

VOL. 20 NO. 3

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TRAFFIC

B U L L E T I N

OCTOBER 2005

ETHIOPIA'S EFFORTS TO CLOSE
ILLEGAL IVORY MARKETS

DEVIL'S CLAW TRADE IN
SOUTH AFRICA

EUROPE'S SEIZURES OF
EMERALD MONITORS

The journal of the TRAFFIC network disseminates information on the
trade in wild animal and plant resources

The *TRAFFIC Bulletin* is a publication of TRAFFIC, the wildlife trade monitoring network, which works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. TRAFFIC is a joint programme of



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

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Published by TRAFFIC International,
219a Huntingdon Road, Cambridge, Cambs.
CB3 0DL, UK.

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ISSN 0267-4297
UK Registered Charity No. 1076722

Cover illustration:
Devil's Claw *Harpagophytum procumbens*
(U. Schippmann / Federal Agency for Nature Conservation, Germany)

This page, from top:
Saker Falcon *Falco cherrug* (Xavier Eicher)
Devil's Claw *Harpagophytum procumbens*
(U. Schippmann / Federal Agency for Nature Conservation, Germany)
Ivory carvings (S. Milledge / TRAFFIC)

Funding for the printing and distribution of this issue of the *TRAFFIC Bulletin* is generously provided by The Rufford Maurice Laing Foundation and the Ernest Kleinwort Charitable Trust.

Printed on recycled paper by Thanet Press Ltd,
Union Crescent, Margate, Kent, CT9 1NU, UK.

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October 2005

WHILE MUCH of the public's perception of wildlife trade is focused on charismatic species such as Tigers and elephants, few probably realize that the most valuable wildlife commodity being traded globally is actually timber. According to the Food and Agriculture Organization of the United Nations, the global trade in wood products is estimated at USD168 billion, with the formal forestry sector alone employing more than 13 million people worldwide (2000). However, this vital economic resource is being threatened by poor management and governance, illegal logging and illegal timber trade, with governments experiencing rapidly dwindling revenues as a result of uncollected forest-related taxes and foreign currency exchange losses. The legal timber industry, in the meantime, loses millions of dollars to illegal logging operations, and the livelihoods of many local communities that depend upon forest resources for employment and income are being threatened. Not so easily quantifiable is the destruction to the habitats of millions of plant and animal species, as well as the loss of valuable water catchments and other vital ecological services provided by the world's forests.

EDITORIAL

Illegal logging and illegal timber trade is a plague that not only affects the tropical timber producing countries in South-east Asia, Central Africa and the Amazonian countries, but also the temperate forests of regions such as the Russian Far East and the Caucasus. While there are no reliable statistics available, between 40% and 80% of total wood production in Indonesia is thought to be illegal, while estimates for the Russian Far East and the Caucasus can be up to 50%. Worldwide, the percentage of timber entering international trade that is illegal is reported to be between 20% and 80%.

Accurate figures for illegal timber are difficult to determine because illegal logging and illegal timber trade encompass such a wide range of different and disparate practices. This may include logging outside concession boundaries or within protected areas; logging protected species; illegal occupation of forest lands; obtaining logging concessions through bribes; illegal timber transport and trade; smuggling; transfer pricing and other illegal accounting practices; under-grading; under-measuring; under-valuing; misclassification of species; and, illegal processing of timber.

This complex web of illegal activity is further complicated by the lack of an internationally accepted definition of what constitutes legality of timber products. For timber species listed in the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the permit and certificate system, including provisions in the text of the Convention relating to legal procurement, can provide a proxy for ensuring that timber traded internationally is not illegally obtained. CITES is, in fact, one of the few treaties that incorporates a dual checking mechanism to detect illegal trade. In the country of export, local authorities and Customs will have checked for the legality of the permit and shipment. In the importing country, Customs inspect the shipment against the CITES permit that accompanies it. All imports and exports are recorded in national CITES annual reports, which are sent to the CITES Secretariat and compiled in a central database. The data are available to any Party for analyses. This increased transparency in the trade can help governments monitor the industry and extraction from the forest more effectively and

hence increase the flexibility for adjusting their management regime accordingly.

However, for timber species not listed under CITES - the vast majority of those traded - the legality or illegality of shipments of timber in international trade may vary at different points of the trade chain, depending upon whether the illegality occurs up to the point of export or import, or whether such imports and exports are recorded by importers and exporters. Illegally sourced timber products could find their way to the international markets even if regulatory conditions and documentation for export and import are met. For instance, illegal export from one country may be acceptable as legitimate import into another as long as the import requirements are apparently met.

It is therefore imperative that logging should not be examined in isolation from the timber trade. Illegal trade, to a large extent, drives uncontrolled logging and illegal logging. Illegal timber trade, in turn, is often masked by the lack of transparency of the timber trade in general, with little or no reliable information available regarding trade routes, timber values, species in trade, trade volumes and other important characteristics.

With increased transparency in trade information and enhanced analysis of statistics on timber exports and imports, governments could be in a good position to identify indicators of abnormal trade discrepancies - and possible illegality. Trade discrepancies may arise from a variety of 'routine' practices such as differences in fiscal year, method of product valuation, time lag between export and import, exchange rate fluctuations, conversion of product weights to volumes and shipment of mixed products. However, if governments take steps to eliminate or at least greatly reduce such factors, significant trade discrepancies could be clear pointers to illegal activity such as mis-specification of product characteristics, fraudulent trade data and smuggling.

Realizing the potential importance of trade statistics as a tool, and to follow up on similar work conducted by the International Tropical Timber Organization, TRAFFIC received funding support from the Keidanran Foundation in Japan to study the system between Japan and Indonesia. The study reviewed and defined the routines and procedures for checking the data, in particular the raw data obtained by Customs at the point of export and import. The findings from the study were presented at a workshop in Jakarta, Indonesia, on 9 May 2005, involving stakeholders from various government departments in Indonesia and the forestry representative from the Embassy of Japan. TRAFFIC hopes that recommendations from the workshop can be implemented in the countries concerned and intends to co-operate with governments from other key timber producing and importing countries on similar initiatives. TRAFFIC will also be collaborating with the Secretariat of the Association of Southeast Asian Nations (ASEAN) to develop a project that will expand the scope of the study.

Trade statistics can be used as a valuable weapon with which governments and other stakeholders could monitor and address the scourge of illegal logging and illegal timber trade. The adage "there are lies, damned lies and statistics" may be true for some instances. But in the case of the international timber trade, statistics may in fact hold the key to revealing the truth about where a country's valuable forest resources are going - and how they can be protected.

Chen Hin Keong Senior Forest Trade Advisor,
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Amélie Knapp has been appointed Senior Research Officer at TRAFFIC Europe. Amélie is based in Cambridge at TRAFFIC International.

Rob Parry-Jones, previously based in Fiji for TRAFFIC Oceania, has taken up the position of UK Enforcement Support Officer at TRAFFIC International while Stephanie Pendry is on maternity leave.

bulletin board

Julie Thomson is leaving her position as Deputy Director of TRAFFIC Southeast Asia and representative of TRAFFIC Southeast Asia-Indochina, effective from the end of November 2005. Julie has been working at TRAFFIC's Indochina office, based in Hanoi, Viet Nam, since July 2000. Julie and her team were recently awarded the Vietnamese Friendship Medal for their species conservation work in the country. The award reflects the hard work that this office has put into wildlife trade and species conservation efforts in Viet Nam over the past several years. A new TRAFFIC representative for this office will be appointed in due course.

From 1 July 2005, Gerhard van den Top became the new chairman of the TRAFFIC Committee, the governing body under which TRAFFIC works as a joint programme of WWF and IUCN. He replaces Chris Hails, who served for 10 years in this role overseeing successfully many important steps in TRAFFIC's development. Gerhard is the Conservation Director at WWF-Netherlands, a major contributor to TRAFFIC's funding. He has served on the TRAFFIC Committee since 2000 and takes up the chair's role at an important time, following the signature in May 2005 by the WWF and IUCN Directors General of a new agreement for renewed partnership in TRAFFIC's activities. Writing to TRAFFIC staff after his appointment, Gerhard stressed his ambition to help harness the science, communications and fundraising power of IUCN and WWF to promote growth in TRAFFIC's resources and strengthen the impact of its work.



TRAFFIC

traffic websites

<http://www.traffic.org> (English)
<http://www.trafficindo.org> (English)
<http://www.wwf.ru/traffic> (Russian)
<http://www.wwf.org.mx/traffic.asp> (Spanish)
<http://www.wwfchina.org/traffic> (Chinese)
<http://www.wow.org.tw> (Chinese)
<http://www.trafficj.org> (Japanese)

This issue of the *TRAFFIC Bulletin* is available on <http://www.traffic.org>

WORLD LEADERS SIGN PLEDGE TO PROTECT GREAT APES

An important step forward in the work to ensure the survival of great apes in Africa and Asia has been taken with the signing of the world's first Declaration on Great Apes - to be known as the Kinshasa Declaration.

The Declaration was signed on the final day of the first Intergovernmental Meeting on Great Apes held in Kinshasa, Democratic Republic of Congo, from 5 to 9 September 2005. Governments from 27 nations joined scientists, environmental organisations, and representatives of business, industry, and communities from around the world to formulate plans to protect great ape populations in Africa and Asia that are threatened as a result of the demand for bushmeat, the pet trade and loss of habitat.

According to UK Biodiversity Minister Jim Knight who signed the declaration on behalf of the UK, delegates took into consideration issues affecting the conservation of great apes (*Gorillas Gorilla beringei*, *G. gorilla*, Chimpanzees *Pan troglodytes*, Bonobos *Pan paniscus* and Orang-utans *Pongo abelii*, *P. pygmaeus*). These include education and integration of local communities, greater enforcement efforts against poaching, and increased and sustained levels of governance in the forestry industry. Very importantly, the Declaration recognizes the need to reconcile the needs of local people with the needs of great apes, and the fact that great apes and their habitats can help alleviate poverty in local communities through sustainable enterprises like tourism.

Delegates to the conference also agreed the Global Strategy for the Survival of Great Apes, a set of draft rules to govern the Great Apes Survival Project (GRASP) Partnership's activities (launched by UNEP and UNESCO in 2001), and a work plan for the Partnership from 2005-2007. An Executive Committee and a Scientific Commission will be established to guide the work of the GRASP Secretariat and Partnership until the next GRASP Council Meeting, which will be held in two years' time.

Two TRAFFIC reports, published in June and September 2005, call for stricter implementation of legislation to protect these species. The reports can be downloaded from the TRAFFIC website (see page 97).

Press release no. 386, UK Department for Environment, Food and Rural Affairs: www.defra.gov.uk, 9 September 2005; TRAFFIC International

San Marino and Cape Verde Join CITES

The Republic of San Marino's accession to CITES came into effect on 20 October 2005; it becomes the 168th Party to the Convention. The Republic of Cape Verde acceded to CITES on 10 August 2005, effective on 8 November 2005, and becomes the 169th Party.

CITES Secretariat: <http://www.cites.org>

MONGOLIA'S WILDLIFE TRADE: *Challenges & Opportunities*

Illegal and unsustainable hunting for local trade and consumption, as well as for the international market, is resulting in dramatic declines in a variety of Mongolia's wildlife species including Saiga Antelope *Saiga tatarica mongolica*, Musk Deer *Moschus moschiferus*, Brown Bear *Ursus arctos*, Snow Leopard *Uncia uncia* and Saker Falcon *Falco cherrug*. A recent study (Zahler *et al.*, 2004) found that Saiga Antelopes have declined from 5000 animals to fewer than 800 in just the last five years. Significant declines have also been reported for Mongolia's Saker Falcon population and unsustainable trade to the Middle East is believed to be the major contributing factor. Homes (ed.) (2004) found that trade in Musk Deer pods increased in the mid-1990s, with a minimum illegal off-take of 2000 males every year. Snow Leopard skins and bones are also subject to illegal trade and trade to China is often the driver of this poaching (Theile, 2003). China is the end market for traditional medicines such as Saiga Antelope horn, Snow Leopard bones, Brown Bear gall bladders and musk, as well as being a transit market for furs, such as those of Gray Wolf *Canis lupus*, Lynx *Lynx lynx* and Marmot *Marmota sibirica*, which are turned into coats and then re-exported for sale in Russia.

These results were confirmed and supplementary data obtained during a nationwide survey of Mongolia's hunting practices, conducted in recent months by a broad coalition of conservation organizations. The survey canvassed 5000 Mongolians: over a quarter of Mongolia's men are hunters, and they confirm common declines in wildlife populations of 50-90% in recent years. Illegal hunting and trade have increased dramatically since Mongolia's transition to a free-market economy in the early 1990s, including increased reliance on trade with China.

The national survey was the centrepiece of the National Seminar on Wildlife Trade in Mongolia (17-19 August 2005), hosted jointly in Ulaanbaatar by WCS and WWF, with sponsorship from the World Bank. Dr Craig Kirkpatrick, Regional Director of TRAFFIC East Asia, gave the seminar's keynote address "The Global Extinction Crisis and the Role of Wildlife Trade". The seminar brought together over 100 people from government agencies, conservation organizations, and academic departments. Mongolia's Ministry of Environment and the State Specialized Inspection Agency - responsible for the enforcement of all regulations in Mongolia - the Mongolian Academy of Sciences, and conservation organizations such as WWF, WCS, and TRAFFIC, joined together to develop a strategy to eliminate unsustainable and illegal wildlife trade. This strategy focuses on the twin themes of hunting management and trade enforcement. Hunting must be managed for sustainable off-take, which necessitates equitable distribution of benefits from trophy hunting, as well as recognition of community tenure with regard to wildlife populations. Trade enforcement requires a comprehensive approach at both domestic and international levels.

TRAFFIC looks forward to future involvement in assisting with inter-agency co-operation, training programmes for Customs and border police in association with WWF and the Mongolian Customs University, and incentive systems for best practice within the Customs service.

Sources: Homes, V. (ed.) (2004). *No Licence To Kill: The Population and Harvest of Musk Deer and Trade in Musk in the Russian Federation and Mongolia*. TRAFFIC Europe. Theile, S. (2003). *Fading Footprints: The Killing and Trade of Snow Leopards*. TRAFFIC International. Zahler, P., *et al.* (2004). *Illegal and Unsustainable Wildlife Hunting and Trade in Mongolia*. *Mongolian Journal of Biological Sciences* 2(2), The Faculty of Biology, National University of Mongolia.

Craig Kirkpatrick, Regional Director, TRAFFIC East Asia

- As of 1 April 2005, Canada's Department of Fisheries and Oceans initiated the implementation of the Catch Documentation Scheme with respect to all imports and exports of the Antarctic and Patagonian Toothfish *Dissostichus mawsoni* and *D. eleginoides*. This scheme, designed to track landings and trade flows of toothfish, requires toothfish fishermen to produce a validated Catch Document or a Re-export Document submitted at least 72 hours before the arrival of the shipment of fish. This conservation initiative demonstrates Canada's commitment to the elimination of illegal, unreported and unregulated fishing of these species. Canada is a significant toothfish importer.

