imports of 25 kg of *A. vera* powder from Germany and 50 kg of *A. vera* gel from the USA were reported by a further two companies, respectively. These firms all supply the cosmetics industry. One company supplying pharmaceutical products reported importing 25 kg to 30 kg a year of "Cape Aloes" *A. ferox* from South Africa. There have been a number of recent applications to import aloe extracts from Kenya to the UK (McGough, *in litt.*, 1992).

Limited information is available from the CITES annual reports of importing countries. Imports of aloe parts and derivatives into EC countries, for example, are not generally reported for CITES purposes as they are not deemed to be readily recognizable, and *A. vera* is exempt from CITES requirements.

It is probable that there are sizeable imports of aloe material to Germany, the largest importer of medicinal plants in Europe (Lewington, 1993). Very few CITES-reported aloe imports into Germany have been noted, however. The last recorded import of wild-grown aloe material was 2500 (unit of measure not recorded) of dried leaves of *A. ferox* exported from South Africa in September 1991 (Schippmann, *in litt.*, 1992). A shipment of aloe extract from Kenya, seized in New York in early 1993, is believed to have been processed in Germany, but this information is not confirmed (TRAFFIC USA, *in litt.*, 1993).

Countries Producing and Exporting Aloe Products

The CITES trade statistics for 1983 to 1989, inclusive, record exports of a range of aloe parts and derivatives (Table 4). The main exporting countries of such products are South Africa and the USA. Exports from these two countries are based on one species in each case, *Aloe ferox* and *Aloe vera*, respectively. However, as with imports of aloe products, the exports of such goods recorded in CITES annual reports are only a fraction of the overall international total. For example, the incidence of exportation of aloe extracts from Kenya was noted at the CITES Plants Committee meeting in Malawi (McGough, 1992), and such imports from Kenya are recorded in Eurostat Customs data, yet the only CITES-reported trade in aloe plants or derivatives from Kenya is the importation of 11 plants reported by the USA in 1985. (This transaction was reported to be illegal.) A further two illegal shipments of aloe extracts from Kenya were intercepted at New York in early 1993 and returned to Kenya (see Kenya below).

Taxon	Description	Unit	Annual average
Aloe species	extract	not stated	153
Aloe species	extract	bottle	1
Aloe species	extract	carton	1
Aloe species	extract	case	128
Aloe species	oil	bottle	8
A. arborescens	extract	kg	1 446
A. ferox	extract	not stated	4 285
A. ferox	extract	box	24
A. ferox	extract	can	67
A. ferox	extract	carton	1
A. ferox	extract	kg	1 363 350
A. ferox	leaves	?	23 415
A. ferox	leaves	kg	16 686
A. vera	derivatives	bottle	1 236
A. vera	derivatives	kg	65
A. vera	extract	kg	156
A. vera	extract	not stated	22
A. vera	oil	bottle	33

Table 4. CITES reported trade in aloe parts and derivatives, 1983-1989, inclusive.
Source: Information derived mainly from the annual reports of exporting countries; data do not include trade in seeds, pieces, roots, scraps, flowers, timber or live plants.

Summary of aloe production in three main exporting countries

Kenya

The main aloe species exploited from Kenya is *Aloe secundiflora*, although *Aloe turkanensis* is also thought to be utilised, and several other species of aloe in Kenya are being considered for their potential as sources of medicinal products, as already mentioned. Exploitation is for export; no company is known to use aloe exudate to manufacture aloe products within Kenya (L. Newton, *in litt.*, 1992). In some areas of Kenya harvesting from the wild appears to do little harm to populations since almost all defoliated plants survive. In other areas, it has been reported that wild plants have been completely destroyed by harvesting activity and in the Baringo area, collection of aloe leaf exudate is causing serious damage to wild populations. Local people are paid Ksh.20 (US$0.25) for 20 litres of leaf extract, which would involve harvesting several hundred plants (L. Newton, *in litt.*, 1992). Concern about over-exploitation of aloes in Kenya led to a Presidential declaration in November 1986 prohibiting the commercial harvesting of leaf exudate from aloe plants in the wild, and calling for the establishment of plantations. Field observation has shown, however, that the law is rarely observed and there is abundant evidence of continuing illegal harvesting. Moreover, a plantation that has been set up in northern Kenya was established by transplanting wild plants, which has harmed wild populations (Newton, 1991).

In November 1992, a shipment from Kenya which contained 1500 kg of aloe extract was refused entry at Hoboken, New Jersey, USA, because it lacked appropriate documentation; a German dealer is facing prosecution (TRAFFIC Europe-Germany, *in litt.*, 1993). In early 1993, a further two shipments from Kenya of aloe extract of Appendix II specimens were intercepted in New York but returned to Kenya, owing to the lack of CITES permits accompanying the shipments; one of the shipments is believed to have been processed in Germany. The quantity of extract contained in the shipments is unconfirmed (TRAFFIC USA, *in litt.*, 1993).

South Africa

All trade in *Aloe ferox* parts and derivatives recorded in the CITES trade statistics for the period 1983 to 1989 is reported to be from South Africa. *Aloe ferox* is probably the most common aloe species in South Africa, occurring from the Cape to southern Natal and is widely cultivated as an ornamental plant. Harvesting of *A. ferox* leaves for exudate collection takes place mainly in the coastal belt of the south and eastern Cape regions (Botha, *in litt.*, 1992) and is predominantly from wild plants, which are the source of over 95% of the total leaf harvest. Although *A. ferox* cannot be considered a threatened species, some concern has been expressed about the effects of the removal of leaves from plants in wild populations. It is thought that the continuous cover of dead leaves surrounding the stem of *A. ferox* has evolved in response to fire and thus harvesting the leaves could cause heavy mortality in populations exposed to fire (Bond, 1983). This threat is more significant in grassveld and sclerophyll regions where fire is a regular occurrence (van Jaarsveld, *in litt.*, 1992).

The traditional method of extraction of *A. ferox* exudate in South Africa is described by Reynolds (1970): a skin is spread over a hollow in the ground onto which the leaves are stacked in a circular manner, with the cut basal ends facing inwards. The juice secreted from the ends is collected in the skin, boiled and then cooled. It is ready for sale when dry and hard and is then known as bitter aloes. Bitter aloes is also produced by a process of spray-drying (D. Newton, *in litt.*, 1993). Commercially-produced bitter aloes is almost exclusively for export, although it is used both by locals and, increasingly, by immigrant populations as a medicine; a small proportion is also used in veterinary practice (Botha, *in litt.*, 1992). For the years 1989 to 1991 there was a shortage of bitter aloes for export, as a result of decreased harvesting. This was caused by severe drought and widespread attack by leafmining larvae of a species of blackfly. However, recent rains have brought about a remarkable recovery and strong overseas demand was met in 1992 (Botha, *in litt.*, 1992). Harvesting of *A. ferox* increased enormously in response to the opening of export markets in Europe and North America in the early 1980s, with up to 600 t of the dried sap exported annually (Bond, 1983). Other *A. ferox* exports include leaves and stems, but also flowers, timber and live plants. Germany is reported to re-export dried plants of *A. ferox* originating in South Africa, and France re-exports South African *A. ferox* extract to Japan.

Notwithstanding widespread collection from the wild, *A. ferox* is a plant which propagates with ease and reaches maturity (flowering stage) within four to six years. Recently, *A. ferox* has been planted as a crop in the Albertinia district of the southern Cape and a factory established there for production of extracts (van Jaarsveld, *in litt.*, 1992). This factory produces about 50 kg of aloe gel powder annually, for which the export market is being expanded (Botha, *in litt.*, 1992).

At present, detailed Customs statistics are not collected for *A. ferox*. The South African Commissioner of Customs and Excise lists aloe products under the general tariff heading *Other Vegetable*. It has been suggested by Botha (*in litt.*, 1992) that a separate tariff listing for aloe products be instituted.

USA

The major exporter of *Aloe vera* extracts is the USA. Although leaves and parts and derivatives of naturalized and artificially propagated *A. vera* specimens are exempt from CITES controls (and naturally wild populations of *A. vera* are not known to occur), the USA has reported exports of *A. vera* extracts in CITES annual reports during the period 1983 to 1989. The extracts derive from cultivated plants. About 95% of land used for *A. vera* crops in the USA is located in Texas (Hoffmann, 1989),

the species otherwise being grown in Florida and Arizona. Mild weather conditions are needed, since *A. vera* is susceptible to frost; in December 1989, the Texas crop was entirely destroyed by frost and growers sought alternative supplies from the Caribbean and South Pacific to fill their orders (Landes and Blumenthal, 1990).