TRAFFIC North America;
TRAFFIC International

briefly



CHINESE GIANT SALAMANDER *ANDRIAS DAVIDIANUS*

- THE CHINESE GIANT SALAMANDER *ANDRIAS DAVIDIANUS* (CITES I) - THE WORLD'S LARGEST AMPHIBIAN - IS UNDER THREAT FROM ILLEGAL HUNTING. SPECIMENS CAN GROW TO A LENGTH OF A METRE AND A HALF WHICH MAKES THEM EASY PREY FOR HUNTERS WHO SELL THEIR MEAT. DESPITE BEING A PROTECTED SPECIES IN CHINA, NUMBERS HAVE FALLEN SHARPLY IN RECENT DECADES: WHERE POPULATIONS HAVE BEEN STUDIED, FALLS OF AROUND 80% OVER THE PAST 45 YEARS HAVE BEEN RECORDED.

<http://news.bbc.co.uk>

- Wildlife offenders face increased penalties in the UK following the introduction of new laws which came into effect on 21 July 2005. Violators of the *Control of Trade in Endangered Species (Enforcement) (Amendment) Regulations 2005* (COTES) involving the illegal sale, purchase, advertising and display for commercial purposes of protected species, will be punished by imprisonment of up to five years. Previously offenders were liable to a maximum period of imprisonment of up to two years.

The new legislation also gives police officers stronger powers to investigate such offences, including powers of arrest, entry, search and seizure.

Press release no. 263, UK Department for Environment, Food and Rural Affairs: www.defra.gov.uk, 27 June 2005

FUNGUS DEMAND IN BHUTAN FOR TCM THREATENS LIVELIHOODS

Jigme Dorji National Park in Bhutan is reported to be under pressure from hunters digging up caterpillars infected with a fungus *Cordyceps sinensis* which has been used in traditional Chinese medicine for centuries to treat conditions such as respiratory illness and impotence.

Cordyceps sinensis parasitizes the larvae of a moth of the genus *Thitarodes*, kills it and occupies the body's cavity. In spring, the fungus sends out a stalk from its dead host to release spores which go on to infect other caterpillars. An area of rich biodiversity, Jigme Dorji has an abundance of these fungus-infested caterpillars, which are limited only to the alpine meadows of the Himalayas. Collection and trade of the fungus (or *yart-sa gunbu*, as it is known in Tibet) is one of the most important sources of income for pastoral Tibetan communities. There is concern that if the crop collapses, the livelihoods of thousands of families would be affected. The problem is exacerbated by poachers from Tibet.

The Bhutanese Government recently introduced regulations permitting a limited trade but this has failed to stop mass removal of infected caterpillars from the park.

One suggestion to relieve the pressure is to establish fungal farms in villages.

China is also a range State and a major exporter of *Cordyceps sinensis*. Although tissue culture operations for this product are being tested in China, exports are largely sourced from the wild. It is an important source of income to local communities and prices are reported to have increased about ten-fold over the past 20 years. *Cordyceps sinensis* is one of the few traditional medicines in China that have been given a specific Customs code, which allows international trade to be tracked. Hong Kong, one of the principal importers of this product from China, is reported to have imported about 1200 kg of the fungus from China in just the first half of 2004, while during the same period, Hong Kong re-exported over 6000 kg to over 13 countries.

TRAFFIC East Asia; www.guardian.co.uk/conservation/story/0,13369,1567293,00.html; A Coloured Atlas of the Chinese Materia Medica Specified in Pharmacopoeia of the People's Republic of China (1995 Edition), Joint Publishing (HK) Ltd., Hong Kong. Hong Kong trade data: the Census and Statistics Dept, Hong Kong SAR Government.

AGE OF WILD-HARVESTED AMERICAN GINSENG EXPORTS INCREASED

Exports from 19 US States of wild American Ginseng *Panax quinquefolius* roots harvested in 2005 must be from plants 10 years of age (with four leaves) or older (i.e. with 10 or more bud-scale scars on the rhizome); the previous age limit was five years (with a minimum of three leaves).

The decision was announced on 18 August 2005 by the US Fish and Wildlife Service following its annual review of the biological and management status of this species, and "based on the best available biological information on the status of the species". A review of State annual harvest data shows that, since the 1999 implementation of a five-year minimum-age limit on

ginseng roots, the number of wild roots harvested has steadily increased. The data also indicate that there is a growing trend in the harvest of smaller roots, which indicates that fewer older plants are present in the wild. Other factors influencing the decision include concerns about poaching of ginseng plants, browsing by deer in some States, transportation by diggers of young roots to other locations, and digging out of season.

www.naturalnews.com/2005/08/fws_extends_har.html. The findings of the USFWS analysis can be found at: www.ahpa.org/05_0803_2005.GinsengFinding.pdf and the accompanying Species Review at: www.ahpa.org/05_0803_2005.Ginseng Species Review Annex1.pdf.

GINSENG ERRATA

Please note that Figure 2 on page 74 in *American Ginseng: Assessment of Market Trends* which featured in *TRAFFIC Bulletin* 20(2) (February 2005), was scaled incorrectly along the Y-axis and contained an incorrect total of exports from Canada and the USA for 1998: this should have read 2 343 856 kg. The correct data are reproduced here and we regret any inconvenience that this error may have caused.

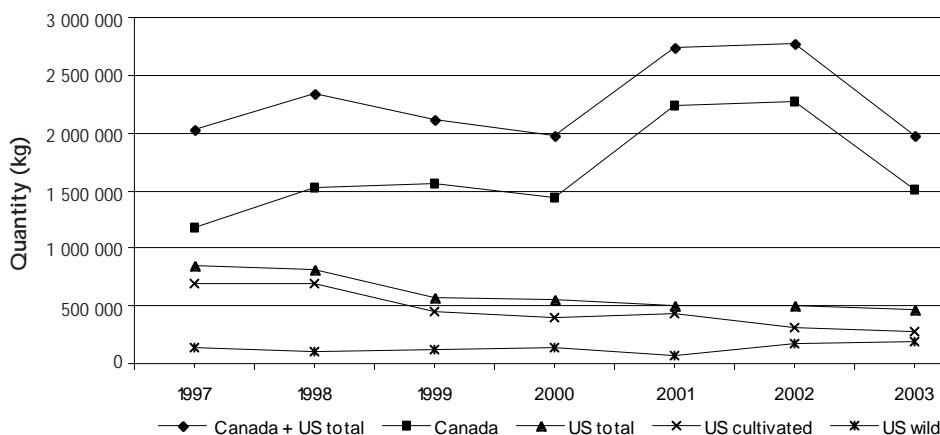
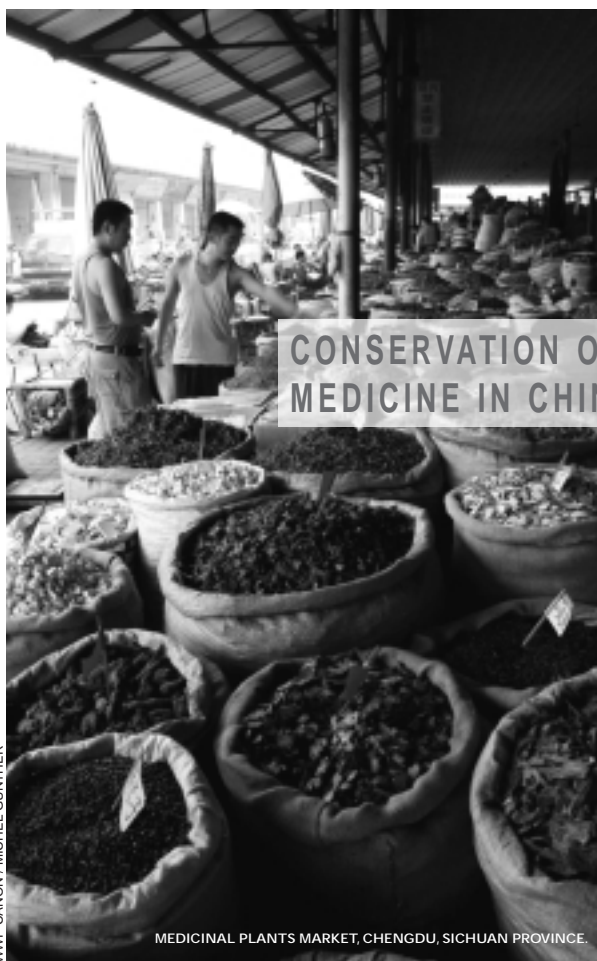


Figure 2. Quantity (kg) of North American Ginseng exported from 1997 to 2003.



WWF-CANON / MICHEL GUNTHER

MEDICINAL PLANTS MARKET, CHENGDU, SICHUAN PROVINCE.

CONSERVATION OF FLORA COLLECTED AS TRADITIONAL MEDICINE IN CHINA'S MINSHAN MOUNTAINS

THE MINSHAN MOUNTAINS OF SICHUAN PROVINCE, CHINA, make up one of the most biologically diverse sub-tropical and temperate regions in the world. Almost half the world's Giant Pandas *Ailuropoda melanoleuca* occur here, as well as three quarters of China's medicinal plants - some 5000 species - which are used in traditional medicine. It is this richness in species composition and the potential threats affecting it that has made the Minshan mountains one of WWF's top priorities for biodiversity conservation.

The Minshan mountains are also home to almost 300 000 people, many of whom live in poverty. The collection and sale of plant species used as traditional medicines is an important source of income. This collection can disturb panda habitat, however, and at times causes the extinction of local populations of some species of medicinal plants.

Long-term conservation in the Minshan mountains requires better management of the collection of species used as traditional medicine, protecting both biodiversity and local livelihoods. TRAFFIC East Asia, WWF's Sichuan Program Office, and the Sichuan office of the China CITES Management Authority have joined forces to address this issue. One example of such collaboration has been the convening of a workshop to discuss strategies for the sustainable use and conservation of species collected as traditional medicine in the region, held in Chengdu City, Sichuan Province, on 22 to 24 March 2005 and sponsored by WWF Germany. Numerous stakeholders joined in this discussion, including the Sichuan Forestry Bureau, the Sichuan Institute of Chinese Traditional Medicine, the Di'ao Medicine Group and Conservation International. Presentations included background on the wealth of traditional medicine resources in the Minshan mountains (H.F. Xu, TRAFFIC East Asia), the potential to use international guidelines for the collection of medicinal plants in the Minshan mountains (S. Honnef, WWF Germany), and the way in which conservation of traditional medicines fits into the broader conservation programme for the Minshan mountains as a whole (L. Ling, WWF China).

While stakeholders at the workshop held a diverse set of viewpoints, there was consensus that the key challenge is to address the conflict between the local livelihoods and biodiversity conservation. This requires conservation action to manage the collection of wild plants more rigorously, improve transparency in trade chains between producers and consumers, ensure sustainable sources of income for local people, and promote conservation awareness at all levels.

In the coming months, the workshop results will be synthesized into a comprehensive strategy for the conservation of species collected as traditional medicines. This will be integrated with WWF's other initiatives for the Minshan mountains, such as the collection of other non-timber products, the management of protected areas, and ecotourism development. The workshop results also will be used to >



MINSHAN MOUNTAINS, SICHUAN PROVINCE, CHINA.



WWF-CANON / MICHEL GUNTHER

MEDICINAL PLANTS MARKET, CHENGDU, SICHUAN PROVINCE.

> engage in dialogue with multilateral aid agencies, aiming to provide substantial investment to achieve a model for biodiversity conservation and sustainability in the Minshan mountains through the collection and trade of wild medicinal plants. One possibility for financial support, for example, is through the European Union's China Biodiversity Grant Facility, which will invest Euro 25 million (USD32 million) to provide for livelihoods and biodiversity in China over the next five years.

Decisions taken at the workshop will allow efforts to conserve the region's biodiversity to move forward. Just as important, it furthered the exchange of information and stakeholder involvement for the conservation and sustainable use of wild medicinal plants. By working together, all parties can be more effective in ensuring that biodiversity and people can co-exist peacefully in the Minshan mountains of China.

TRAFFIC East Asia China Programme

SPECIES COMMONLY COLLECTED IN MINSHAN MOUNTAINS FOR TCM, THE PARTS USED, AND SOME CONDITIONS FOR WHICH THEY ARE APPLIED.

Szechwan Lovage (rhizome) (anxiety, anaemia)	<i>Ligusticum chuanxiong</i>
Dwarf Lily-turf (tuber) (cough, anxiety)	<i>Ophiopogon japonicus</i>
Chinese Goldenthead (rhizome) (mouth ulcer, conjunctivitis, burns)	<i>Coptis chinensis</i>
Chinese Caterpillar fungus (to boost immune system)	<i>Cordyceps sinensis</i>
Chinese Angelica (high blood pressure, thrombosis)	<i>Angelica sinensis</i>
Dangshen (root) (dizziness, palpitations)	<i>Codonopsis pilosula</i>
Tu-chung (bark) (fatigue, dizziness)	<i>Eucommia ulmoides</i>
Amur Corktree (bark) (urinary tract infection)	<i>Phellodendron amurense</i>
Magnolia (bark) (diarrhoea, cough, indigestion)	<i>Magnolia officinalis</i>
Manchurian Wild Ginger (all parts) (sinusitis, cough)	<i>Asarum heterotropoides</i> (var.)

Sources: TRAFFIC East Asia. Additional information relating to uses from Medicinal Plants in China. Compiled by The Institute of Chinese Materia Medica, China Academy of Traditional Chinese Medicine, WHO 1997.

SUSTAINABLE WILD COLLECTION OF MEDICINAL AND AROMATIC PLANTS: DEVELOPMENT OF AN INTERNATIONAL STANDARD



An estimated 40 000-50 000 plant species are used in traditional and modern medicine throughout the world. The majority are collected from the wild, a trend which is likely to continue over the long term due to, amongst other factors, high costs of cultivation. Moreover, cultivation is not necessarily the most beneficial production system: wild collection secures valuable income for rural households, especially in developing countries, may provide incentives for conservation and sustainable use of important habitats, and can strengthen local economies.

However, guidance for industry, collectors and other stakeholders on sustainable sourcing practices is urgently needed. A project implemented by the Medicinal Plant Specialist Group (MPSG) through IUCN-Canada, and by WWF Germany and TRAFFIC-Europe-Germany, aims to develop an international standard that will bridge the gap between existing but mostly abstract guidelines and management plans developed for specific local conditions. The International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP), with funding approved from the German Federal Agency for Nature Conservation (BfN), will offer stakeholders a list of criteria, indicators and verifiers that will enable them to prove the sustainability of wild-collected plant material. ISSC-MAP covers social and economic factors, but clearly focuses on ecological aspects addressing two important aspects that are often left aside: the need for resource assessments and the question of annual sustained yields. The development of the ISSC-MAP builds on existing principles, guidelines, and standards for sustainable forest practices, organic production and good agricultural practices, fair trade, and product quality.

An international advisory group for the project has been established bringing together the medicinal plant/herbal products industry, small-scale collection enterprises, non-government organizations, conservation and certification organizations. The group met on the Isle of Vilm, Germany, in December 2004, to revise a first draft of the standard. A second draft and other documents related to the project are available on <http://www.floraweb.de/map-pro>. The standard is being tested in several field projects with effect from October 2005.

Comments on the current draft of the ISSC-MAP can be made to MAP-Standards-Criteria@wwf.de; further drafts will follow and can be viewed at the project website.

Susanne Honnef, TRAFFIC Europe

DOES YOUR FALCON HAVE A PASSPORT?



XAVIER EICHER

FALCONS are culturally important birds in the Middle East. The Bedouin people of the past used falcons to hunt game; today, although it is no longer used of necessity, the falcon is still an integral part of Arab lifestyle and tradition. The Arabian Peninsula is one of the last places in the world where falconry remains a widespread traditional sporting activity.

The sport of falconry is a very old one; the Arabs have practised it from very early times and possibly as long ago as the eighth century BC. The Arabian Gulf States and Saudi Arabia have one of the world's longest traditions of falconry. The practice of trapping passage falcons has existed for centuries and has proved sustainable until recent years. Recently, falcon populations have declined due to a variety of causes, including over-trapping.

Because certain falcon species are getting increasingly rare in the wild, illegal and uncontrolled trade in those species has heightened and become more profitable. More and more smugglers target the Saker Falcon *Falco cherrug* (CITES II), Gyr Falcon *Falco rusticolus* and Peregrine Falcon *Falco peregrinus* (both CITES I), the most commonly used birds in falconry. The secretive nature of illegal trade makes it very difficult to quantify accurately, but it is safe to say that these are some of the most targeted falcon species for this black-market trade.

In the hope of dramatically reducing illegal trade in falcons, a passport scheme was launched in the United Arab Emirates (UAE) in 2002 in an attempt to regulate falconry and falcon trade so that it complies with CITES requirements and to ensure legal trade regulations are in place. In order to qualify for a passport, all birds must

< A FALCONER WITH HIS SAKER FALCON *FALCO CHERRUG*.
FALCONRY IS CONSIDERED A SPORT OF THE ELITE IN THE
MIDDLE EAST.

be registered in the UAE. The birds must be legally obtained/imported into the UAE and accompanied by all necessary permits, especially CITES documents, in order to qualify for a passport.

The UAE CITES Management Authorities are responsible for registering the falcons and issuing the passports. Once registration has taken place, a falcon passport can then be issued for the sole purpose of cross-border movement.

The falcon registration forms are available at the Abu Dhabi Falcon Hospital, which is the only hospital in the UAE entirely dedicated to treating falcons that have been injured or are in poor health. It is the only hospital authorized to issue falcon passports. In Dubai and the Northern Emirates, the passports are issued directly by the Ministry of Agriculture & Fisheries (the CITES Management Authority for Dubai and Northern Emirates).

The registration form must include the contact details of the owner, specify the sex and breed of the bird, the country of origin, and whether it is captive bred or wild; the CITES Appendix the bird is listed under and the relevant CITES documents are also required. The falcon owner must present the live bird, the expired passport (if not registering for the first time) and the required Dhs.100 (USD27) registration fee during registration. After the registration process is complete, the passport is issued with the aforementioned information, registration and expiry dates, the place of registration and the CITES listing of the bird; a government ring and a Passive Induced Transponder (PIT) are also issued.

Each passport is given an expiry date which is three years after registration. The falcons will then need to be re-registered and a new passport issued to maintain the bird's legal status. Currently, the falcon passport is accepted only by a limited number of countries. It is up to each country (whether a CITES Party or non-Party) to decide if it will accept the falcon passport or require the standard CITES permits only. It is hoped that more countries will accept this system in time. As with most legal systems, the falcon passport system is a process that is in need of regular review and revision. It will need to be updated periodically to maintain its integrity within the international arena as well as to remain focused on the legal regulations of the falcon trade. The intention of the falcon passport is to provide a legal structure that complies with CITES, but at the same time is easy to use and provides falconers with a lawful way to participate in the traditional sport of falconry.

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GREENLAND SPECIES UNDER REVIEW

WWF Denmark has followed its report on Greenland's international wildlife obligations, published in 2003 (see *TRAFFIC Bulletin* 20(1):17-20) with a report that focuses on the management of four species in Greenland that are of conservation concern: Polar Bear *Ursus maritimus* (CITES II), Walrus *Odobenus rosmarus* (CITES III), Narwhal *Monodon monoceros* (CITES II) and Beluga *Delphinapterus leucas* (CITES II). The report, entitled *The Big Four*, asks two important questions: how has Greenland's Home Rule Government met the challenge of halting the declining populations of these four species; and, has implementation of CITES, and other environmental treaties such as Ramsar and the Convention on Biological Diversity, improved?

It is clear that Greenland has taken several important initiatives to meet these two objectives. In December 2003, the Home Rule parliament approved a nature protection act (*Landsting Act No. 29 of 18 December 2003 on the Protection of Nature*) which provides a framework to allow for better regulation of trade in species protected in Greenland, including some species that are covered by CITES; and, during 2004, two executive orders were approved by the Home Rule Government which, respectively, improves the legal protection of certain bird species, Narwhal and Beluga; and, fully implements CITES in Greenland.

However, research by the author has shown that there are still serious gaps in nature management on the world's largest island. Hunting of Polar Bears and Walrus in Greenland is poorly regulated and there are indications that the populations of both species on the western coast are seriously overhunted. However, population data are scarce and therefore most population data and recommended harvest levels are necessarily "guesstimates". Consequently, the real effect of the current hunting levels in western Greenland (see Tables 1 and 2) is not known. The hunting of Polar Bears is of particular concern, since the increased hunting levels during the last four to five years could be a result of the bears' response to climatic changes, whereby decreasing sea ice-cover is forcing the bears towards the coasts where contact with hunters is more frequent than inland. Improved protection of Polar Bears and Walrus in Greenland is therefore needed.

Knowledge of the Narwhal and Beluga populations in Greenland is much better. Thus, in 2004 it was possible for the first time to set hunting quotas for western Greenland. Unfortunately, however, the quotas for 2004-2005 were set at a level three times higher than recommended by most biologists. In addition, the reported CITES trade in Narwhal tusks and carved ivory pieces has increased significantly. Better reporting owing to a new permit system, combined with a growth in tourism, has increased the reported export of Narwhals from 255 transactions in 2000 to 1550 in 2003. According to the

WWF report, this level of trade calls for a reassessment of its effect. At its 21st meeting in May, and following on from a WWF recommendation, the CITES Animals Committee included the Narwhal in the Significant Trade Review process - an ongoing review of trade volumes of CITES II-listed species to ensure that trade is not detrimental to the survival of the species. The need for such independent assessment is also underlined by the fact that Greenland has issued and is still issuing CITES permits without any involvement of a CITES Scientific Authority, as required by the Convention.

The reports are available at WWF websites:

The Big Four (2005): http://www.panda.org/about_wwf/where_we_work/arctic/news/news.cfm?uNewsID=20110
Greenland's International Obligations (2003): <http://www.wwf.dk/399000c>

	North	Disco	Central/South	East	Total
2000	62	11	10	76	159
2001	92	4	14	70	180
2002	108	19	13	50	190
2003	200	15	20	43	278
2004 ²	113	21	39	39	210

Table 1. Regional harvest of Polar Bear in Greenland, 2000-2004¹.

¹Updated figures according to the Greenlandic Home Rule Ministry for Fishery and Hunting, March 2005. ²January to September.



WWF-CANON / KEVIN SCHAFER

Population	Current annual human-caused removal ¹	Estimated sustainable harvest ²
North Water and western Greenland	356-379	50 (2%)
Eastern Greenland	12-13	40 (4%)

Table 2. Current average removal and estimated sustainable harvest of Walrus in Greenland. ¹1997-2003 average including losses.

²Witting, L. and Born, E. (2005). An assessment of Greenland walrus populations. *ICES Journal of Marine Science* 62:266-285.

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Bridging the Gap: Linking Timber Trade with Infrastructural Development in Southern Tanzania - Baseline Data Before Completion of Mkapa Bridge. *Simon A.H. Milledge and Bariki K. Kaale.* TRAFFIC East/Southern Africa. May 2005. 119pp.

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Rhino Horn Stockpile Management: Minimum Standards and Best Practices from East and Southern Africa. *Simon Milledge.* TRAFFIC East/Southern Africa. May 2005. 30pp.

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No Oasis: Egyptian Ivory Trade in 2005. *Esmond Martin and Tom Milliken.* TRAFFIC Online Report Series. Report No.10. June 2005. 23pp.

In Full Swing: An Assessment of Trade in Orang-utans and Gibbons on Java and Bali, Indonesia. *Vincent Nijman.* TRAFFIC Southeast Asia. June 2005. 49pp.

Hanging in the Balance: An Assessment of Trade in Orang-utans and Gibbons in Kalimantan, Indonesia. *Vincent Nijman.* TRAFFIC Southeast Asia. September 2005. 44pp.

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DEVIL'S CLAW

HARPAGOPHYTUM SPP.
IN SOUTH AFRICA:

*Conservation and
Livelihoods Issues*

DOMITILLA RAIMONDO,
DAVID NEWTON,
CHRIS FELL,
JOHN DONALDSON
and BARNEY DICKSON

SOUTH AFRICA is the third-largest producer of wild-harvested Devil's Claw *Harpagophytum* sp. after Namibia and Botswana. Devil's Claw is a medicinal plant with analgesic and anti-inflammatory properties used for the treatment of rheumatism and arthritis. It occurs widely in the deep Kalahari sands, predominantly in Namibia, Botswana and South Africa. The harvested plant parts are non-vegetative secondary storage tubers. To determine the sustainability of the Devil's Claw trade in South Africa and provide policy recommendations, the biological status (distribution and abundance), socio-economics and trade impacts were researched. The species receives patchy protection under provincial legislation, which generally requires permits for harvesting and processing. The resource occurs in five provinces but is most abundant in the North West and Northern Cape. Harvesting takes place almost entirely on communal lands of the North West Province and is conducted by around 2000 registered harvesters, although illegal harvesting also occurs. Harvesters are predominantly Tswana-speaking rural women, with few other livelihood options. Dried sliced tuber product is sold to middlemen who supply the international trade. Prices fluctuate between USD0.49 and USD2.33 per kilogramme depending on international demand and exchange rates. At current production levels the species is not threatened and trade at current national levels is considered sustainable. Over-exploitation at village level, however, has been observed, and long-term monitoring of areas harvested and improved training, especially of currently unregistered harvesters, is recommended.

BACKGROUND

Harpagophytum (Pedaliaceae), commonly known as Devil's Claw or Grapple, is a genus of herbaceous perennial plants that occurs in Angola, Botswana, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe (Ihlenfeldt and Hartman, 1970). The plants produce characteristic fruits, comprising a flattened woody capsule with spiny appendages, which give the plant its common names. Creeping stems sprout annually from a primary tuber (Hachfeld, 1999), which in turn gives rise to several secondary storage tubers that lack vegetative buds. The secondary tubers are harvested for their analgesic and anti-inflammatory medicinal properties. Unlike in some areas in Namibia, where the primary tuber is left in the ground during the harvesting of the secondary tubers, in South Africa the primary root-stock tuber is removed during harvesting and either replanted to facilitate regeneration and repeat cropping, or allowed to die.

There are two species of Devil's Claw, *Harpagophytum procumbens* and *Harpagophytum zeyheri*. Up until 2002, only *H. procumbens* was registered for medicinal use in Europe, where it is used to treat mainly arthritis and rheumatism (Hachfeld, 2003), and is the main species actively harvested for international

trade. However, *H. zeyheri* has recently been registered for pharmaceutical use and it is expected that there will be a demand for both species (Kathe *et al.*, 2003).

The medicinal properties of Devil's Claw were discovered by the San people of the Kalahari and the plants have a long history of use by local people (Matlahare, 2002). A German trader, G.H. Mehnert, learned of the medicinal properties of *H. procumbens* from the San and Nama peoples in Namibia and first made these uses known in 1904. Dried tubers were initially exported to Germany in small quantities (Hachfeld, 2003; Nott, 1986) but large-scale export of *H. procumbens* started in 1962, predominantly from Botswana and Namibia (Nott, 1986).

Namibia is, at present, the world's largest producer of Devil's Claw. Annual exports reported from Namibia reached 1000 t in 2003, equivalent to over 90% of the total reported international trade (Cole, 2003). The combined export of Devil's Claw from Botswana, Namibia, and South Africa to Europe increased substantially from 265 t in 1999 to 459 t and 492 t in 2000 and 2001, respectively (Schippmann, 2001). This rise in exports led to concern from some importing countries regarding the sustainability of the trade and, in 2000, at the 11th meeting of the Conference of the Parties to CITES (CoP11), the Government of Germany proposed listing *Harpagophytum* spp. in CITES Appendix II. The proposal was subsequently withdrawn, mainly on account of opposition from range States who wanted more time to gather relevant data on the plant's biological status and on the impact of trade on wild populations. Opposition was also based upon the perception that a CITES listing would have a negative effect on the livelihoods of thousands of Devil's Claw harvesters who are some of the poorest and most marginalized people in southern Africa.

At CoP11, the CITES Plants Committee was instructed to gather biological and trade data on Devil's Claw from range States and prepare an assessment report. However, the report submitted to Parties at the 12th meeting of the Conference of the Parties in 2002 highlighted the lack of information available on the situation in South Africa, Namibia and Botswana. Range States were requested to submit additional information on the status and regulation of Devil's Claw trade to the 14th meeting of the CITES Plants Committee in February 2004. Partly to meet this request, the Government of South Africa obtained funding from the Whitley Laing Foundation for International Nature Conservation to conduct a detailed assessment of the Devil's Claw trade in South Africa between June 2002 and February 2003.

The assessment had the following objectives:

1. to determine the distribution and abundance of Devil's Claw in South Africa;
2. to estimate the amount of Devil's Claw currently being harvested in South Africa;
3. to obtain socio-economic information pertaining to Devil's Claw harvesting and trade in South Africa, such as which South Africans are harvesting the plant, and what role it plays in their livelihoods;

4. to establish whether the Devil's Claw trade in South Africa is being conducted on a sustainable basis.
5. to develop policy recommendations for sustainable trade.

The results of this assessment are presented in this paper.

INTRODUCTION

Trade in Devil's Claw in South Africa commenced in the 1970s with a limited period of harvest from the Mier area of the Northern Cape (NC) (Powell and Moolman, 2000). The importance of North West Province (NW) as a source of Devil's Claw has increased in recent years. In 2001, Devil's Claw harvested predominantly in the communal areas of NW made up three per cent of total exports from southern Africa, but this increased to 10% in 2002. The surge in production during 2002 was caused by an increase in registered harvesters to 2381, located in 105 villages (van der Vyfer, pers. comm., 2002). In 2003 and 2004, this number had declined to 2163 (van der Vyfer, pers. comm., 2005). In comparison, in Botswana there are approximately 30 villages and 900 harvesters involved in the trade, and in Namibia harvesting is estimated to be the sole source of cash income for between 10 000 and 15 000 marginalized rural families (Cole, 2003; Lombard and du Plessis, 2003).