Large-scale cultivation in the USA rose from 240 ha in 1979 to 1600 ha in 1982. The plant is grown by farmers contracted to processors or on farms owned by the processing companies themselves. One company, Terry Corp (N.D.), reportedly grows around 800 ha of *A. vera*, claiming to have the largest reserve of aloe leaves of any supplier in the world (Grindlay and Reynolds, 1986); it is not known whether this company grows other aloe species.

Approximately 20 to 30 companies in the USA specialize in *A. vera* products (Duke, *in litt.*, 1985). Some of these companies act as primary growers and processors of the plant and many more are secondary producers. *Aloe vera* "juice" is widely available in the USA, where it is used as a tonic and is claimed to cure a variety of illnesses. *Aloe vera* extract is exported in bulk in various forms (gels of different concentration, lipid extracts and freeze dried/spray dried powders) from the USA to European cosmetic companies and chain stores for incorporation into their cosmetic products (Grindlay and Reynolds, 1986). There is a growing interest in aloe cosmetics in some Asian countries, too (Landes and Blumenthal, 1990). The list of suppliers of *A. vera* provided by the CTPA for the present study identifies nine companies within the USA which supply *A. vera* products, 25 in the UK, three in France, three in Japan, two in Germany, and one each in Australia, Mexico and the Netherlands. Germany and the UK are known to import *A. vera* products from the USA.

Apart from *A. vera*, the main aloe species exported by the USA is *Aloe arborescens*; although the species is native to southern Africa (where it is widespread and is probably the most common aloe grown in gardens in South Africa), it is not currently harvested in that country (van Jaarsveld, *in litt.*, 1992). In 1985, the USA exported 10 120 kg of *A. arborescens* extract to Japan. The plant is used medicinally, for example for treating burns, as with other aloe species.

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Aloe arborescens

Other countries

It is not certain to what extent *Aloe vera* is grown commercially in countries other than the USA. Mexico, Venezuela and the Netherlands Antilles are known to harvest cultivated and naturalized populations of *A. vera* (Grindlay and Reynolds, 1986; Duke, *in litt.*, 1992) and the species has been promoted as a crop in Australia (Callister, *in litt.*, 1992). *Aloe vera* plantations have recently been established in Natal and as far north as Northern Transvaal, in South Africa (Botha, *in litt.*, 1992). In Zimbabwe there is considerable interest in developing commercial production of *A. vera* (Müller, *in litt.*, 1992), and the countries listed in the following section as exporters of live *A. vera* plants are presumably harvesting either cultivated or naturalized plants.

Aloe arborescens has apparently been grown in Russia and Brazil as a source of aloin (the bitter crystalline compound in aloe leaf exudate, used as a laxative), although it yields less of this substance than does *A. vera* (Morton, 1977).

International Trade in Live Aloe Plants

International trade in live aloe plants is dominated by *Aloe vera*. According to CITES data, the annual average number of live *A. vera* plants in international trade for the period 1983 to 1989 inclusive is 184 000. As with extracts from the species, the major country of export of live plants is the USA, with an annual average for this period of around 96 000 exports. Other significant exporters of live *A. vera* are the Dominican Republic and Canada. According to CITES statistics, countries which have exported small quantities of *A. vera* plants are: Australia, Belize, Bermuda, Germany, Honduras, India, Jamaica, Mexico, Netherlands Antilles, Somalia, Thailand and UK. Trade in live plants of this species generally has no conservation significance: the species is either naturalized or cultivated in all the countries listed above. Of the above-listed countries, only Somalia has any native aloe species: it is unlikely that *A. vera* is grown commercially there (Holmes, *in litt.*, 1992) and it is possible that other aloe species are being exported as *A. vera* from this country.

Live plants of species of aloes other than *A. vera* that are traded annually in quantities over 100 specimens are shown in Table 5.

Many species besides *A. vera* are widely cultivated for commercial trade in live plants, including some of the species listed in Table 5. It has been reported, for example, that all live *A. ferox*, *A. humilis* and *A. variegata* in European trade are from artificially propagated stock and the export of artificially propagated live plants of *A. ferox* is recorded from Brazil and the USA. *Aloe brevifolia*, *A. humilis* and *A. variegata* are all propagated commercially in South Africa for horticultural purposes (van Jaarsveld, *in litt.*, 1992). Wild-collected *A. dichotoma* specimens, however, have recently been seen on sale in Italy and large *A. marlothii* plants, thought to be wild-collected, are offered by one Dutch nursery (Jenkins, 1992). The level of trade in *A. distans* appears to be high for a species which is rare in the wild, but all CITES-listed trade in this species is reportedly in artificially propagated plants. In 1986 the USA exported 3980 artificially propagated plants of *A. distans* of which 1980 were exported to Japan, and in 1988 it exported a further 2035 artificially propagated plants of this species to Japan. Trade in *Aloe erinacea* would also appear to be high considering that this species is confined to the Richtersveld region of South Africa and to southern Namibia. Again, all the plants in trade are reported in CITES data to be artificially propagated, and mostly exported from South Africa, though some come from the USA, where the species is cultivated in large quantities (Supthut, *in litt.*, 1992); this data is based on imports recorded by importing countries as no exports of *A. erinacea* are recorded by the USA in CITES statistics.

In addition to the species listed in Table 5, trade in small quantities of live plants of over 180 other species of aloes is recorded in the CITES statistics for the period 1983 to 1989. Some of these species are rare or threatened in the wild, but in many cases the plants in trade are reported to be artificially propagated (often in the USA), and the trade as reflected by CITES statistics does not generally appear to be a cause for concern (Table 6). The significant international trade in aloe plants reported only at generic level, however, may conceal a worrying degree of trade in rare plants. The annual average number of live plants reported in trade at generic level during the period 1983 to 1989 is 64 242. A wide range of countries report the trade of aloe species in this way, including Brazil, Canada, Dominican Republic, France, Japan, Madagascar, the Netherlands and Taiwan, which have all recorded exports of individual transactions exceeding 1000 specimens of "*Aloe* species". Again, these transactions are reported to be composed of artificially propagated plants, but the large volumes of unnamed species exported from Madagascar, categorized only by genus, have been an especial cause for concern. In its CITES annual report for 1984, Madagascar reported the export of 10 000 live plants of aloe species to Germany; the same quantity was reported in 1985. A significant number of the succulents exported from Madagascar are wild-collected and trade at these levels is therefore likely to have had a notable impact on wild populations. Madagascar has over 60 taxa of aloe and the conservation status of many of these remains unclear. The following small species, however, are known to have become endangered as a result of damage by fire and collection for trade on the island: *Aloe albiflora*, *Aloe bakeri*, *Aloe bellatula*, *Aloe calcairophila*, *Aloe compressa* var. *chistophila*, *Aloe compressa* var. *rugo-squamosa*, *Aloe descoingsii*, *Aloe haworthioides*, *Aloe millotii*, *Aloe parallelifolia*, *Aloe parvula*, *Aloe perrieri*, *Aloe rauhii*, *Aloe versicolor*, and the tree species *Aloe helenae* and *Aloe suzannae* (Supthut, *in litt.*, 1989). All these species, with the exception of *A. helenae* and *A. versicolor*, are reported in the CITES statistics for 1983 to 1989, at species level. Although the genus *Aloe* is not currently fashionable with collectors in Europe, there is a demand for the rarer Madagascan and South African species, particularly dwarf ones (Jenkins, 1992; L. Newton, *in litt.*, 1992).