In South Africa, the majority of Devil's Claw harvesting takes place in communal lands of the former homeland Bophuthatswana, now part of NW. This is the area in which the local conservation agency North West Department of Agriculture Conservation and Environment (NWDACE) has initiated a Devil's Claw Harvesting Project, which aims to train harvesters in sustainable harvest techniques, monitor populations and recovery rates to avoid over-exploitation, and to facilitate the sale of Devil's Claw to buyers. NWDACE initiated this project in communal areas because Devil's Claw harvesting provides an opportunity for the generation of cash income where few other sources of cash income are available. Livestock production, mainly for subsistence, has historically been the only livelihood option.

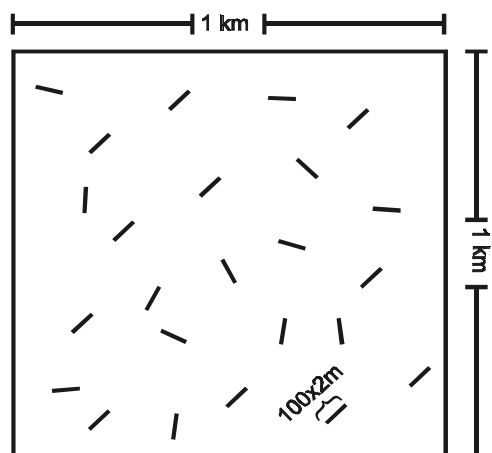


Figure 1. Design of a one square kilometre research site showing the random distribution of the 24 linear transects of 100 m x 2 m.

METHODS

Legislation and policy

Legislation and policy relevant to the South African trade in Devil's Claw was identified and analysed.

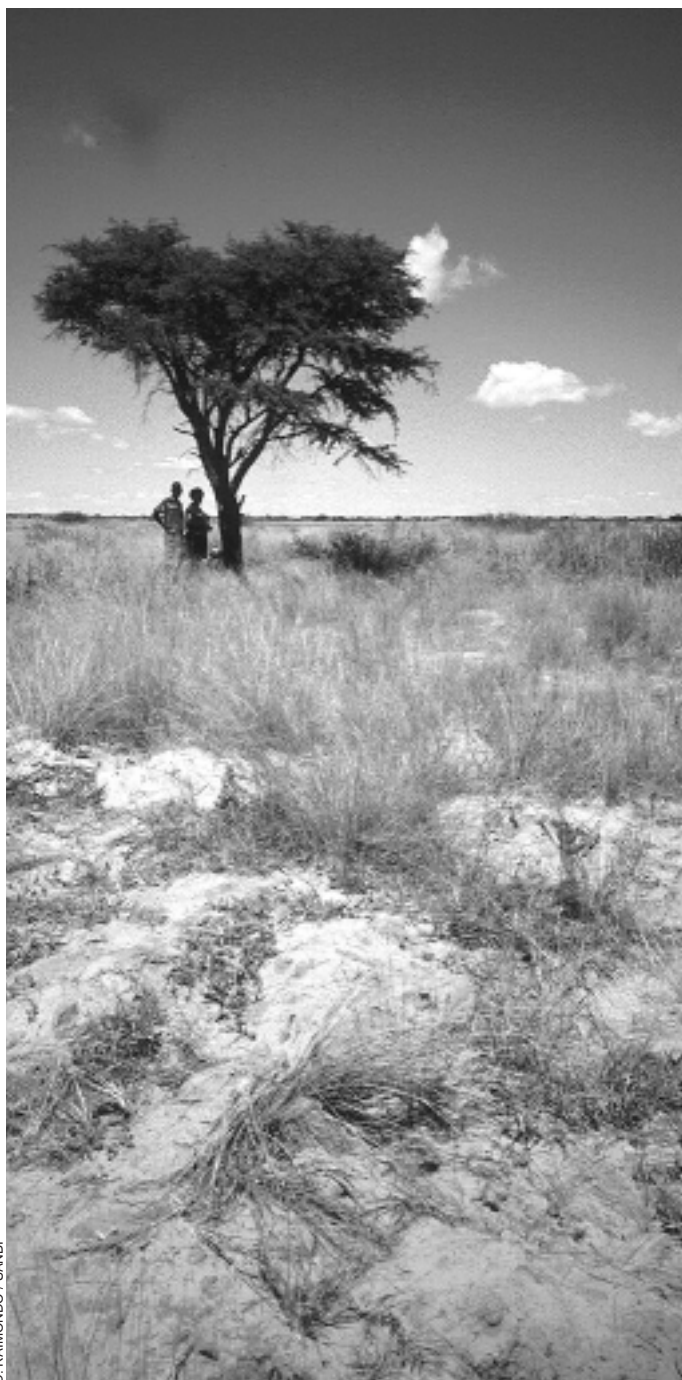
Distribution and abundance of Devil's Claw in South Africa

The overall distribution of the two *Harpagophytum* species in South Africa, together with estimates of abundance, were obtained from field surveys in Limpopo (LP), North West (NW) and Northern Cape (NC) provinces. A total of 58 new sites were sampled across South Africa as part of this study. Previous fieldwork by Hachfeld (2003), conducted between 2000 and 2002, provided additional population data on *H. procumbens* for specific sites in the NW and NC and provided a basis for the further fieldwork. Survey sites were chosen using Geographical Information System (GIS) overlays of known distribution, soil types and vegetation types based on the vegetation map of South Africa (Rutherford and Rebelo, in prep.). This ensured that sites were evenly spread across the potential distribution area of *H. procumbens* and that they complemented the existing information obtained by Hachfeld (2003).

Surveys were conducted in NW and NC using the same methodology used by Hachfeld (2003). This involved surveying an area of one square kilometre. Thirty nine, one kilometre square plots were sampled and combined with the data from 46 plots sampled by Hachfeld. To determine the abundance of individual plants, the number of Devil's Claw plants were counted along transects measuring 100 m long and two metres wide. Twenty-four transects were randomly placed within each square kilometre site (Figure 1). The square kilometre plots were located in all vegetation types containing deep Kalahari sands, the specific habitat for Devil's Claw (Rutherford and Rebelo, in prep.). Transects walked within each plot were of the exact layout shown in Figure 1.

Geographic Positioning System (GPS) co-ordinates were taken at the beginning and the end of each 100 m transect. This was done to allow re-sampling in the future. The number of plants per transect was counted and the total number of plants for the 24 transects at each square kilometre site was used to determine average plant density by calculating the number of plants per hectare (ha). Sites were allocated into one of three abundance range categories: rare (1-199 plants per ha); common (200 to 499 plants per ha); and, abundant (>500 individuals per ha). This methodology provided information on the resource status and also established a baseline against which the results of future resource surveys can be compared.

Limited time and field resources meant that Hachfeld's detailed sampling methodology could not be used at all sites. In LP, plant populations per hectare were estimated by counting a small area of 250 square metres,



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DEVIL'S CLAW PLANTS GROWING IN TYPICAL HABITAT,
ACACIA SAVANNA SANDVELD IN NORTH WEST PROVINCE,
SOUTH AFRICA.

then extrapolating to estimate the population density for the hectare. Nineteen sites were sampled using this method.

Records of absence were also noted, especially for areas near the edge of the species distribution and for areas with suitable habitat where one would expect to find plants. These were included in the data set and used to help determine the plant's distribution range.

Socio-economic review of the Devil's Claw trade in South Africa

Socio-economic information, including the role Devil's Claw trade and harvest plays in people's livelihoods, was obtained through interviews in and around the villages of Cassel, Deaar, Eiffel, Ganyesa, Heuningvlei, Morokweng and Tlhakgameng. Formal interviews were only conducted in NW, as this is where the majority of the harvesting takes place. A total of 13 interviews involving 29 people were conducted with a range of local people involved in the harvesting and trade in Devil's Claw. Of the 13 interviews, six were group interviews, with numbers of the group varying between two and five people. Group interviews were conducted to allow a larger number of people to participate.

Three types of interview were conducted: one aimed at the harvesters, a second for tribal authorities to gain information on village/community-level issues, such as land tenure and the forms of income for local people, and a third for conservation authority representatives. Harvesters were selected using a 'networking method', whereby the tribal authority representatives and other harvesters indicated which people, over the widest cross-section of harvesters (i.e. harvesters of different gender and ages who had been harvesting Devil's Claw for differing amounts of time), should be interviewed. All interviews were conducted in the local language, Tswana.

Owing to the non-commercial, small-scale harvesting of Devil's Claw in NC and LP, socio-economic information regarding harvesting in these two provinces was obtained by means of informal discussions with people such as local community members, conservation authorities and local botanists.

Sustainability of harvesting in South Africa

Sustainability of harvesting in South Africa was investigated at the national and local level. All available data regarding harvesting were obtained from field observations and provincial departments of nature conservation for NW and NC. These data included, amongst others, harvest rates, determination of dry weights, the number of tonnes of material exported each year, the numbers of registered harvesters and the price paid per kilogramme to harvesters, and were analysed to determine trends in trade.

Estimating the number of Devil's Claw plants harvested

In order to determine what impact harvesting is having on the South African resource, the total number of plants currently harvested in South Africa was estimated in two ways:

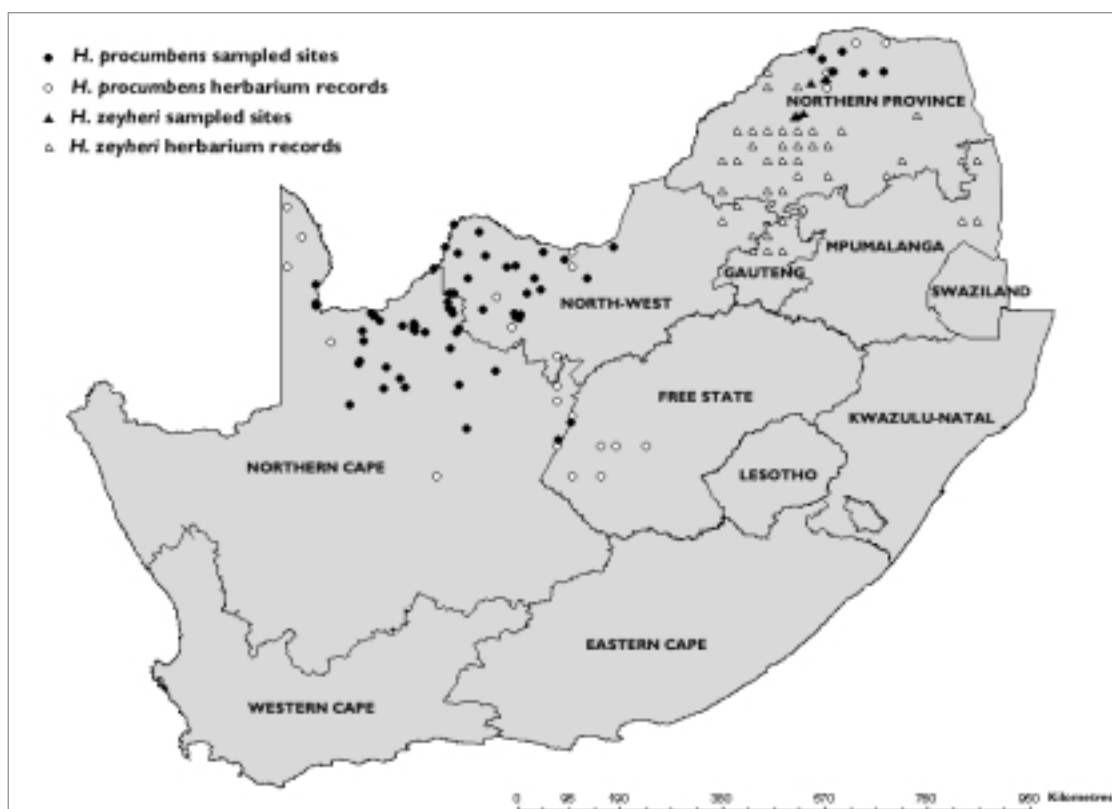


Figure 2. Distribution of the genus *Harpagophytum* in South Africa.

(Herbarium records are taken from the PRECIS database and are accurate to quarter degrees while sampled sites are accurate to 10 m.)

1) Average Harvest Rate technique: Estimated by determining the total amount of time harvesters spent harvesting in a season and dividing it by the average time taken to harvest one plant. Twenty-nine harvesters were questioned over a period of a few days as to the number of hours spent per day in the field, the number of harvesting days per month and the number of harvesting months per year, to give a total average harvest time per person per season. Monitoring nine harvesters at work allowed determination of the average time required to harvest a single plant. The harvesters were not aware that they were being monitored.

2) Dry Weight Export technique: Estimated by taking the total weight of Devil's Claw material reported as exported per year and dividing it by the average dry weight of each plant harvested. Export data were obtained from Provincial Nature Conservation records. The average weight harvested per plant was determined by harvesting 21 plants in the field, slicing and drying the tubers, as would be done for exporting, and then taking the average weight of the dried sliced tubers for one plant. All the plants were sampled from the same general area, at the same time, by a group of three people. When comparing observations of harvesting of Devil's Claw in other parts of the country, the number of tubers harvested per plant did not differ markedly and it is therefore considered likely that this sample survey is representative of other harvesting sites in South Africa.

Sustainability of village-level harvesting

To determine sustainability of harvesting of particular Devil's Claw populations, a pilot study was carried out in eight villages in NW. At each village, the density of the resource was determined by carrying out the resource sampling technique described earlier. In addition, at each village, a site that had been harvested during the previous growing season was visited and the number of plants that had recovered after harvesting was counted. In most areas, it was easy to determine where a plant had been harvested as the surrounding vegetation is cleared during harvesting, leaving a clear patch on the ground. Typically, a small depression is also found where harvesting has taken place.

Harvesters were asked a series of questions to identify reasons for the different levels of population recovery observed:

- Did the harvesters work in groups or alone?
- Was the area around the village divided into quadrants and only one quadrant harvested in each year?¹
- Who controls access to the harvesting area?
- What harvesting methodology training was received from NWDACE?
- How often did NWDACE officials monitor harvesting activities and/or the harvested area?

¹ The quadrant system has been proposed by van der Vyfer (2001) as a method for ensuring sustainable harvesting through dividing a potential harvest area into four and harvesting one quadrant each year. This results in any particular area only being harvested once every four years.

RESULTS

Legislation and policy

Plant species identified as requiring legal protection in South Africa are listed on schedules attached to various provincial nature conservation department ordinances. Devil's Claw is specifically protected in terms of the Northern Cape's *Nature and Environmental Conservation Ordinance 19* of 1974 and in NW by the *Transvaal Nature Conservation Ordinance 12* of 1983, but is not specifically protected in any of the remaining seven provinces. The new *National Environmental Management Biodiversity Act* of 2004 makes provision for a National List of species requiring protection. Although Devil's Claw has been recommended for inclusion, at the time of going to press the list had yet to be enacted and control of Devil's Claw harvest and trade remains with the provincial legislation mentioned above.

Legislative protection for Devil's Claw in NW is confusing because the province comprises land from two now defunct former provinces (namely, Cape Province and Transvaal Province), and the former homeland Bophuthatswana. Of these, only Transvaal Province had legislation (*Transvaal Nature Conservation Ordinance 12* of 1983) governing Devil's Claw harvest while the Cape Province and Bophuthatswana did not. These laws remained in effect following changes in administrative designations. Most harvesting currently occurs in communal areas formerly part of Bophuthatswana and hence is not covered by legislation regulating harvest and trade. To remedy the lack of control, NWDACE created the Devil's Claw Harvesting Project that imposes a management system, including permits and harvest controls, on harvesters. The permits limit the sale of Devil's Claw plants, parts and derivatives to registered harvesters possessing an identification (ID) card. The ID cards are valid for one year and only issued to harvesters who participate in a sustainable harvest training course incorporating sustainable management techniques, for instance rotation harvesting (van der Vyfer, 2001).

Permits issued by Northern Cape Nature Conservation are required for moving Devil's Claw plant parts across provincial boundaries, collecting, exporting or importing, growing, and trading in Devil's Claw. These requirements are stipulated in terms of a proclamation ("Protection Status and Wildcrafted Harvesting of Devil's Claw, Government Gazette 802-22/09/03") issued in terms of the *Cape Nature and Environmental Ordinance 19* of 1974.

Stakeholders from all three range States that export Devil's Claw have recognized the need for regional collaboration and, in February 2002, the national Devil's Claw Working Group of Namibia hosted a regional Devil's Claw conference in Windhoek. The conference included stakeholders from all sectors of the Devil's Claw trade and resulted in the development of an action plan including aspects of conservation, sustainable trade and agreement to establish a national Devil's Claw

Working Group in South Africa and Botswana and a regional Devil's Claw Working Group (Anon., 2002). South Africa established a national Devil's Claw Working Group in 2003 and participates in annual meetings of the regional Devil's Claw Working Group, both of which address conservation and trade matters relating to Devil's Claw.

Distribution and abundance of Devil's Claw in South Africa

In South Africa, *Harpagophytum zeyheri* occurs in the eastern parts of NW, in areas of LP south of the Soutpansberg mountain range, in the northern parts of Mpumalanga Province and in Gauteng Province (Figure 2). This species has an estimated range of 72 000 km².

Harpagophytum procumbens has a larger, but disjunct distribution, and is found in the north-eastern parts of NC and the central and southern parts of NW, an estimated area of 229 618 km². It also occurs in the northern parts of LP in an area estimated to be 8267 km² and in north-west Free State Province (Figure 2). Unlike in Namibia and Botswana, ranges of *H. procumbens* and *H. zeyheri* in South Africa do not appear to overlap and it would appear that *H. zeyheri* is confined to areas of higher rainfall.



HARVESTING DEVIL'S CLAW TUBERS IN CASSEL VILLAGE, NORTH WEST PROVINCE.

D. NEWTON / TRAFFIC

Both species of *Harpagophytum* typically occur in clumped populations and their distribution is patchy, even within homogeneous habitats. This distribution pattern makes it impossible to predict the total population size for either species (Hachfeld, 2003). The methodology used did, however, allow for the determination of areas of resource concentration. *Harpagophytum procumbens* occurs most densely in the communal areas of NW and along the eastern border of NC. Hachfeld (2003) showed that land use affects the density of *Harpagophytum* plants and that high grazing pressure typically found in communally owned areas favours their occurrence. Although this could be one explanation for the high concentration of plants in the communal areas of NW, the high concentration of plants on surrounding private farms which typically have lower grazing pressure, especially along the eastern border of the NC, suggests rather that this area has natural conditions that favour *Harpagophytum* and that it is the centre of this species' range in South Africa (Ihlenfeldt and Hartman, 1970). In LP, populations of *H. procumbens* are small and disjunct, probably due to the scarcity of deep, free-draining soils suitable for *Harpagophytum*. The communally owned areas of LP, such as parts of the former Venda homeland, had few populations of *Harpagophytum*, unlike the communal areas of NW. The likely causes for this are unsuitable soil types and habitat transformation for agriculture. Only six populations of *H. zeyheri* were sampled in South Africa. Thus it is not possible to make conclusive statements about the areas of resource concentration for this species, however it appears that populations of *H. zeyheri* in LP contain higher numbers of individuals on average than populations of *H. procumbens*.

There is little or no potential for commercial harvesting of *H. procumbens* in LP, as, based on existing information, populations are too small and dispersed to make harvesting economically viable. In addition, populations do not occur abundantly in communal areas, where the additional sources of income derived from Devil's Claw harvesting would be most beneficial to the livelihoods of the local people.

The majority of areas in NC where *H. procumbens* occurs are not suitable for harvesting, as population numbers are too low. The *H. procumbens* resource is, however, abundant enough for harvesting to take place in the eastern parts of NC, specifically around the towns of Kathu, Dibeng, Hotazel and Blackrock.

Similarly, populations are abundant on privately owned farms in NW around Piet Plessis and Tosca. Currently few private farm owners appear to express an interest in harvesting Devil's Claw in South Africa, this based on the fact that only a single farmer has applied for permits to harvest on his lands. Attitudes towards harvesting on private land could change in the future however, as has already happened in Namibia where many private landowners harvest Devil's Claw in an *ad hoc* fashion to supplement income earned from livestock farming (Raimondo, pers. obs.).



M. BAUER / GmbH

Socio-economic review of the Devil's Claw trade in South Africa

North West Province

Harvester composition and logistics of harvesting

The total number of harvesters active in the province is currently estimated at between 2400 and 2800. The majority (95%) of harvesters interviewed have only been involved in Devil's Claw harvesting and trade for the last two or three years since NWDACE initiated its project. Many harvesters were not previously aware of the medicinal properties of the plant and most considered the plant a weed.

Interview results revealed that approximately 83% of all harvesters in the province are Tswana. Exceptions occur where people have moved from other areas of South Africa. There are still a few San involved in harvesting.

The majority of harvesters interviewed in NW are between the ages of 40 and 60. Younger people do not harvest because they often work on farms and in the urban centres of the province. The majority, an estimated 85-90%, of harvesters are female. Males are less involved in harvesting as the harvest of natural resources is traditionally regarded as the realm of women. In addition, men typically seek employment in urban areas.

At the end of 2002 there were 2381 trained and registered harvesters in NW (Table 1). Although the number of registered harvesters almost doubled between 2000 and 2004, there was a decline in their number from 2381 in 2001/2002 to 2163 in 2002/2003, with no change in 2003/2004. The recent decline was reportedly due to the effects of the strong South African Rand (ZAR) that led to lower levels of income to harvester communities compared to previous years.



D. NEWTON / TRAFFIC

DRIED SLICED DEVIL'S CLAW TUBERS

	2000/2001 ¹ (USD)	2001/2002 ² (USD)	2002/2003 ³ (USD)	2003/2004 ⁴ (USD)
Total number of harvesters	1233	2381	2163	2163
Total number of villages	85	105	105	105
Total wet weight (kg)	10 904	9812	No data	No data
Total dry weight (kg)	14 780	88 744	97 349	25 850
Total weight (kg)	16 397	90 199	97 349	25 850
Average wet price/kg paid to harvester	0.77 (0.09)	2.26 (0.22)	No data	No data
Average price/kg for wet weight paid to tribal authority	0.09 (0.01)	0.10 (0.01)	0.10 (0.01)	0.10 (0.02)
Average price/kg for dry weight paid to harvester	8.22 (0.94)	18.77 (1.79)	16.45 (2.16)	15.00 (2.33)
Average price/kg for dry weight paid to tribal authority	0.48 (0.06)	0.50 (0.05)	0.50 (0.07)	0.50 (0.08)
Total income to harvesters	133 688 (15 340)	1 799 689 (171 246)	1 624 326 (212 909)	174 936.75 (27 186)
Total income to tribal authorities	8054 (924)	45 313 (4312)	48 674.50 (6380)	5831.23 (906)
Average income earned per harvester per season	108 (12)	783 (75)	751 (98)	81 (13)
Average income earned per tribal authority	95 (11)	432 (41)	464 (61)	56 (9)
Total Income (Total earned by harvesters and tribal authorities)	141 743 (16 264)	1 845 003 (175 557)	1 673 001 (219 289)	180 767 (28 092)

Table 1. NW provincial records detailing Devil's Claw harvester numbers, harvest volumes and values in South African Rand (and US dollars in parentheses) for the seasons 2000/2001 through 2003/2004.

Trade data from NWDACE (van der Vyfer, pers. comm., 2001; van der Vyfer, pers. comm., 2005)

¹2000/2001 exchange rate ZAR8.72:USD1

²2001/2002 exchange rate ZAR10.51:USD1

³2002/2003 exchange rate ZAR7.63:USD1

⁴2003/2004 exchange rate ZAR6.44:USD1

A small amount of illegal harvesting takes place in villages where NWDACE has not set up its Devil's Claw Harvesting Project. In these locations people harvest for their own use and for sale to surrounding communities. Based on this research, it was estimated that there are between 300 and 600 people harvesting Devil's Claw without being registered with NWDACE.

It is also clear that the number of harvesters cannot be allowed to increase indiscriminately as localized over-use of the resource has been detected in some areas. Thus it may be necessary either to introduce a harvest quota or cap the number of harvesters receiving accreditation.

Devil's Claw harvesters in NW typically have large families, with as many as 12 people living in a household. On average, there are six people per household - three adults and three children. Larger households frequently have two family members registered as harvesters.

The majority of harvesters travel between one and five kilometres on foot to the area where Devil's Claw is harvested. The longest distance reported was 10 kilometres. The average time spent travelling to harvesting sites was between 30 minutes and one hour, with about 25% of harvesters taking between one and two hours.

Most harvesters work individually, carrying out all aspects of the harvesting by themselves. At five of the villages, harvesters travel to harvesting sites in groups, even though they may work individually. Group harvesting occurs because it is a social activity, allowing people to interact as they work, and because conservation officials have instructed certain villages to harvest in groups

with the reasoning that harvesters can monitor each other, ensuring plants are harvested correctly, according to NWDACE training. Where people harvest in groups, group sizes tend to vary between six and ten people and harvesting tasks are divided between the different group members. Profits from the sale of dried tubers are shared equally among group members.

Livelihood options for rural communities in NW

Livelihood options in NW are limited as the climate is harsh, with temperatures up to 42 degrees Celsius in the summer months and low rainfall. This, along with poor quality soils, impedes agricultural activities. In addition, the majority of the communal areas within NW, where Devil's Claw harvesting now takes place, were part of the former homeland Bophuthatswana. Thus, the area has received relatively little development assistance and poverty levels remain high. Local government, charged with the development of the homelands, was only introduced to these areas after the 1994 elections and has not thus far changed the status quo. Traditional authorities (i.e. tribal chiefs and their advisors) retain power over land and natural resource use. The roles and functions of local government and tribal authorities and how these institutions interact, are still in the process of being clarified at a national level. It is clear that the political history of South Africa has contributed significantly to the current socio-economic situation of rural communities living in NW.

From this research it appears that all the land where Devil's Claw is harvested in South Africa is communally owned and overseen by the local tribal chiefs. Each chief designates different land uses to community members. The main forms of land use include livestock grazing with goats, sheep, cattle and donkeys. Crops such as maize, beans and watermelon are also grown on more productive lands; however, due to low rainfall they are reported to make a minimal contribution to livelihoods.

Harvesters indicated that they have limited alternative livelihood options and sources of income owing to the harsh climate and their distance from urban centres. Over half of the harvesters interviewed said that they depend solely on Devil's Claw to provide them with a source of cash income. Four interviewees indicated that they also sell livestock such as cows or goats for additional income. For the older members of the community (i.e. above 60 years old), pensions play a prominent role in supporting whole families. Four of the interviewees reported that additional income was gained from their monthly pensions. The growing and selling of crops does not seem to be practised much in the communal lands of NW, and only one interviewee indicated that she makes money from the sale of vegetables that she grows.

The harvesting of Devil's Claw provides seasonal income. Seven of the 29 harvesters interviewed reported that in winter months, generally from May until October, they obtain cash income through part-time work on private farms, typically harvesting commercial agricultural crops such as maize or grapes. All seven harvesters indicated that Devil's Claw harvesting provided better financial reward than part-time work on private farms. Three of the interviewees increased their cash income by running micro-enterprises, such as selling biscuits and fruit to other community members.

Devil's Claw is not cultivated in NW by individual families, however during 2003 a communal project to cultivate plants was initiated in two villages as part of the NWDACE Devils Claw project. The economic viability of communal cultivation has yet to be established.

Benefits accruing to harvesters and the community from the NWDACE Devil's Claw Project

Annual earnings for registered harvesters of Devil's Claw in NW range from ZAR108 (USD12) to ZAR783 (USD75). Although this income was reportedly very low, it is nonetheless extremely important in terms of harvesters' livelihoods.

Nearly all of the harvesters interviewed indicated that they keep the proceeds from the Devil's Claw harvesting and personally decide how the money is spent. All interviewees stated that they mainly buy food but also use the money for school fees and two reported spending some on transport. Interviewees also buy tobacco, medicines, electricity and clothes/shoes.

The heavy dependence on income from Devil's Claw makes harvesters vulnerable to price fluctuations. All harvesters in the field were unaware of the reason for price fluctuations, whether caused by exchange rate fluctuations or under-payment by traders. Despite NWDACE management of the trade, exploitation by middlemen does occur; for example in one village where interviews were conducted, harvesters have been paid as little as ZAR1 per kg of dried Devil's Claw material compared to the going rate of ZAR15.

Limpopo Province

Very little harvesting appears to be taking place in LP. Around 50 traditional healers appear to be the sole harvesters of the plant in the province.

Northern Cape Province

There are few communal areas in NC and the majority of the people indigenous to this area, namely Tswana, San or persons of mixed descent, are labourers who work in the towns or on private game or stock farms. Typically, the natural vegetation on these farms is still largely intact. All of the 15 labourers met during this

THE HARVESTING AND PROCESSING OF DEVIL'S CLAW *HARPAGOPHYTUM PROCUMBENS*



FROM LEFT:
DEVIL'S CLAW PLANT;
DEVIL'S CLAW FRUIT;
DIGGING FOR THE SECONDARY
TUBERS, NEAR CASSEL
VILLAGE, NORTH WEST
PROVINCE.



study were familiar with *H. procumbens* and said that they harvested the plant from wild *veld* (elevated open grassland) to use locally as medicines. None reported selling Devil's Claw to generate income. It thus seems unlikely that Devil's Claw is harvested commercially in NC. The exact number of subsistence harvesters in NC is not known but estimated to be 1500 individuals.

Only one farmer - who also farms stock - was recorded as cultivating Devil's Claw in NC, and, in 2003, employed 32 full-time workers on his Devil's Claw plantations. In comparison, most other farmers in the area who farm stock employ between four and six labourers. The farmer indicated that after four years, his experimental, large-scale cultivation of Devil's Claw was proving uneconomical due to the high labour costs involved in keeping the plantation free of competing plants. Judging from this case, it may prove that large-scale cultivation of Devil's Claw in the Kalahari is not commercially viable and wild harvesting will continue to supply the majority of exported material from South Africa.