Species	Average no. in annual trade	Exporting countries	Distribution & Conservation
Aloe ferox	12585	S.Africa	S.Africa(nt)
A. arborescens	5204	USA, S.Africa,Bermuda	Malawi(nt), Mozambique(?), Zimbabwe(nt), Swaziland(?), S.Africa(nt)
A. variegata	1782	S.Africa, Cyprus, Germany, USA, Japan,Dominican Republic, UK	Namibia(R[1]), S. Africa(nt)
A. mitriformis	1372	S.Africa, USA	S.Africa(nt)
A. distans	862	S.Africa, USA	S.Africa(R[1])
A. erinacea	463	S.Africa, USA	S.Africa(very rare)[1]; Namibia(R[2])
A. marlothii	432	France, USA, S.Africa, Netherlands	S.Africa(nt); Botswana(presumed common)[1]
A. dichotoma	384	USA, S.Africa Germany	S.Africa(nt); Namibia(nt)[3]
A. brevifolia	191	S.Africa, USA, UK	S.Africa(R[1])
A. humilis	173	Netherlands, USA, S. Africa	S.Africa(nt)

Table 5. Live plants of aloe species in annual trade in quantities exceeding 100 specimens (excluding *A. vera*), 1983-1989, inclusive.
nt = not threatened; R = rare
Sources: Conservation status is from WCMC, except where indicated. [1]information provided by van Jaarsveld, in litt., *1992; [2]information provided by Newton,* in litt., *1992. [3]information provided by Supthut,* in litt., *1992; trade data compiled from CITES statistics.*

Aloe species	Category	Distribution	No. in Trade	Art.Prop.
A. albiflora	E[1]	MG	30	yes
A. angelica	R	Transvaal	4	yes
A. antandroi	Rare[2]	MG	8	some (1)
A. archeri	V	KE	2	yes
A. arenicola	Rare[2]	NA	17	yes
A. asperifolia	Rare[2]	NA	3	yes
A. bakeri	E[1]	MG	30	some
A. ballii	V	ZW	13	yes
A. bellatula	E[1]	MG	63	some
A. betsiliensis	Rare[2]	MG	38	some (30)
A. bowiea	?	ZA	41	some
A. brachystachys	?	Zanzibar	1	yes
A. branddaaiensis	?	ZA	6	yes
A. brevifolia	?	ZA	1336	yes
A. buhrii	R	ZA	9	some (6)
A. bulbillifera	Rare[2]	MG	83	some (30)
A. calcairophila	V[1]	MG	240	some
A. ciliaris	?	ZA	33	yes
A. compressa	R[1]	MG	122	some (30[3])
A. congolensis	?	ZR	10	yes
A. conifera	R	MG	136	some
A. cremnophila	R	SO	22	some
A. decaryi	Rare[2]	MG	5	yes
A. defalcata	?	SO	16	yes
A. descoingsii	R[1]	MG	95	some
A. dinteri	Rare[2]	NA	73	some
A. distans	R	Cape Pr.	6035	yes
A. doei	Rare[2]	YD[1]	22	yes
A. dominella	I	ZA	27	yes
A. dorotheae	R	TZ	19	yes
A. dumetorum	R[1]	KE	11	some (10)
A. erinacea		ZA,NA	3241	yes
A. esculenta	?	S'thern Af.	15	yes
A. forbesii	R	Socotra	2	yes
A. harlana	V	ET	6	yes
A. haworthioides	R[1]	MG	355	some (353)
A. heliderana	V	SO	18	no
A. hlangapies	?	SZ(R)ZA(?)	29	yes
A. humbertii	?	MG	1	no
A. ibitiensis	Rare[2]	MG	25	some (22)
A. inermis	V	SO	19	no
A. isaloensis	Rare[2]	MG	1	no
A. itremensis	Rare[2]	MG	5	no
A. jacksonii	I	ET	47	yes
A. jucunda	E	SO	46	some
A. juvenna	E	KE	23	some
A. karasbergensis	V	NA,ZA	110	yes
A. kilifiensis	E	KE	19	yes
A. krausii	V	ZA	56	some (6)
A. longibracteata	?	ZA	4	yes
A. macroclada	Rare[2]	MG	41	some
A. mcloughlinii	R	ET	29	some
A. millotii	E[1]	MG	34	some
A. milne-redheadii	?	AO,ZM	10	yes
A. musapana	V/R	ZW	4	some (1)
A. namibiensis	Rare[2]	NA	25	yes
A. nubigena	?	ZA	2	no
A. ortholopha	V/R	ZW	10	some
A. pachygaster	Rare[2]	NA	139	yes
A. parallelifolia	E[1]	MG	43	some
A. parvula	Rare[2]	MG	38	some
A. peglerae	R	ZA	27	some
A. perrieri	E[1]	MG	1	no
A. pirottae	V	ET,KE,SO	12	no
A. prinslooi	?	ZA	4	yes
A. pubescens	R	ET	4	yes
A. rauhii	Rare[2]	MG	76	some (73)
A. reynoldsii	V	Transkei	82	yes
A. saponaria	?	S'thern Af.	6	yes
A. saundersiae	?	ZA	7	yes
A. scobinifolia	V	SO	10	no
A. simii	?	ZA	18	some
A. sinkatana	?	SD	26	some
A. somaliensis	V	SO	37	some
A. splendens	?	YD	2	yes
A. squarrosa	E	Socotra	204	some (175)
A. suffulta	?	MZ(?) ZW(V/R) Natal(R)	1	yes
A. suzannae	E	MG	60	some
A. tauri	V/R	ZW	3	yes
A. trachyticola	Rare[2]	MG	57	some
A. vallaris	?	AO	1	no
A. vandermerwei	R	Transvaal	4	yes
A. viguieri	R	MG	10	no
A. viridiflora	Rare[2]	NA	9	yes
A. woolliana	Rare[2]	ZA,SZ	2	yes

Table 6. Live plants of rare and threatened aloe species, and those of unknown conservation status, recorded in CITES annual reports, 1983-1989, inclusive.

Country Codes

AO = Angola
ET = Ethiopia
KE = Kenya
MG = Madagascar
MZ = Mozambique
NA = Namibia
SD = Sudan
SO = Somalia
SZ = Swaziland
TZ = Tanzania
YD = S. Yemen
ZA = South Africa
ZM = Zambia
ZR = Zaire
ZW = Zimbabwe

Notes and sources: Species have been included if they have an IUCN threatened category (R = rare; V = vulnerable; E = endangered; I = indeterminate) or if they have a conservation category unknown (?), as recorded in the WCMC species database; [1]species is considered to be endangered according to Supthut, in litt., *1989; [2]information provided by Supthut,* in litt., *1992; [3]number recorded as artificially propagated in 1983; varieties or subspecies may be recorded as threatened in the WCMC database but these cannot be matched with the trade data, as trade data is only given for species; Appendix I species are not included, although artificially propagated plants of these species are recorded with Appendix II species; bracketed figures in column 5 indicate numbers recorded as artificially propagated and are included in total figure in column 4: in cases where there are discrepancies in the recording and figures do not appear to add up, data are not given.*

Concern about the number of Madagascan wild succulent plants being imported into Europe as artificially propagated plants led to the imposition in April 1987 of an EC ban on so-called artificially propagated plant imports from Madagascar. It has also been recommended by the IUCN/SSC Cactus and Succulent Specialist Group that a CITES Appendix I-listing be considered for those Madagascan species of aloe which are threatened by international trade.

Discussion

Out of the wide range of aloe species, only a small number are of importance in international trade, with *A. vera* and *A. ferox* being the dominant species. Present investigations suggest that it is unlikely that other aloe species will become as important in international trade. There have been suggestions from various experts, however, that extracts from other species may currently be substituted for these two species in trade consignments because they are more popular commercially.

The only large-scale trade in parts and derivatives from wild populations reported to the CITES Secretariat is the trade in *Aloe ferox* from South Africa. International trade in *A. ferox* is large but currently does not appear to have a detrimental impact on this widespread species. CITES listing in this case is likely to have benefits for long-term management of the species. Better reporting by importing countries would be helpful in this process.

No other CITES Party with native species of aloe plants currently records its trade in aloe parts and derivatives, but, as previously stated, such exports are known to occur from Kenya. The Management Authority of Kenya has recently appealed to Parties for co-operation in regulating illegal aloe exports by ensuring that any exports of aloe parts and derivatives originating in Kenya are accompanied by the appropriate CITES documentation which has been verified by that Authority or by the CITES Secretariat for authentication (Anon., 1993) (see page 5). Information on the species and quantities exported from Kenya would be beneficial, as would corresponding information from the importing countries, especially since Kenya is the one country where extraction of aloe derivatives for commercial purposes has been identified as being of conservation concern. Further field investigation of the trade should be conducted in Kenya and enquiries made in other countries where field collection may take place.

The data on levels of trade in live plants recorded in CITES statistics for the period 1983 to 1989 show that the most heavily traded species are generally "not threatened" in the wild and are commonly artificially propagated. Relatively small-scale trade in rarer species may however be a cause for concern. Collector demand is thought to focus on South African and Madagascan rarities; a number of Madagascan species are strong candidates for Appendix I listing. Reporting of trade in live aloe plants at generic level prevents a thorough analysis of this trade and its likely impact on wild populations. It is particularly important that countries with indigenous species should undertake to record CITES exports of aloe plants at species level.