Sustainability of harvesting in South Africa

According to official provincial records from NW, between 2001/2002 and 2002/2003 there was an almost two-fold increase in the number of harvesters, a greater than four-fold increase in the amount of Devil's Claw harvested - to 97 349 kg - and a doubling in the wholesale price per kilogramme of dried Devil's Claw (Table 1). However, available data for 2003/2004 indicate a large drop-off in quantity harvested - to 25 850 kg - reportedly caused by harvesters being dissatisfied with the price per kilogramme and a resulting reluctance to harvest the product. The strengthening South African Rand (ZAR) since 2002 and a decrease in competition among buyers as a result of the decline in international demand, has reportedly caused the recent drop in the price paid to harvesters. The average price paid to harvesters and tribal authorities for wet and dry product is provided in Table 1. The demand for dry weight product is higher than that for wet product due to its ease of transport, storage and processing.

Currently the trade chain in South Africa is short. There are only two buyers: one buys directly from registered harvesters and the other buys via middlemen. The chain is not usually longer than one middleman operating between the harvesters and the buyers.

Estimating the number of Devil's Claw plants harvested

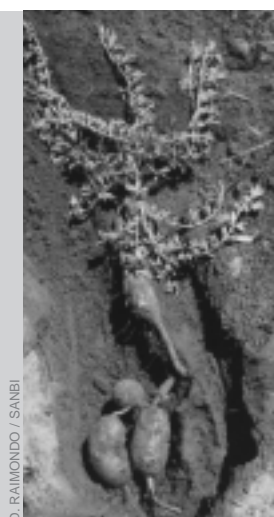
Both techniques provided below are based on extensive extrapolation of harvest data collected for a single period and with small sample sizes that were not repeated in subsequent years. The authors urge caution in the interpretation and further use of these data.

Average Harvest Rate technique:

Harvesters interviewed indicated that they harvested, on average, five hours a day, 18 days a month and six months a year. Based on an analysis of the harvest rates of nine harvesters, a plant takes on average 20 minutes to harvest, which translates to an average harvester rate of 15 plants a day. This average harvest rate was similar to that reported by harvesters during interviews. Using an average of 15 plants a day, the average number of plants harvested per person per season is 1620 plants. Multiplied with the number of registered harvesters (see Table 1) this equates to about 1 997 460 plants harvested in the 2000/2001 season, 3 857 220 in 2001/2002 and 3 504 060 in 2002/2003 and 2003/2004 (Table 2). In light of documented harvest declines during the 2003/2004 season (Table 1), it is clear the latter estimate was inflated by the assumption that all harvesters are equally active during the season.

Total Harvested Weight technique:

A single plant produces an average of six secondary tubers (N=21) which have an average dry weight of 45 g (N=21). Thus, by dividing the average dry weight (45 g) into the total weight of seasonal production (dry weight)



D. RAIMONDO / SANBI



D. RAIMONDO / SANBI

FROM LEFT:

THE SECONDARY TUBERS *IN SITU*;
HARVESTING THE SECONDARY
TUBERS NEAR CASSEL VILLAGE,
NORTH WEST PROVINCE;
SLICED TUBERS DRYING IN THE
SUN, CASSEL VILLAGE,
NORTH WEST PROVINCE.



D. NEWTON / TRAFFIC

Season	No. of harvesters	Total plants harvested
2000/2001	1233	1 997 460
2001/2002	2381	3 857 220
2002/2003	2163	3 504 060
2003/2004	2163	3 504 060

Table 2. Number of plants harvested per season calculated using the harvest rate methodology.

Year	Total weight harvested (kg)	Total plants harvested
2000/2001	16 398	364 500
2001/2002	90 199	2 005 000
2002/2003	97 349	2 163 311
2003/2004	25 850	574 444

Table 3. Number of plants harvested per season calculated using the total harvested weight methodology.

it is possible to determine the approximate number of plants harvested from the wild. Table 3 provides plant harvest estimates for the seasons covered by the period 2000 to 2004.

The two methods of extrapolation give notably different estimates of the number of plants harvested and should be viewed with caution. The harvest rate methodology gives figures about one third higher than that of the export weight methodology. Besides errors introduced by extrapolation, reasons for these differences, may also include:

1. Figures of total weight exported gathered by NWDACE do not represent the total number of plants being harvested. This would further support evidence that some illegal harvesting is occurring. Close inspection of provincial records has shown them to be incomplete. For example, there were no official data for the amount of material exported from the villages of Ganyesa and Morokweng for the 2001/2002 season. However, harvesters from these two villages reported that they did harvest during that period. Furthermore, both villages have high densities of Devil's Claw in their surrounds and a high number of registered harvesters. Thus it may be that the official figure of about 90 000 kg does exclude some illegal and some legal harvest volumes.

2. Harvesters may be overestimating the time spent harvesting thus inflating the figures provided in Table 2.

Assessment of sustainability

Unfortunately, owing to its patchy distribution, it is not possible to determine the total population size of Devil's Claw in South Africa (Hachfeld, 2003). The extrapolated total number of plants that occurred in the 89 individual square kilometre sites surveyed is

2 120 000 plants, a number close to the lower estimate of plants harvested in the 2002/2003 season. The sites sampled are a minute proportion (89 km² or 0.03%) of the total extent of occurrence (310 000 km²) of Devil's Claw. Given the very patchy nature in which Devil's Claw populations have been observed to grow in the wild and the absence of more detailed population data, only a conservative assessment of sustainability is possible. This assessment will have to be revised as more detailed data become available. Allowing for the patchy nature of Devil's Claw distribution within its total extent of occurrence, with measurement of exact Devil's Claw density throughout the landscape beyond the scope of this project, and based on the distances (10 to 50 km) that had to be travelled around pre-selected localities before Devil's Claw populations were located, the researchers estimated that physical Devil's Claw presence was a factor of ten less than the total extent of occurrence of 310 000 km². Hence, it was estimated that 0.2% to 0.3% of the total South African Devil's Claw area was sampled in this research. Based on this, it is estimated that harvesting is currently having an impact on a small proportion of the total South African *H. procumbens* population. Taking into account the finding that an average of 70% of plants harvested were not killed, that the species has a highly persistent seed bank, are ephemeral over time and populations naturally disjunct, it is possible to conclude that the species as a whole is not being threatened by harvesting in South Africa.



NWDACE OFFICIAL WITH HARVESTERS IN CASSEL VILLAGE, NORTH WEST PROVINCE. NWDACE'S DEVIL'S CLAW HARVESTING PROJECT AIMS TO TRAIN HARVESTERS IN SUSTAINABLE HARVEST TECHNIQUES, TO MONITOR POPULATIONS AND RECOVERY RATES TO AVOID OVER-EXPLOITATION, AND TO FACILITATE THE SALE OF DEVIL'S CLAW TO BUYERS.

D. NEWTON / TRAFFIC

In addition, if the IUCN Red-Listing Criteria are applied to the above figures, *Harpagophytum procumbens* in South Africa has too many individuals (greater than 10 000) to qualify as being threatened under Criterion C (small population size and decline), or D (small restricted populations), and it occurs in too large an area (greater than 20 000 square kilometres) to qualify under Criterion B (limited geographic range and decline) or D (limited occupancy). Finally, Criterion A (population reduction over 10 years or three generations), does not apply in light of the high recovery rate of harvested populations and the fact that only a small part of the total population is harvested (Anon., 2001). Despite not qualifying for the IUCN Red List, it is nevertheless clear that harvesting is having a negative impact on some local populations. Indeed, NWDACE has stopped some villages from harvesting owing to a population decline after only two years.

Population recovery after harvesting

Post-harvest plant recovery after one year varies from village to village, ranging from 32% to 80% (Table 4). However, no consistent correlation between high plant recovery and the number of NWDACE monitoring and training visits received was identified by this research. For instance, in Morokweng village approximately 79% of mother tubers recovered post-harvest without a single NWDACE inspection. In contrast, Glenred, having received over 60 visits in a year, showed a lower recovery rate of 52%. A more detailed study using larger sample sizes is required to identify the exact nature of the interaction between plant recovery, training and inspection.

Nevertheless, results show that in some areas further training and closer monitoring are urgently required as current harvesting practices do not appear to be sustainable, e.g. in the villages of Tlhakgameng and Ganyesa.

Monitoring of harvest in villages by NWDACE officials is not uniform (Table 4) and ranges from very little in Ganyesa and Tlhakgameng, to daily or weekly during harvest in villages such as Glenred and Heuningvlei (Table 4). Overall it seems that low level or poor quality monitoring is associated with unsustainable harvest

and it is important for NWDACE to ensure that competent staff check at regular intervals all villages where harvesting takes place.

Training from NWDACE officials also varies greatly from village to village, with 50% of villages interviewed having received only a few hours of training, usually only in a classroom with no field instructions. Researchers noted a geographical difference in training efforts, with villages in the north-eastern areas of NW receiving insufficient training while those in the south-western parts received good training. Different officials carried out training in these villages and results show that in some areas the officials have been ineffective at transferring skills.

Although every village is supposed to harvest in quadrants around the village, only three of the eight villages sampled were harvesting using this method. However, even in these villages plant recovery was not always satisfactory because conservation officials and harvesters were not strictly implementing and monitoring the correct harvesting techniques.

CONCLUSIONS

Socio-economic

Owing to the aridity of NW and the consequent limited livelihood opportunities for people, Devil's Claw harvesting provides harvesters with a small but vital source of cash income.

In LP and NC there is no documented evidence of commercial harvesting of Devil's Claw. Harvesting is limited to off-take for personal use or use in traditional medicine. Traditional healers in LP harvest the plants, and are estimated to number no more than 50 individuals. In NC, plants are harvested by local people for the purpose of self-medication, and subsistence harvesters in this province are estimated to number about 1500.

There are 2163 registered harvesters who have the possibility to make a living from the harvest of Devil's Claw in NW. The total number, including illegal harvesters, ranges from about 2400 to 2700 individuals.

Thus, it was estimated that there are between 3000 and 4500 Devil's Claw harvesters in the country.

Village name	No. of plants per ha.	No. of harvested plants sampled to determine recovery	Percentage of replanted mother tubers that recovered after harvesting	Harvesting in groups (G) or individually (I)	Adequate training Yes (Y) / No (N)	Harvest in quadrants Yes (Y) / No (N)	No. of checks per year by NWDACE officials
Tlhakgameng	173	76	32	I	Y	N	1
Ganyesa	208	156	38	I	N	N	0
Morokweng	537	34	79	I	N	N	0
Deaar	475	8	80	G	N	Y	2
Heuningvlei	675	35	80	G	Y	N	24
Eiffel	63	46	45	G	Y	Y	7
Glenred	254	216	52	G	Y	Y	60
Mathanthanyaneng	696	87	47	I	N	N	3

Table 4. Percentage recovery of replanted *Harpagophytum* mother plant tubers.

Sustainability of harvesting

In comparison to the management of the Devil's Claw trade in Botswana and Namibia (Raimondo and Donaldson, 2002), South Africa, through limiting commercialization to specific areas, use of the quadrant system and having NWDACE closely managing harvesting, is in most known cases maintaining sustainable harvest levels. However, unsustainable harvesting has been identified, mainly associated with NWDACE staff either not carrying out their duties or in areas not yet included in the NWDACE Devil's Claw Harvesting Project. Based on current knowledge there appears to be minimal evidence of widespread destructive harvesting.

NWDACE should be recognized for initiating the Devil's Claw Harvesting Project that enables rural communities to continue earning vital income from Devil's Claw by following practices that encourage sustainable harvest, often under difficult circumstances. Despite this, it is clear that there are deficiencies with their management controls to ensure long-term sustainability. The main problems are associated with staff accountability, poor quality of training, and inadequate local level monitoring, implementation and enforcement of the quadrant harvesting technique.

RECOMMENDATIONS

NWDACE Recommendations

Population recovery data were simple to collect and useful for determining the sustainability of harvest in each area. NWDACE officials should consider using this same methodology to determine how sustainable harvesting is and to help them gauge whether management controls need to be firmer.

Local officials that are monitoring and conducting harvester training, themselves require training and monitoring. The quality of training being given to harvesters by local officials needs to be checked at regular intervals, e.g. once a year. In addition, NWDACE should consider rotation of skilled training staff to under-serviced harvest areas as this would result in all harvesters being exposed to adequate training.

Harvesters should be encouraged to harvest in groups and to monitor one another. There also appears to be a need for a trained foreman or forewoman in each village - someone recognized by NWDACE - to control access to harvesting areas and to watch harvesting practices on a daily basis. It is imperative that once a

Devil's Claw plant has been harvested it is allowed sufficient time to recover and build up storage organs (i.e. tubers) before it is harvested again. It is therefore necessary that NWDACE officials enforce the quadrant system, allowing each area harvested at least three years' recovery time. Currently this aspect of the management of harvesting is not uniformly implemented resulting in instances of non-sustainable harvest.

NWDACE should consider monitoring harvested populations of Devil's Claw at the village-level and determine whether there are needs for stricter controls. It is important that harvesting be regulated according to the number of plants available in the area and the rate of post-harvest population recovery. Continued poor monitoring will lead to over-exploitation and the further need to stop certain villages harvesting altogether. This is not desirable given the high dependence of harvesters on the cash income earned from Devil's Claw harvesting. A situation where Devil's Claw harvesting has been stopped because of over-exploitation after only two years of harvesting has already taken place at the village of Eiffel.

National Recommendations

Future harvesting should be confined to the communal areas of NW and to the eastern parts of NC. To counter the destructive harvesting evident in some areas, NWDACE should expand its training and monitoring programme to improve the level of compliance with sustainable harvest practices if it is to allow the continued access of community members with limited livelihood options to this important source of income.

Although the provinces in South Africa are monitoring Devil's Claw exports, this research indicates that not all exports of harvested material are being recorded. As there is no current national means of monitoring exports, it is imperative that the Nature Conservation Departments monitor the exports from their provinces as closely as possible. In addition, no additional community members (farmers or villages) should be encouraged to harvest Devil's Claw until a better system for monitoring exports is in place.

South Africa should consider a CITES Appendix III listing for both *H. procumbens* and *H. zeyheri* to improve national and international monitoring of trade and range States' understanding of market flows.

Management of the Devil's Claw resource is made difficult by the various provinces having different ordinances, some of which have Devil's Claw listed as a protected plant and others not. With the new regulations that will follow South Africa's *National Environmental Management: Biodiversity Act 10 of 2004*, Devil's Claw should be listed as a protected plant, which would allow for uniform national management of the resource. This listing would enable all relevant provinces to manage and monitor Devil's Claw according to uniform national regulations to facilitate national monitoring and management efforts.

Further research that sets up demographic monitoring to determine the long-term impacts of different harvesting techniques on population viability and which also investigates the effectiveness of the quadrant method as a means of promoting resource recovery, would facilitate improved resource management and is therefore recommended.

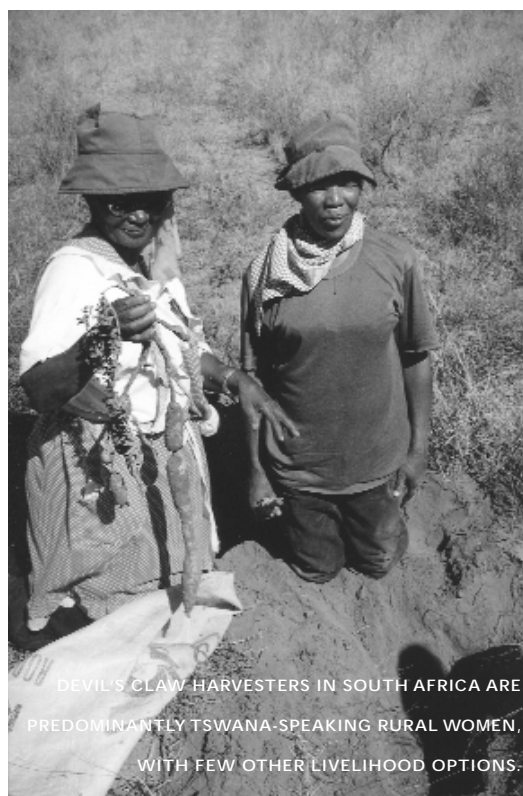
ACKNOWLEDGEMENTS

The authors would like to thank the Whitley Laing Foundation for their financial support towards the Devil's Claw Research Project and the Mazda Wildlife Fund for providing a vehicle that was used during the course of the research. The NW Department of Agriculture, Conservation and Environment (NWDACE), and in particular, Carla van der Vyfer, were a tremendous support during the exercise. Nneheleng Koali from the South African National Biodiversity Institute is thanked for her efforts in helping to carry out the research successfully, especially for translating interviews with local Devil's Claw harvesters.

The following people are thanked for their support during the research exercise: Elsabe Powell, Northern Cape Nature Conservation, and Stan Rodgers of the Limpopo Province Department of Nature Conservation.

Private landowners in NW, LP and NC are gratefully acknowledged for allowing the researchers access to their land. The local Devil's Claw harvesters who answered questions relating to the Devil's Claw trade and harvesting, are thanked for their patience, honesty and hospitality.

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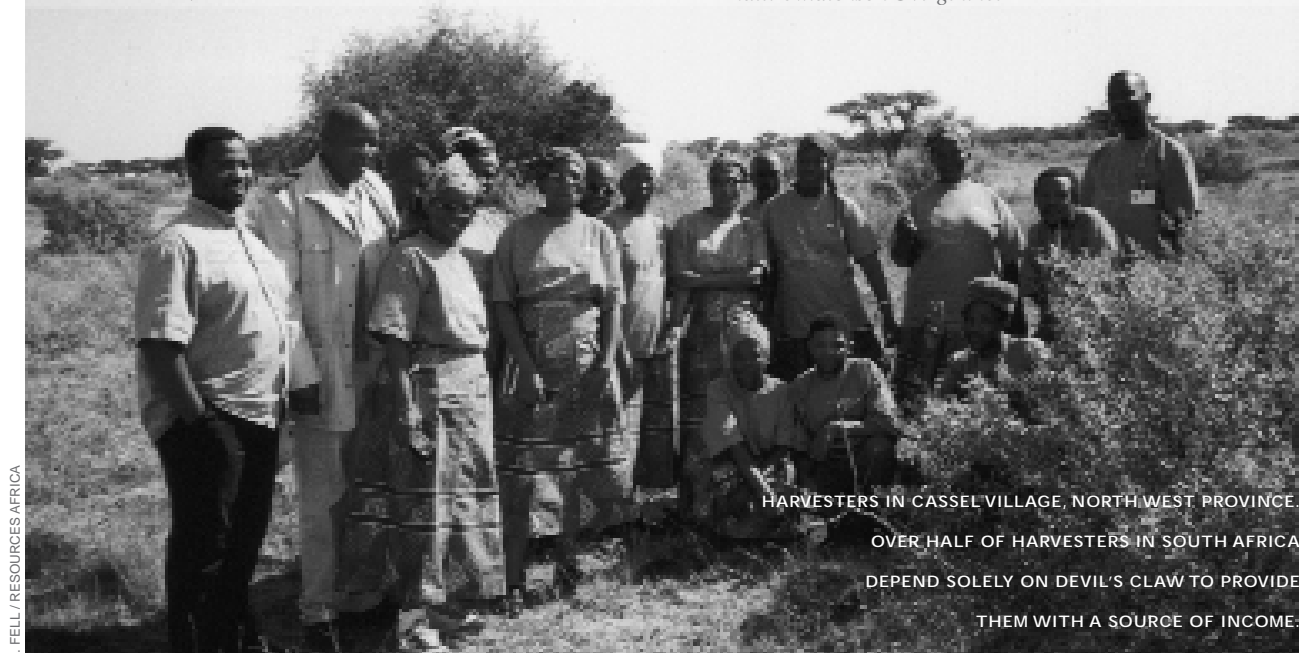


Berit Hachfeld from the University of Hamburg and Uwe Schippmann from the Bundesamt für Naturschutz are gratefully acknowledged for their close collaboration on the project and for providing valuable baseline data. Berit, Danna Leaman and Teresa Mulliken provided helpful comments on an early draft of this manuscript.

Finally, thanks are owed to the South African National Biodiversity Institute staff who made this field work possible.

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HARVESTERS IN CASSEL VILLAGE, NORTH WEST PROVINCE.
OVER HALF OF HARVESTERS IN SOUTH AFRICA
DEPEND SOLELY ON DEVIL'S CLAW TO PROVIDE
THEM WITH A SOURCE OF INCOME.



TRAFFIC BULLETIN SEIZURES AND PROSECUTIONS IS SPONSORED BY THE FORESTRY BUREAU, COUNCIL OF AGRICULTURE, TAIWAN: COMMITTED TO SUPPORTING CITES ENFORCEMENT

The cases reported below represent a selection of recent seizures and prosecutions that have taken place worldwide. The sources of this information are cited at the end of each country section. The CITES Appendix-listing for each species is placed in parentheses, where appropriate.

EUROPE

BELGIUM

On 14 February 2005, elephant ointment was found in a postal shipment, sent from an individual in Ghana to a private address in Brussels. As the prescription indicated the presence of elephant (CITES I) oil (0.3%), a CITES licence should have accompanied the package, which it did not. The item was confiscated.

On 27 April 2005, the Anti-Drug team at Zaventem Airport confiscated 50 Graceful Chameleons *Chamaeleo gracilis* (CITES II) and more than 50 African Forest Turtles *Pelusios gabonensis* arriving from Congo, bound for a trader in Germany. The chameleons were covered by a copy of a CITES export permit. There was no paperwork accompanying the turtle shipment. All the animals were sent to the national zoo in Antwerp.

In August 2005, Customs officers at Zaventem Airport seized a cargo shipment containing more than 1000 kg of African Teak *Pericopsis elata* (CITES II). The items, arriving from Kinshasa, Democratic Republic of Congo, were in the form of wooden steps and doors and declared as personal effects. The consignee, a private individual, was not in possession of a CITES permit.

Belgian Customs Airport News, CITES 02/07;12/2005; GAD (Anti-Drug Customs) team

CROATIA

On 28 November 2004, Customs officials at Zagreb Airport seized 50 Emerald Monitors *Varanus prasinus* (CITES II) from a Croatian citizen returning from Indonesia via Kuala Lumpur and Amsterdam, without CITES permits. The animals had been placed, five to a sack, in two plastic baskets inside hand luggage. The suspect stated that he had been in Indonesia as a tourist and had purchased the reptiles from a market in Jakarta. His intention was to start breeding Emerald Monitors in captivity. He claimed to be unaware of the need for a CITES permit to export/import the specimens. When approached to have his luggage inspected, the suspect declared the reptiles, thus avoiding a violation of the Customs

EMERALD MONITOR LIZARDS (also known as Green Tree Monitor Lizards) *Varanus prasinus* (CITES II), a shipment of which was recently seized in Croatia (see left), are endemic to the island of New Guinea (shared between the countries of Indonesia and Papua New Guinea) and a few other adjacent smaller islands in eastern Indonesia. The species is arboreal, reaching a length of approximately 100 cm, and is usually green in colour, although this can range from a deep turquoise-green to black, depending on the lizard's surroundings. It is well-adapted to life in the rainforest, having large scales on the soles of its feet that are thought to aid it in climbing, and a long prehensile-like tail that is used as a dexterous extra limb. Like most reptiles from the remote forests of Papua, very little is known of the ecology of this species. There are a few subspecies already described but the taxonomy is not yet comprehensive.

While Indonesia and Papua New Guinea prohibit capture and export of wild specimens of *Varanus prasinus*, Indonesia does permit the export of captive-bred specimens. The species is difficult to keep in captivity owing to its specialized needs. Reliable reports of breeding are scarce and attempts to breed it in captivity have met with great difficulty. Many Emerald Monitor Lizards found in international trade are suspected to have been illegally taken from the wild. According to sources involved in the reptile trade in Indonesia, the majority of Emerald Monitor Lizards illegally entering international trade are sent to Jakarta from Sorong (Papua), and then smuggled abroad. Sources in Indonesia state that many wild-caught specimens are exported from Indonesia under the guise of being captive-bred. Captive-bred animals do not fall under the restrictions of the national quota system in Indonesia. Dealers are able to obtain breeding permits for protected species from the CITES Management Authority, and can export the offspring. However, strict monitoring of captive breeding is currently lacking and many operations are suspected to be exporting wild-caught specimens, claiming they are captive-bred.

In addition to the recent seizure in Croatia, where all the specimens were deemed to be wild-caught and had been smuggled without legitimate permits, there were three similar cases of illegal imports of CITES-listed reptile species from Indonesia into Europe during 2003 and 2004. In March 2003, 26 Emerald Monitor Lizards, 16 Beccari's Monitor Lizard *V. prasinus beccarii*¹ and 61 Green Tree Pythons *Morelia viridis* were confiscated at Prague Airport in the Czech Republic. In January 2004, an attempt was made to import 115 reptile specimens illegally into the Czech Republic, including 20 *Varanus prasinus* (of three subspecies: *V. prasinus macraei*, *V. prasinus kordensis* and *V. prasinus boehmei*) and two Papuan/Crocodile Monitors *V. salvadorii*. Similar cases have been detected in Slovakia: in May 2001, 18 Emerald Monitor Lizards were seized from a bus coming from Austria carrying passengers who had arrived by air from Indonesia. Other reptiles from Indonesia have been seized entering Europe in recent years: for example, in 2003, a shipment of 69 reptiles, including Green Tree Pythons, Rough-necked Monitor Lizards *V. rudicollis* and Brown Water Pythons *Liasis fuscus*, packed in socks and boxes, were seized at Prague Airport. The Czech citizen who was involved in at least two of these cases was sentenced to three years in prison.

These recent seizures confirm growing concerns of an increasing trade in protected wildlife from Indonesia to consumer regions such as the European Union. Much of the trade is of wild specimens declared as captive-bred. For authorities and enforcement officers, detecting such deception is particularly difficult, requiring, for example, expertise in distinguishing between wild and non-wild specimens - a skill which many officers normally do not have.

¹Beccari's Monitor Lizard *V. prasinus beccarii* is usually considered a subspecies of *V. prasinus*, but, as it is pure black in colour, has more keeled neck scales and is slightly larger (reaching 128 cm in length), it has been treated by some authors as a separate species. This lizard is endemic to the Aru Islands. Until 2003, wild-caught specimens of this species were allowed to be exported from Indonesia under the national harvest and export quota. In 2004, it was given the same status of total protection with zero quota, as other subspecies of *V. prasinus*.

Bibliography: Bennet, D. (1998). *Monitor Lizards: Natural History, Biology and Husbandry*. Frankfurt Am Main, Germany.
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Chris Shepherd, *TRAFFIC Southeast Asia*; Katalin Kecse-Nagy and Dorottya Papp, *TRAFFIC Europe - Central Eastern Office*



EMERALD TREE MONITOR *VARANUS PRASINUS* / K. BEZUH

Code for importing animals into the country. The following day, the lizards were taken into the care of the Nature Protection Inspection with the Ministry of Culture, Department for Nature Protection and placed in a rescue centre near Zagreb.

The CITES Management Authorities in Croatia and Indonesia arranged for all specimens, excepting 13 that had died and four that were too ill to travel (and which remain at the rescue centre), to be issued with the necessary CITES re-export permits and health certificates. They were permitted entry to Indonesia in February 2005 and sent to Tegal Alur Rescue Centre in Jakarta. Personnel at the Centre, in collaboration with Wasur National Park in Papua and local tribes inhabiting the area, identified a suitable release site in the park after a one-month habitat assessment was carried out. The forestry department issued a permit to allow the lizards' release and the local indigenous group - the Morori Men-gey tribe - activated a traditional law against hunting in the area. The reptiles were flown by a medical team from Tegal Alur Rescue Centre to the park on 10 May where they spent a further 12 days in a pre-release cage for further medical checks and to acclimatize them for release. On 22 May they were successfully released and were soon observed climbing trees and feeding on ant nests.

Katica Bezuh, Nature Protection Senior Inspector, Ministry of Culture, Nature Protection Directorate, Department for Legal Affairs and Nature Protection Inspection, Zagreb, Croatia; Femke den Haas, Manager, Tegal Alur Rescue Centre, Jakarta, Indonesia

GERMANY

On 18 June 2005, Customs officers from Mukran and Rügen boarded a Russian motorboat docked at the harbour in Sassnitz-Mukran and discovered some 67 reptilian skin products inside the captain's cabin. The items included handbags, wallets and a 4.5 metre long skin piece (species not disclosed). The boat had arrived from Guinea Bissau via Sweden. The captain could not present an import permit for the items.

In August 2005, Customs officers at Frankfurt Airport uncovered an attempt to smuggle 375 Indian Star Tortoises *Geochelone elegans* (CITES II) in two suitcases. Thirty specimens had died. The reptiles, contained in jute sacks and bound with elastic bands, were found by sniffer dogs during a routine check of luggage. The shipment was in transit from Dubai to Zagreb, where they were to be sold. A Croatian citizen was taken into custody. The tortoises were malnourished and were to be cared for at the airport before being sent to a zoo.

www.zoll-d.de/f0_veroeffentlichungen/a0_pressemitteilungen/q68_artenschutz/www.spiegel.de/panorama/0,1518,370205,00.html

GREENLAND

In June 2005, a Danish court fined the smuggler of 15 figures made from teeth of Sperm Whale *Physeter catodon* (CITES I) and Walrus *Odobenus rosmarus* (III) DKK15 000



INDIAN STAR TORTOISES *GEOCHELONE ELEGANS* (CITES II) (TOP) AND FIJI BANDED IGUANAS *BRACHYLOPHUS FASCIATUS* (I) WERE AMONGST 218 REPTILES SEIZED IN SLOVAKIA FROM THE HOUSE OF AN INTERNATIONAL TRADER.