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ITTA In Jeopardy

The second of two formal renegotiation conferences to address the future of the International Tropical Timber Agreement (ITTA) (see *TRAFFIC Bulletin* 13(3):107) has recently been held in Geneva (21-25 June 1993), with unproductive results. The current Agreement, signed in 1983, lapses automatically in March 1994 and tropical and temperate timber-growing countries have reached an impasse over the terms of a successor Agreement. The question of extending the convention to include temperate as well as tropical timbers is a major obstacle to consensus, since temperate timber-producing countries are so far unwilling to be bound by the same conditions as tropical timber-producing countries. Tropical member countries of ITTA have indicated that they will withdraw their intentions to manage their forests sustainably by 2000 unless their temperate counterparts pledge to do likewise. Temperate member countries argue that they already manage their timber resources on a sustainable basis, or have already promised to do so (the USA has undertaken to achieve this goal by the year 2000).

New Scientist, 3 July 1993

Database Threatened

At a meeting in Cambridge, UK, of members of the International Timber Trade Organisation (ITTO) in March 1993, countries with some of the largest areas of tropical rainforest refused support for an international research project aimed at limiting trade in endangered species of tropical trees. The British Government and the Dutch Government (which is committed to using only sustainable sources of timber after 1995) have offered to finance the necessary research with a grant of US$800 000, to be used to create a repository of information on endangered tropical trees, to draw up plans to monitor their trade, and to advise ITTO on the development of international trade controls.

The World Conservation Monitoring Centre has already carried out a pilot phase of the project and presented its findings to the ITTO meeting, namely that 1868 tropical tree species are traded, of which 304 are "considered to be threatened at a global level". Tropical timber-producing countries (with the exception of Malaysia), did not offer data for the pilot study, yet criticized it for using inaccurate and incomplete data. An ITTO report of the meeting concluded that a global database under its auspices was premature, but supported the development of national databases, owned by the country concerned.

ITTO's refusal to condone the proposed research challenges the view held by many Western governments that, although principally a trade organization, ITTO could act as an effective tool for conservation. Ian Symons, a spokesman for the Overseas Development Administration of the UK, said that the Government may now decide to fund such research outside the auspices of the ITTO forum.

New Scientist, 3 April 1993

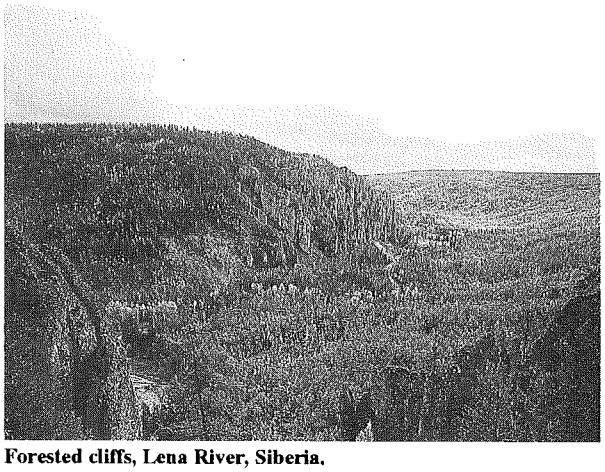
Save the *Taiga*

A team of Western scientists specializing in forestry will visit Siberia this summer as part of a Siberian Forest Protection Project, to identify sites for sustainable forestry initiatives as interest from foreign logging companies in the forested *taiga* of Siberia is growing. Improved transport facilities and the Russians' desire to strengthen their economy have contributed to more favourable conditions for foreign exploitation in the region. Large areas have become accessible since the recent opening of the second trans-Siberian railway, the Baikal-Amur line, and a project to develop a £30bn (US$45bn) industrial and trading zone straddling the Chinese-Russian border will facilitate trade of the region's timber with neighbouring consumer countries, Japan and Korea. The largest trader in Asian tropical timber, *Citoh*, is now logging the larch *Larix* and spruce *Picea* of Khabarovsk, just north of the border with China, while the South Korean company, *Hyundai*, extracts timber from an area of 1300 sq. km of broadleaf conifer forest in the Sikhote Alin mountains of Primorskiy (close to Japan and bordering both China and Korea). Hyundai plans to increase its area of forest, to clear 4000 sq. km annually. The American company, Weyerhauser, has plans to log forests around the River Botcha.

The Earth Summit in Rio in 1992 recognized that protection of the great forests of the North should not be overlooked while conservationists' attention is focused on the depletion of tropical forests. It has been discovered by the International Institute for Applied Systems Analysis (IIASA), that the number of trees within Siberia decreased between 1966 and 1988 by a greater amount (approximately 20%) than was previously estimated. Natural reaforestation is slow in Siberia and replanting uncommon and not carried out systematically, only 2000 sq. km having been replanted in 1988, according to IIASA, and only half of those trees planted surviving.

The scientists researching sustainable forestry initiatives in Siberia this summer will study the lower Bikin valley in Primorskiy, where *Hyundai* wishes to clear-fell further areas of forest, and will visit Krasnoyarsk in central Siberia, the focus of the old state forestry.

The Independent on Sunday (UK), 28 March 1993



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Forested cliffs, Lena River, Siberia.

FLORA FILE

Year of the Indigenous Peoples

1993 has been designated Year of the Indigenous Peoples by the United Nations, lending weight to the cause of the International Alliance of the Indigenous-Tribal Peoples of the Tropical Forests. The Alliance was formed in February 1992, in Penang, Malaysia, when representatives of forest-dwelling communities from the Americas, Asia and Africa united to protect their territories from incursion by logging companies. In a declaration made in Brussels to the European Commission in March 1993, the Alliance's demands included recognition of the 109 articles of their charter and "moratoria on the import of timber and timber products from all indigenous peoples' areas, to start with from Sarawak, Amazonia, Argentina, Equatorial Africa, West Papua and Maluku (Indonesia)."

International Alliance of the Indigenous-Tribal Peoples of the Tropical Forests in litt. *to the Council of Ministers of Foreign Affairs, Development Cooperation and the Environment and the Commission of the European Communities, 23 March 1993*

Indigenous Leader Assassinated By Logger

Domingos Gaviao, leader of a group of Gaviao Indians, living in the Governador Indigenous Reserve in the Brazilian state of Mato Grosso, was shot dead in December 1992 by a truck driver transporting illegally logged lumber through the Reserve. The wood had been cut from territory belonging to the Guajajara Indians, although it is against Brazilian law to extract timber from indigenous territories.

Rainforest Foundation, 15, 1992, In: Environmental News Digest, 11(1), 1993

Western Cold Cures Lack *Mamiang*

The people of Siberut, the largest island of the Mentawai Archipelago situated approximately 100 km off Sumatra's west coast, use hundreds of species of plants, whose curative effects they attribute to certain properties such as smell, taste and colour. For example, four kinds of smell are distinguished: *masingin* (aromatic); *mabute* (foetid); *mamiang* (fish-like smell); and *makasak* (the smell, for instance, of leaves of *Piper betle*). *Mamiang* plants are associated with a cool character, which in turn is related to "being healthy", and are indicated for the treatment of headaches, coughs and influenza, while *makasak* plants are used for contusions, sprains and fractures. Five kinds of taste (hot, bitter, sweet, sour and astringent) are identified. Traditional medicines in Siberut can be made from mixtures of anything from two to seventy plants, and all parts of a given plant are often believed to contain curative properties.

Medicinal Plant of Siberut by Wanda Ave and Satyawan Sumito, WWF Indonesia Project Report 7(3), 1991

Renewed Interest in Australian Shrub

In 1981, specimens of plants from the genus *Conospermum* were collected from Australia and sent for screening to the National Cancer Institute (NCI) in Bethesda, Maryland, by a botanist from the Department of Agriculture of the USA. At the time, the extracts showed no particular activity against tumours and the compounds were shelved. In the late 1980s, while screening natural products for activity against HIV, the samples of *Conospermum* were re-examined and an anti-viral compound capable of inhibiting the reproduction of HIV was isolated. Although chemists have successfully synthesized the compound (which it has named conocurvone) from precursors found in the plant, the process of synthesis is expensive and a spokesman for the NCI believes that the "most desirable and most efficient" way to obtain conocurvone is direct from the plant. *Conospermum* is common in Western Australia, but access to it has not yet been granted to collectors from the USA. The NCI has a standard agreement offered to countries from which it wants to gather plants, which Australia has refused to sign without guarantees that the agreement specify protection for the plant in the wild, that Australian scientists be involved in any linked research and development, and that Australia receives an equitable share of any commercial benefits which accrue. The terms of reference proposed to the NCI by Australia may serve as a model both for future agreements to collect other native Australian plants, as well as for less developed countries who have plants of interest to foreign research institutes.

Of more than 5000 plant species screened in vitro by NCI for their potential as leads to anti-AIDS agents, *Conospermum* is the source of the fourth plant-derived agent now in preclinical development for study of its potential against HIV.

New Scientist, 3 July 1993; BioScience, 42(6), June 1992; Dr J.A. Armstrong, Department of Conservation and Land Management, Western Australia, in litt., *16 August 1993; Dr D.J. Newman, National Cancer Institute,* in litt., *17 August 1993*

Mangosteen Tree Used in Research on HIV

Calophyllum lanigerum, a member of the Mangosteen family Guttiferae, produces a substance which may be used in the treatment of AIDS. The chemical derived from the tree is known as Calinolide and researchers have managed to synthesize the formula, which may mean that collection from the tree may not be necessary in the future: when researchers from the USA revisited one swamp in Sarawak in 1991, where previously they had found the tree growing, the species was no longer in evidence.

TFF News, March 1993, BBC Wildlife, July 1993

Moringa Tree Studies Bear Fruit

Like many other plants now studied by Western pharmacologists, the tree *Moringa oleifera* has a long history of use in traditional medicine practice. Now, investigators at the University of San Carlos in Guatemala have found that the plant's seeds show some anti-spasmodic effect, reducing spasms of the duodenum by up to 67% in trials. Both seeds and roots were impressive in treating inflammation, strangely a weak (rather than strong) infusion of the root showing the most effective anti-inflammatory effect. However, only the seed infusion maintained its effect for the full five hours of the tests, and thus, only this preparation may be worthy of further investigation. The plant's seeds also demonstrated diuretic effects, explaining their traditional use in the treatment of oedema.

Scientists from the UK's University of Leicester, working in Malawi, have found that the crushed seeds of *Moringa oleifera* and *M. stenopetala* can purify water and could replace expensive, imported chemical water purifiers for many rural communities in developing countries. The seeds coagulate particles and certain types of bacteriophagic virus suspended in turbid water; the resultant sediment falls to the bottom of containers of water, which can then be decanted. Although further disinfection of water is generally needed before it can be consumed by humans, the seeds can effectively eliminate a significant percentage of bacteria so that slow filtration or chlorination at a treatment site, or household boiling should then render the water safe.

Both *M. oleifera* and *M. stenopetala* are widespread in semi-arid, subtropical countries, are highly resistant to drought, fast-growing and require little tending. One hectare of moringa trees would provide enough seeds to clarify 240 m^3 of water on a daily basis.

Journal of Ethnopharmacology 36:233-237, 1992, In: Herbal Gram 28, 1993; Ceres, The FAO Review, In: Environmental News Digest, 11(1), 1993

Spotted Owl Habitat Protected

Following the temporary decision of the US Government in 1992 to permit timber felling in Oregon on federal land inhabited by the threatened Spotted Owl *Strix occidentalis caurina*, (see *TRAFFIC Bulletin* 13(1):33), President Clinton has now revealed a strategy for managing logging interests in the Pacific Northwest region in the future. While aiming to protect the forest ecosystem, the Government's plan, which emerged after a conference on forest issues in April, also attempts to protect the timber industry from the worst effects of reduced logging of federal forests in the region. Thousands of forest workers have been laid off already, since although logging on federal land in Oregon was formerly approved by the Government's Endangered Species Committee, separate Government decisions ordered the federal Bureau of Land Management not to sell any timber from the area. Now, many more workers are expected to lose jobs - estimates range between 6000 and 85 000 - as the current plan for the region's federal forests requires a reduction in logging to a level set at 25% of that of the late 1980s.

The new plan also makes provision for the creation of buffer zones between felling areas and streams in which salmon spawn, as silt accumulating from de-forested hill slopes has brought about a reduction in fish numbers. Some areas of ancient forest are still open to logging, though less damaging forestry techniques are to be investigated, according to the requirements of the plan. It is proposed that US$1.5 billion be spent over five years for the purpose of retraining foresters whose labour will no longer be needed.

There will be a court hearing of the plan before it passes into law.

New Scientist, 10 July 1993

Proboscis Monkeys and Oil Palms Counterpoised

One particular population of Proboscis Monkeys *Nasalis larvatus*, living by the Kinabatangan River in eastern Sabah, is exceptional in that it is semi-tame, having being studied at close quarters over two years by Ramesh Boonratana, a postgraduate student from Mahidol University, Bangkok. As a result, tourists can get a good view of the monkeys, especially when the animals collect by the river bank to feed on tree leaves and seeds. The area is rich in wildlife generally, "an important scientific site and a good model for ecotourism", in the view of Rob Steubing, director of the Sabah Museum, and has been proposed as a national park.

Conflict over the area has arisen since the issue by the local land authority of a draft permit to oil palm growers to develop plantations where the monkeys are living, and some felling has been discovered to have taken place alongside the river. Prospects for the monkeys are hopeful as the Ministry of Tourism and Environment has challenged the local authority's permit and obtained an order to evict the palm growers and loggers.

New Scientist, 13 March 1993

SEIZURES AND PROSECUTIONS

Assistance in investigations was provided to authorities by TRAFFIC staff in many of the cases reported below which occurred in regions covered by a TRAFFIC office or representative.

EUROPE

BELGIUM

On 2 March 1993, two skins of Brown Bear *Ursus arctos* were seized from a Belgian citizen as he was leaving the harbour of Antwerp by car; 3 deer skins, 2 deer antlers and a fox skin were also found. All items were apperently received from a seaman friend on board a Romanian ship.

TRAFFIC Europe

BULGARIA

In November 1992 and February 1993, Bulgarian military police and Customs officers at Sofia airport confiscated pythons from Bulgarian peacekeeping soldiers returning to the country from Cambodia. Sofia Zoological Gardens is now caring for the 3 Reticulated Pythons *Python reticulata* (App. II) and 6 Burmese Pythons *Python molurus bivittatus* (App II); 1 Leopard *Panthera pardus* (App. I/II) included in one of the shipments later died.

TRAFFIC Europe

There have been a number of confiscations of African Grey Parrots *Psittacus erithacus* (App. II) from one, or possibly more, Nigerian passengers transiting through European airports en route from Lagos to Istanbul, Turkey; in each of the cases reported below (see also under Italy and Netherlands), the passenger is believed to be the same person travelling under false passports but this has not been confirmed (see also *TRAFFIC Bulletin* 13(3):108).

On 9 June 1993, 28 African Greys were found in the luggage of a Nigerian passenger; 13 specimens were dead on arrival. Customs officers did not record the identity of the passenger since he lacked a visa to visit or transit through the country and was consequently sent back to Nigeria.

On 14 June, 33 African Greys were seized from the luggage of a Nigerian passenger; 7 specimens were dead on arrival.

In both cases, the birds had been tightly packed in small wire cages, their beaks taped. All surviving birds were placed in quarantine at Sofia Zoological Gardens. As of 8 July, only 26 specimens remain alive.

TRAFFIC Europe

GERMANY

On 15 February 1993, following three years of enquiries, a nationwide search of parrot collections belonging to breeders and retailers was taken by Customs officers of Mönchen-Gladbach and a total of 458 parrots were seized. The enquiry was prompted by the discovery, in 1989, that a person had illegally imported more than 2000 parrots from the Netherlands over the previous three years using false CITES certificates and sold the specimens to collectors and breeders, a business that had earned him an estimated DM150 000 (US$87 500). Sentencing for these offences has yet to take place; the accused faces imprisonment for between three months and five years.

As a result of the raids, 36 lawsuits have been filed against the parrot owners and it is expected that those shops whose owners were involved will be closed. Amongst the seizures were four App. I species: Hyacinth Macaw *Anodorhynchus hyacinthinus*, Goffin's Cockatoo *Cacactua goffini*, Salmon-crested Cockatoo *C. moluccensis*, Tucuman Amazon *Amazona tucumana*, and the following App. II species: Red-tailed Cockatoo *Calyptorhynchus magnificus*; Red-tailed Black Cockatoo *C. funereus*; Mealy Amazon *Amazona farinosa*; Red-shouldered Macaw *A. nobilis;* Yellow-crowned Amazon *A. ochrocephala*; White-headed Amazon *A. oratrix*; Yellow-collared Macaw *Ara auricollis;* Yellow-billed Lory *Lorius chlorcercus* and African Grey Parrot *Psittacus erithacus erithacus.*

German Customs; German CITES Authorities

ITALY

On 30 June 1993, a Nigerian citizen was stopped as he was transiting through Rome airport, whilst travelling from Lagos to Istanbul. In two bags, and contained in 4 mesh cages, were 40 African Grey Parrots, their beaks bound with tape. The smuggler, whose name was passed to the authorities, reportedly declared to Customs officers that, because controls in Italy were more stringent than before, he would pass through Switzerland on his next trip, where he has never before been stopped. The birds are being cared for at a rescue centre.

TRAFFIC Europe-Italy

NETHERLANDS

On 22 June 1993, Customs officers at Schiphol airport arrested a Nigerian, in transit to Istanbul, who was transporting 33 young African Grey Parrots in his luggage. The birds were contained in small cages, between 5 and 6 to a cage; their beaks had been taped. 4 of the birds were dead on arrival; another specimen was in poor condition. Those that survived are being cared for by Avifauna Bird Park.

TRAFFIC Europe-Netherlands

UK

Customs officers at Dover searching a van that had just arrived from France discovered 700 African parakeets and finches contained in boxes. Two men from Essex, UK, were detained. The estimated value of the birds was £10 000 (US$15 000).

The Independent (UK), 6 May 1993

AFRICA

BOTSWANA

The new *Wildlife Conservation and National Parks Act* was recently enforced for the first time for the killing of a Hartebeest *Alcelaphus* without a licence and during the closed season. The accused was sentenced to a fine of P800 (US$244) and sentenced to one year's suspended imprisonment; the gun used to kill the animal was forfeited.

IUCN Botswana

KENYA

A consignment of 6000 birds arrived in transit at Jomo Kenyatta airport, after being freighted by lorry from Tanzania; more than 3000 specimens had already died. The birds included Red-cheeked Cordonbleu *Uraeginthus bengalus*, Lilac-breasted Roller *Coracias caudata*, Rufus-crowned Roller *Coracias noevia*, Superb Starling *Lamprotornis superbus*, Wattled Starling *Creatophora cinerea*, Purple Glossy-starling *Lamprotornis purpureus*, Golden-breasted Starling *Cosmopsarus regius*, Red-billed Firefinch *Lagonosticta senegala*, Purple Grenadier *Uraeginthus [granatina] ianthinogaster* and Yellow-fronted Canary *Serinus mozambicus.*

The birds were confiscated by the Kenya Society for the Protection of Cruelty to Animals on the grounds of insufficient supporting documentation and because the birds were unfit to continue their journey to Europe.

Daily News (Tanzania), 14 November 1992

NAMIBIA

Wildlife officials in Namibia have noted what appears to be a significant increase in the illegal trade of Temminck's Ground Pangolins *Manis temmincki* (App. I). Four people were arrested in the Windhoek region during the weekend of 13 March in connection with the illegal capture, possession and trade of 7 Temminck's Ground Pangolins. One of the seized animals died and the remaining 6 were released at Waterberg Plateau Park. The 4 people arrested are expected to be tried in September. The arrests follow the conviction of a man earlier in March in connection with the illegal possession of 4 Temminck's Ground Pangolins. The individual was fined R200 (US$60) by an Okakarara magistrate.

On 19 July, the South African police and Cape Nature Conservation officials arrested a man in Walvis Bay found to be in possession of 3 live *Manis temmincki*, as well as two and half skins and 248 scales of the same species. Cape Nature Conservation intends to file charges: South Africa shares jurisdiction of this area with Namibia. Of the live pangolins, 2 died and 2 were released.

Cape Nature Conservation; Namibian Ministry of Wildlife, Conservation and Tourism; Namibian Ministry of Wildlife, Conservation and Tourism Press Release, 16 March 1993

SOUTH AFRICA

Individuals convicted of illegal possession of rhino horn (App. I) in Natal face prison sentences of up to 10 years and/or fines of up to R100 000 (US$30 000).

On 5 December 1992, Natal Parks Board staff arrested two South African men in Empangeni, charging them with the illegal sale and possession of rhino horn and elephant ivory (App. I). A rhino horn weighing 4.8 kg, a rhino horn piece weighing 1.5 kg, and a small amount (0.4 kg) of ivory were confiscated from the two men, who were subsequently released on their own recognizance. The two await trial.

A Mozambican citizen was arrested in January 1993 following a joint operation by the South African police's Endangered Species Protection Unit and Kruger Park game rangers. Two elephant tusks, two AK47s and a Mushe Nagant rifle were confiscated from the defendant, who confessed to police that he was a logistics officer with Renamo, a rebel group in Mozambique. The confession fuels speculation that Renamo has been involved in the illegal ivory trade. The trial is still awaited.

During the weekend of 22 January 1993, police officers at Richards Bay recovered 2 rhino horns and an elephant tusk in a single seizure. One of the horns weighed 9 kg, and is believed to be the largest rhino horn ever recovered in Natal Province. Acting on information received, Captain Japie van Niekerk and Warrant Officer Stan Turketti visited a quayside building where they discovered the goods. Three Richards Bay residents were arrested and charged with dealing in ivory and rhino horns. Their case is pending.

In February 1993, two alleged rhino poachers were arrested and an AK47 and a Mushe Nagant rifle confiscated near Natal's border with Mozambique. The arrests, carried out by Jozini detectives and Natal Parks Board investigation teams, followed the 1992 shooting and removal of the horn from a White Rhino *Ceratotherium simum* in Mkuze Game Reserve. The men were arrested after allegedly entering Mkuze the weekend of 5 February, apparently in search of more rhinos. They await trial.

In March 1993, members of the Endangered Species Protection Unit of the South African police seized 60 kg of worked ivory, including ivory blocks, from a house shared by 19 Taiwanese citizens in Kempton Park, Johannesburg. The seizure followed a tip-off from an international courier company. The company became suspicious when asked to deliver a small, heavy parcel, purported to contain R17- (US$5) worth of gemstones, to Singapore - a service costing R800. Two Taiwanese were arrested and are expected to appear before the Johannesburg Magistrates' Court in August. If convicted, they face fines of up to R100 000 plus up to three times the value of the ivory, and/or five years in gaol.

The owner of the property on which an ivory carving factory is located denied knowing the two under arrest, although he later organized bail of R5000 for each of the accused.

On 2 June 1993, at Pretoria District Court, Daniel Jan Oosthuizen of Pretoria was found guilty on charges relating to the illegal possession of elephant tusks. He was sentenced to six months in gaol or a fine of R6000 (US$1800) of which R3000 was suspended for one year.

On 24 June 1993, at Kokstad Magistrates' Court, Mr S. Qunta was sentenced to a fine of R10 000 (US$3000) or five years in prison for the illegal possession of a rhino horn weighing 7.6 kg and two elephant ivory tusks.

On 6 July 1993, two South Africans were arrested in Pietermaritzburg for being in possession of and offering for sale the anterior and posterior horns of a White Rhino. The asking price for the horn, which had a combined weight of 4.6 kg, was R20 500 (US$6000). The two await trial in Pietermaritzburg.

On 27 July 1993, Victor Booyens of Wynberg pleaded guilty to the charge of having a White Rhino horn in his possession and attempting to sell it. He was sentenced by Johannesburg Magistrates' Court to a fine of R15 000 (US$4300) or 600 days in gaol. Booyens admitted to having committed the offence on 7 October 1992. In a written statement handed to the court, he claimed he had originally planned to contact the police when the seller got in touch with him so that they could track down the man, but he could not get through to them. Defence representative, Mike Werner, told the court that Booyens had a "good working relationship" with the police and had helped them in the past.

TRAFFIC East/Southern Africa-South Africa; Endangered Species Protection Unit of the South African police; South African police; Natal Parks Board; Saturday Star (South Africa), 21 February 1993; Natal Witness (South Africa), 26 January 1993, 8 February 1993; The Star (South Africa), 26 March 1993, 3 June 1993, 28 July 1993; The Citizen (South Africa), 28 July 1993;

TANZANIA

Four Russian seamen and a Tanzanian citizen were arrested in Dar es Salaam in early June on charges of illegal possession of elephant ivory. The Russians were crew members of a ship which had docked in the port. A total of 50 pieces of elephant tusk weighing 102 kg were seized. The suspects were being held in police custody without bail until their case could be heard in the Kisutu Resident Magistrates' Court.

TRAFFIC East/Southern Africa-South Africa

ZAMBIA

In April 1993, three police officers appeared in Kafue Magistrates' Court accused of giving K40 000 (US$80) cash to a wildlife public prosecutor as an inducement for him not to reveal the theft of 6 rhino horns which were exhibits in a case already before court. It was alleged that one of the officers, whilst acting alone, stole 6 rhino horns which were in his custody. The case has been adjourned until 2 June and the officers have been granted bail.

Eight poachers were arrested by paramilitary police on 18 April 1993 at the Chiawa Pontoon after being found in possession of 12 elephant tusks (one of which weighed 29 kg), and armed with weapons.

Species-Watch Newsletter, Vol. 1(5), April 1993

ASIA

INDIA

In January 1993, 14 kg of Tiger *Panthera tigris* (App. I) bones were seized in Kotdwar Forest Division of Uttar Pradesh from two residents of Delhi. The persons are said to be members of an organized gang of Tiger bone traders and stated that they were on their way to Delhi where the bone would fetch Rs. 1500 (US$50) a kg.

On 25 May 1993, 30 kg of Tiger bones were seized at Leh airport, Ladakh, in northwest India on the border with Tibet. This is the first known case of attempted smuggling of Tiger bones using this route. Further details are awaited on both these cases.

On 12 May 1993, two persons appeared in court in Delhi charged with illegal possession of skins of 6 Leopards *Panthera pardus* and 14 otters. TRAFFIC India staff appeared in court and opposed bail application. The accused were given judicial custody but finally obtained bail on 3 June. Investigation by TRAFFIC India indicates that the two are involved in what is believed to be the largest poaching network in northern India.

On 5 June 1993, 228 skins of Grey Wolf *Canis lupus*, hyaena, fox and wild cats, were found in an unclaimed railway parcel at Jaipur, in Rajasthan state; the parcel had been described as containing leather goods. This is the second railway parcel containing animal skins seized in Rajasthan in recent months.

In late April 1993, Customs officers at Delhi's container depot seized a consignment of some 5375 kg of Yew *Taxus baccata* leaves which was being transported from India to Italy.

Authorities have uncovered a large consignment of Peacock *Pavo cristatus* tail feathers and Sandalwood *Santalum spicatum* being transported to Singapore

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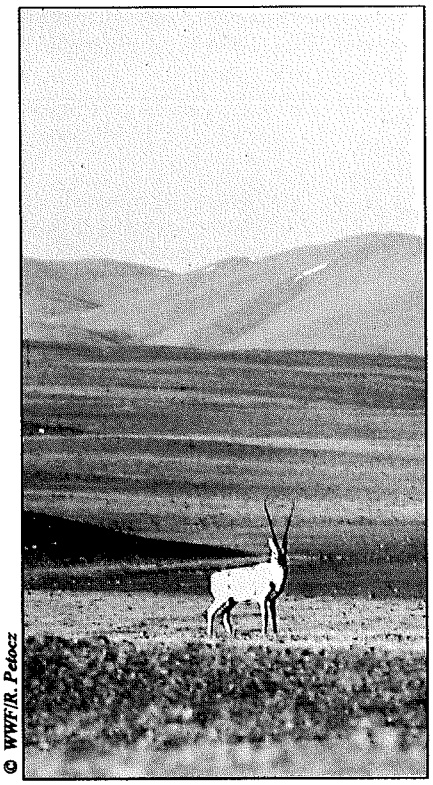
Yew *Taxus baccata*



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Chiru *Pantholops hodgsoni*

from Madras port. The contents, which were declared as mica powder, amounted to 420 000 peacock tail feathers separated into 12 bundles, 147 bags of Sandalwood weighing 7000 kg and 15 small Sandalwood pieces weighing 530 kg. Six people, including a Singapore national and a container agent, are accused of involvement in the case.

In early June 1993, a consignment of 105 kg of wool, believed to be from the Chiru *Pantholops hodgsoni* (App. I), was seized at Delhi airport from two Nepali nationals (see page 39). Investigations are continuing.

TRAFFIC India

OCEANIA

STATE
South Australia

On 14 April 1993, at Port Pirie Magistrates Court, Mr Koon Yong Lok and Mrs Han Jeong pleaded guilty to charges of unlawful possession of abalone *Haliotis*. The couple were fined A$4700 (US$3200) each for buying 90 kg of abalone meat from unlicensed suppliers and possessing some 5750 abalone shells.

The Advertiser (Australia), 21 April 1993

Western Australia

On 12 July 1993, at Broome Court, Western Australia, 17 Indonesians were sentenced to terms ranging from 100 days to two years' probation, or fines of up to A$2000 (US$1380), for poaching Trochus *Trochus* shells in waters around Rowley Shoals islands, northern Australia. The accused were arrested after their 10-m vessel was sighted by Australian police inside the Australian fishing zone. A number of those detained were underage and were sent back to Indonesia. The vessel and equipment were seized and will be destroyed.

Immigration archives record that two of the crew were found fishing illegally in Australian waters in 1980 and 1985. A number of cases of Indonesians apprehended for illegal fishing activities in Australian waters have been reported in previous issues of the *TRAFFIC Bulletin* (see 7(3/4):61; 10(1/2):10; 12(1/2):27; 12(3):73.

The Indonesian Times (Indonesia), 14 July 1993

AMERICAS

COSTA RICA

On 27 May 1993, four members of a Dutch family were detained at Juan Santamaría airport as they attempted to leave the country on a KLM Airlines flight with 40 Poison-arrow frogs *Dendrobates* (App. II) and 3 live lizards contained in their suitcases. The accused, who have been detained for sentencing, are liable to a maximum fine of c100 000 (US$7000) or 2 years' imprisonment.

La Nación (Costa Rica), 4 June 1993

USA

On 13 August 1993, at the US district court in Alexandria, Richard Mitchell was charged with smuggling gazelle hides and horns from Pakistan into the USA. Mitchell, a US Fish and Wildlife Service employee, was charged with failing to file a written Customs declaration when he brought the hides and horns into the USA. He was acquitted of charges related to big-game hunts he helped to arrange in China and Pakistan. During two hunting trips, whilst on a temporary assignment with the Smithsonian Institution, 4 rare mountain sheep and 2 Chiru *Pantholops hodgsoni* (App. I) are reported to have been killed. This work, however, was deemed to be in support of conservation. Mitchell was sentenced to two years' probation.

A large number of Boa Constrictors *Boa constrictor* (App. II) have died after being used as vessels to smuggle cocaine.

On 29 June 1993, at Miami International airport, 41 boxes containing 312 Boa Constrictors arriving on a flight from Bogotá, Colombia, were seized when an inspector noticed an unnatural bulge in one of the specimens. X-rays revealed two condoms containing cocaine. Drug Enforcement Administration and Customs Service agents decided to allow the shipment entry so that it could be tracked to the importer. A man was seen loading the reptiles into a van which he then left parked outside an apartment complex. The vehicle was kept under surveillance by agents until concern for the animals' condition in temperatures of 95 degrees, impelled them to open the van. Inside, 202 boas were dead. Of the 110 survivors, 21 were found to be stuffed with cocaine and these specimens died shortly afterwards at Miami Metrozoo. Some 36 kg of cocaine was seized. There have been no arrests or charges in connection with the incident.

On 2 August 1993, at the District Court of the Southern District of Florida, Richard Furzer, pleaded guilty to charges of conspiring to illegally smuggle African Grey Parrots *Psittacus erithacus* (App. II) into the USA from Zaire.

Between September 1988 and October 1990, Furzer conspired to import approximately 1478 African Greys which had been illegally collected in Zaire and smuggled to Senegal, where false CITES export permits were obtained to accompany the shipments to the USA. The case is pending.

On 6 July 1993, in the Northern District of Georgia, Doris Grigsby and her husband David Grigsby, were convicted on charges of conspiracy, smuggling, illegal importation of African Elephant *Loxodonta africana* ivory, and unlawful possession of protected birds.

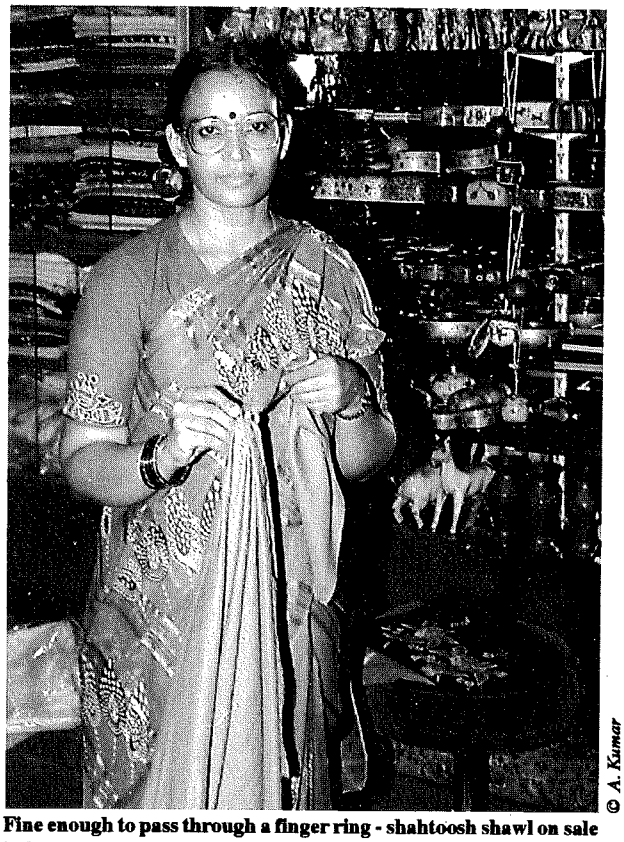
In August 1992, the defendants, both taxidermists, smuggled ivory tusks from Canada into the USA through the border crossing at Ogdensburg, New York, to their home in North Georgia. Prior to and during a raid of their house by agents of the US Fish & Wildlife Service, 6 tusks were seized along with skins and body parts of Black Bear *Ursus americanus* (App. II), Harp Seal *Pagophilus groenlandicus* and Polar Bear *Ursus maritimus* (App. II). The defendants each face a maximum gaol sentence of 11.5 years and a fine of approximately US$500 000. Sentencing is scheduled for 8 September 1993.

On 11 August 1993, in the Southern District of Florida, Lucio Marcelo Coronel, an Argentinian, was charged with the illegal import of reptiles into the USA contrary to CITES and the US *Endangered Species Act*.

On 7 February 1993 the defendant arrived at Miami airport from Buenos Aires. A large suitcase in his possession was searched by Customs officials who found the following wildlife contained in sacks secreted under clothing: 76 South American River Turtles *Podocnemis expansa*, 107 Chaco Tortoises *Geochelone chilensis*, 103 Red-footed Tortoises *Geochelone carbonaria*, 20 Red Tegus *Tupinambis rufescens* and 7 Rainbow Boas *Epicrates cenchria*, all listed in App. II and 5 Argentine Boa Constrictors *Boa constrictor occidentalis* (App. I). Also included in the shipment were a number of Argentine walking treefrogs *Phyllomedusa sauvagei*, Parrot Snakes *Leptophis ahaetulla*, Ameivas *Ameiva ameiva*, Neotropical rattlesnakes *Crotalus durissus*, and unidentified tarantulas, scorpions and treefrogs *Hyla* spp. The numbers of above specimens seized are approximate.

Coronel pleaded guilty and was sentenced to 15 months' imprisonment. Many of the animals later died, including 70 of the turtles. However, the surviving specimens included in the shipment were returned to Argentina and released in the wild.

TRAFFIC USA; New Scientist, 12 June 1993; The Washington Times (USA), 14 August 1993; The Washington Post (USA), 3 July 1993; United States Attorney, Northern District of Georgia, 7 July 1993; United States Attorney, Southern District of Florida, News Releases, 2 /11 August 1993; The Miami Herald (USA), 12 August 1993.



© A. Kumar

Fine enough to pass through a finger ring - shahtoosh shawl on sale in New Delhi.

Shahtoosh - King of Wool

Ashok Kumar

The Chiru *Pantholops hodgsoni* is an antelope which is found in treeless elevations above 5000 m in Tibet and in areas of northwest India bordering Tibet. Chiru wool, known as shahtoosh (king of wool), has long been prized for its extraordinary warmth and softness and has traditionally been used in the manufacture of shawls. It is so light that it is possible to pass a shahtoosh shawl through a finger ring. Although this species of antelope has been listed in CITES Appendix I since 1979, and is included in Schedule I of India's *Wildlife (Protection) Act*, which prohibits hunting and trade in this species, shahtoosh wool continues to be found in trade.

Today, the shahtoosh shawl is widely worn in northern India. Dr G. Schaller has reported (*in litt.* to Dr B. Bunting, 20 February 1992) that Dharchula, situated in northwest Nepal on the border with India and a well-known frontier post for smuggling wildlife products into India, is a major trading post for shahtoosh wool; a family residing in this town is believed to be the biggest trader in this product. In New Delhi, the wool is sold to Kashmiri traders who send it to Srinagar, Kashmir for weaving (G. Schaller, pers. comm., February 1992). Here, the shawls are woven from pure shahtoosh, or a mixture of shahtoosh and wool from the domesticated Pashmina goat for a more durable and less expensive garment. Although the traders claim that the wool is collected from thorny bushes in which the Chiru has become entangled, in fact no such vegetation occurs in the species' habitat. Instead, the animal is hunted and killed in large numbers, with hunting pressure particularly high near the Chang Tang Reserve (Schaller, *in litt.* to Dr B. Bunting, 20 February 1992), which was set up in late 1990 to protect Tibet's wildlife.

The average yield of wool per animal is said to be 150 g. A fine of 500 Yuan (US$90) which can be imposed for illegal hunting of this antelope, does not seem to be a deterrent: in late 1992, a researcher for TRAFFIC India reported the arrival from Tibet of 2000 kg of shahtoosh wool in Leh, Ladakh, and in Srinagar, Kashmir. The price of shahtoosh in 1992 was Rs.39 000 a kg (US$1250) but dropped to Rs.16 000 a kg in early 1993. The reason for the drop in price is not fully understood but has been attributed to the political and financial instability in Kashmir which has prevented weavers from buying shahtoosh.

In February 1993, another researcher working for TRAFFIC India conducted a brief survey of the shops in New Delhi and found a total of 40 shahtoosh shawls in four shops; about half of these shawls were found in one shop, which is state-owned. Door-to-door Kashmiri salesmen are known to be selling shahtoosh shawls for companies, and the product is also sold privately by Kashmiris.

Women's shawls are generally 2 m long and just under 1 m wide; men's shawls are between 2.5 m and 3 m in length and 1 m wide. The price depends upon the quality, colour, embroidery and size. The natural colour of the antelope's wool - beige, with white at the throat and on the belly - is the most popular. The lighter shades fetch the highest prices: white, generally meant for male use, is the most expensive; black, maroon, ruby and moss green colours are also seen. The researcher, a US citizen of Kashmiri extraction and fluent in the language, was offered a woman's shawl in beige for about Rs.20 000; the larger shawls were available at prices reaching Rs.50 000. White shawls were not available at the time of the survey. Western buyers are quoted prices which range from between US$3000 and US$3500 (Schaller, *in litt.* to Dr B. Bunting, 20 February 1992).

There has been no attempt to ranch the Chiru for its fur, as is the case with Vicuna *Vicugna vicugna* populations in Peru - a practice that has greatly alleviated the pressure on wild populations of this species. However, Schaller is of the view that such an experiment would spell disaster for this species as there are too few animals to use for capture and captive breeding, and he urges a complete ban in this trade (G. Schaller, pers., comm., May 1993), in accordance with international and national legislation.

In early June 1993, and following concern expressed by Schaller to the authorities about the continuing trade in this product, Indian Customs officers at Delhi airport seized a consignment of 105 kg of wool believed to be shahtoosh arriving by air from Kathmandu, Nepal; samples are currently being forensically examined. There have also been reports of shahtoosh being smuggled from India into Italy.

Acknowledgements

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Ashok Kumar is the Director of TRAFFIC India.

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TRAFFIC is supported by WWF - the World Wide Fund for Nature and IUCN - the World Conservation Union - to monitor trade in and utilisation of wild plants and animals. As the majority of the Network's funding is provided by WWF, the Network is administered by the WWF Programme Committee on behalf of WWF and IUCN.

The mission of TRAFFIC is to enhance, in accordance with the principles of the World Conservation Strategy, the conservation of biological diversity by: monitoring and reporting on trade or other forms of utilisation of animals and plants and their derivatives; identifying areas of such utilisation that may be detrimental to any species, and; assisting the Secretariat of, and Parties to, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and other appropriate bodies in facilitating the control of trade and in curtailing possible threats to species created by trade or other forms of utilisation.

The TRAFFIC Network shares its international headquarters in the United Kingdom with the World Conservation Monitoring Centre.

WWF

IUCN
The World Conservation Union