NETHERLANDS

On 17 February 2005, the General Inspection Service and Customs officials at Schiphol Airport seized an illegal shipment of parts belonging to eight African Elephants *Loxodonta africana* (CITES I), including 22 legs, 8 tusks, 8 ears, 3 tails, a skull and one complete hide - all packed in salt. Also included were the horns and hides of Lechwe *Kobus lechwe* (II). The shipment originated in southern Africa and was to be shipped to Portugal, Spain and the Czech Republic, via Germany. The case is under investigation.

Reuters, 18 February 2005:
<http://today.reuters.co.uk/news>

SLOVAKIA

On 29 November 2004, police officers searched the house of a Slovakian citizen in Bratislava following a joint investigation by the police, Customs and the Environmental Inspectorate. The police seized from the wildlife trader, who had already been convicted of wildlife trade crimes abroad, a total of 218 reptiles, including 55 Radiated Tortoises *Geochelone radiata* (CITES I), 28 Indian Star Tortoises *Geochelone elegans* (II), 12 Marginated Tortoises *Testudo marginata* (II), 65 Spur-thighed Tortoises *T. graeca* (II), 48 Hermann's Tortoises *T. hermanni* (II), 8 Fiji Banded Iguanas, *Brachylophus fasciatus* (I) and 2 Madagascar Tree Boas *Sanzinia madagascariensis* (I). The animals were placed at the rescue centre of Bojnice Zoo.

Judicial and Criminal Police Office of Slovakia, Environmental Crime Group and Customs Directorate of Slovakia, Customs Criminal Office

SWITZERLAND

Investigations by Swiss Customs, in co-operation with the Swiss Federal Veterinary Office, have revealed that 537 shahtoosh shawls (made from the wool of the Tibetan Antelope *Pantholops hodgsonii* (CITES I)), have been illegally imported into Switzerland over a five-year period. The smuggling network was uncovered by Customs in January 2003 after they carried out investigations at a shop in St Moritz and a dealer's premises in Geneva. Some 38 shawls were seized.

The majority of the shawls were smuggled from India to Geneva by airline passengers and from there were sent to St Moritz. However, the investigations also revealed that other western European countries such as Germany served as transit points and that shawls were also smuggled by car and courier service. The shawls were sold through the shop in St Moritz and it is believed that a number of the shawls were taken out of Switzerland.

Swiss federal Customs administration press release, 15 June 2005

(EUR7200). In May 2003 he had tried to import the items from Bali inside a hollow statue. The case is reported to be related to a seizure of Sperm Whale and Walrus teeth in October 2002 (see *TRAFFIC Bulletin* 19(3):149).

AG/Grönlandsposten (Greenland), 16 June 2005

ITALY

In July 2005, investigators of the Corpo Forestale dello Stato (the CITES enforcement authority) seized some 200 raptors illegally imported over a five-year period. This follows the seizure in May in Ancona seaport of 13 eggs of Egyptian Vulture *Neophron percnopterus* and Black Stork *Ciconia nigra* (both CITES II), illegally imported from Greece by an Austrian national.

The seized raptors included the following CITES II species: Hooded Vulture *Necrosyrtes monachus*, Ruppell's Vulture *Gyps rueppellii*, White-backed Vulture *G. africanus*, Secretary-bird *Sagittarius serpentarius*, Palm-nut Vulture *Gypohierax angolensis*, Jackal Buzzard *Buteo rufofuscus*, Red-necked Buzzard *B. auguralis*, Golden Eagle *Aquila chrysaetos*, Steppe Eagle *A. nipalensis*, Saker Falcon *Falco cherrug*, Forster's Caracara *Phalcoboenus australis* and Mountain Caracara *P. megalopterus*.

TRAFFIC Europe

UK

In April 2005, Customs officials at Heathrow Airport seized approximately nine kilograms of African Elephant *Loxodonta africana* (CITES I) ivory, in transit from Nigeria to China. The raw tusks were found inside a postal package described as gifts. Investigations are continuing.

HM Revenue & Customs CITES Team, Heathrow Airport

AFRICA

ETHIOPIA

In January 2005, 66 outlets in Addis Ababa were raided by the combined effort of 262 officers, including 50 code enforcement guards, 136 policemen, 66 security guards and 10 wildlife inspectors. A total of some 500 kg of ivory and other wild animal products (including Leopard *Panthera pardus* (CITES I) skins and Ostrich (CITES I) *Struthio camelus* eggs) valued at one million Birr (USD115 600) were confiscated, and charges made against personnel at all 66 outlets. Under new legislation, they may face a Birr 5000 (USD578) fine and up to two years in gaol.

See also pages 119-128.

TRAFFIC East/Southern Africa

KENYA

On 31 January 2005, six young Chimpanzees *Pan troglodytes* (CITES I) and four guenons (species not disclosed) were seized by Customs officials at Kenyatta International Airport. The animals, all in one small crate, were reported to be in a pitiful condition and one Chimpanzee later died from malnutrition. The shipment was believed to have been en route from Egypt to Nigeria.

The primates were taken into the care of the Kenya Wildlife Service. The Lusaka Agreement Task Force, an African organization charged with investigating illegal trade in flora and fauna, is working with the Egyptian and Nigerian authorities to determine the origin of the animals.

On 30 August 2005, Kenya Wildlife Service (KWS) rangers arrested three Kenyan men and seized 22 elephant tusks (CITES I) weighing 130 kg. KWS was passed information that the three were looking for buyers in the town of Garsen, 460 km south-east of Nairobi. Two rangers posed as buyers and arrested the men. Two other suspects got away. The three men were charged in court on 1 September. Investigations are continuing.

Reuters, www.planetark.com/dailynewsstory.cfm/newsid/29543/story.htm, 16 February 2005;
www.iol.co.za/index.php?set_id=1&click_id=87&art_id=qw1125927001824B251

ASIA

EAST ASIA
HONG KONG
SPECIAL ADMINISTRATIVE REGION

On 23 May 2005, Customs officers at Kwai Chung Customhouse foiled an attempt to smuggle 503 kg (229 pieces) of ivory (CITES I) tusks and 556 kg (51 bags) of scales of Hawksbill Turtle *Eretmochelys imbricata* (I) into Hong Kong. The consignment, originating from Tanzania, had been shipped via Singapore in a seven-metre container declared as containing "dried fish maws". The items were handed over to the Agriculture, Fisheries and Conservation Department for further investigation. No arrests have been made.

On 4 July 2005, Customs officers at Kwai Chung Customhouse arrested an Indian national arriving from Sri Lanka following the discovery of over 50 kg of dried seahorses *Hippocampus* in his luggage. He was later prosecuted and fined HKD10 000 (USD1280).

On 4 August 2005, at Kwai Chng Customhouse, officials of the Agriculture, Fisheries and Conservation Department, acting on information, intercepted a shipment of 57 live parrots, including amazons and cockatoos, of CITES I- and II-listed species from Guinea. It became evident that the declared origin and identity of some of the parrots had been falsely declared in the exporting documents. The case is under investigation.

Police uncovered a shipment of 2000 pangolins *Manis* on a beach in Hoi Ha Wan after residents became suspicious when a group of people started visiting the area and unloading up to 200 boxes from lorries at a time; these were claimed to be frozen chicken wings. The police were called to investigate and the parcels found to contain the pangolins - their scales removed, frozen, and individually vacuum-packed. They were destined for restaurants in China. Three men were arrested.

Agriculture, Fisheries and Conservation Department, Hong Kong, 24 May 2005: www.info.gov.hk/gia/general/200505/24/05240217.htm; in litt., 23 September 2005; *The Electric New Paper*, 9 September 2005



THE LARGEST-EVER CONSIGNMENT OF TIGER BONES TO BE SEIZED IN TAIWAN

arrived in July 2005 from Indonesia, once home to three subspecies of Tiger - Javan, Balinese and Sumatran (see under Taiwan). Today, only between 400 and 500 Tigers are left in the wild in Sumatra, the other two subspecies having become extinct due largely to illegal killing for trade, and loss of their habitat. According to *Nowhere to Hide: The Trade in Sumatran Tiger*, a TRAFFIC Southeast Asia report published in 2004, it is estimated that at least 50 Tigers were killed or removed from the wild in Indonesia each year between 1998 and 2002.

Chris Shepherd, Regional Programme Officer of TRAFFIC Southeast Asia, says that this single shipment represents nearly half that annual figure. "Assuming that all these Tiger parts were sourced from Sumatra, Indonesia is in real danger of losing its last remaining Tiger subspecies - the Sumatran Tiger - if the widespread illegal trade in Tiger parts is not stopped".

In the course of TRAFFIC's research for the report, traders in Sumatra indicated that they sold Tiger parts illegally to Taiwan, as well as to South Korea, China, Japan, Singapore and Malaysia.

"We would like to commend the efforts of Taiwan Custom's authorities in intercepting this illegal shipment and we encourage other potential consumer countries to show similar vigilance and strong enforcement action" Shepherd says. "Despite earlier indications of the trade in some markets shifting to Tiger skins and other products besides bone, this seizure clearly illustrates that Tiger parts in traditional Asian medicine continues to be a threat to wild Tigers." TRAFFIC urges Indonesia to boost its enforcement efforts significantly in order to ensure that even more Tigers are not poached for the bone trade.

TRAFFIC press release, 8 August 2005; TRAFFIC Southeast Asia

WWF-CANON / A. CHRISTY WILLIAMS



FEMALE SAMBAR DEER, RAJAJI NATIONAL PARK, NORTH INDIA

JAPAN

On 25 November 2004, at a court in Tokyo, two people were charged under the *Law for the Conservation of Endangered Species of Wild Fauna and Flora* with the illegal trade in a stuffed Giant Panda *Ailuropoda melanoleuca* (CITES I). The seller of the specimen was sentenced to one year in gaol, placed on probation for three years, and fined 800 000 Yen (USD7638). The buyer was sentenced to gaol for one year and placed on probation for three years.

On 14 January 2005, Tomishiro police at Naha Airport, Okinawa Islands, arrested two residents of Taiwan for smuggling 1738 semi-worked ivory products.

On 20 January 2005, police arrested two people for the smuggling and illegal trade in Radiated Tortoises *Geochelone radiata* (CITES I) in contravention of the *Law for the Conservation of Endangered Species of Wild Fauna and Flora*. The nine tortoises had been posted in 2004 by express postal service. Some of the specimens had been offered for sale over the internet which was detected by the Osaka squad of special prosecutors who were posing as buyers.

TRAFFIC East Asia

NEPAL

On 2 September 2005, the Royal Nepal Army (RNA) arrested two Nepalis and a Tibetan in the Rasuwa district, on the border with the Tibetan Autonomous Region (TAR) of China. In their possession were skins of five Tigers *Panthera tigris* (CITES I), 36 Leopards *P. pardus* (I), 238 otters and 113 kg of Tiger and Leopard bones. According to staff of the Wildlife Protection Society of India (WPSI), who interrogated the poachers at Kathmandu, the accused were delivering the articles to a trader in Bouddha, Kathmandu, after which they were to be routed to TAR via Bidur, Dhunche and Syabru.

The seizure was the third major haul of wildlife products in Nepal this year: in August, skins of a Tiger, one Leopard and 103 pieces of Tiger and Leopard bones were seized in Kathmandu. The poachers - from the Bawaria

community of Haryana - were arrested. Two Tiger skins were seized in Tatopani in April, en route to the TAR.

<http://timesofindia.indiatimes.com/articleshow>

TAIWAN

On 4 July 2005, in the largest-ever single seizure of Tiger *Panthera tigris* (CITES I) bone in Taiwan, and one of the largest in Asia since 2000, Kaohsiung Customs authorities confiscated over 140 kg of Tiger bones, including 24 skulls, in a shipment from Jakarta, Indonesia. The contraband was hidden in a container of deer antlers being exported to Taiwan for use in traditional medicines. Also seized were 400 kg of pangolin *Manis* scales and five pieces of carved ivory weighing one kilogramme.

TRAFFIC press release, 8 August 2005

SOUTH ASIA INDIA

On 8 March 2005, police seized three skins of Leopards *Panthera pardus* (CITES I) and four other wild cats, and arrested two people during routine vehicle checks in Mukherjee Nagar in north-west Delhi. Two others fled. The detained pair revealed that they used to bring skins from the Terai region of the Himalayas and sell them to Sansar Chand (see *TRAFFIC Bulletin* 20(2):85) who was himself arrested by police in Delhi in June (see below).

On 6 April 2005, police in Delhi seized a consignment of skins of 45 Leopards *Panthera pardus* (CITES I) and 14 otters on its way to Nepal (with the final destination believed to be China). Three people acting as couriers - two Tibetans and one Nepali - were placed under arrest.

Most of the skins were in good condition and bore signatures in Tibetan script. According to Belinda Wright of the Wildlife Protection Society of India, the signatures indicate that the skins had been checked for quality and were ready to be sent abroad.

On 11 April 2005, two people, including the son of a government official, were arrested in Ranchi, in the State of Jharkhand, while trying to

sell five kilogrammes of ivory. One of the pair absconded with 25 kg of ivory. The police posed as customers following information received that the pair was trying to sell 30 kg of ivory.

On 19 May 2005, 41 dead sharks (species not reported) were seized by West Bengal's wildlife authorities from a trawler some 150 km from Kolkata. Fourteen people on the trawler were taken into custody on charges of violating the *Wildlife Protection Act*. It is reported that the sharks were destined for domestic and probably foreign fish markets.

On 30 June 2005, Sansar Chand, one of India's most wanted poachers, was arrested by Delhi police in Patel Nagar in connection with several new Tiger poaching cases filed against him. Chand has been sought by officials in nine States for his involvement in over 50 cases of poaching and animal skin smuggling that have taken place over a period of many years. He had been on the run since he jumped bail in May 2004 (see also *TRAFFIC Bulletin* 20(2):85).

On 29 July 2005, a poacher arrested by the police in Chhatarpur, Madhya Pradesh, confessed to killing at least five Tigers *Panthera tigris* (CITES I) in the Panna National Park/Tiger Reserve in that State, and admitted to his role in smuggling skins of 30 Leopards *P. pardus* (I) in the past few years. He is reported to have confessed to supplying skins to a number of dealers known to police, including Sansar Chand (see above). He was arrested in March after police had traced him from his mobile phone conversations with different contacts in India and Nepal. A Tiger trap and some deer skins were recovered from him. The previous day, Bhopal police arrested a youth in possession of a fresh Leopard skin, reportedly being taken for delivery to Shivpuri. Police are trying to ascertain if there are any links between the two cases.

On 30 July 2005, acting on information, forest staff of Kalamati Forest Gate, under the Missamari police station near Tezpur, Assam, apprehended a person in possession of a 2.2 m-long Tiger *Panthera tigris* (CITES I) skin and some 10.5 kg of Tiger bones. The body parts had come from a freshly killed animal along the Assam-Arunachal Pradesh border. The trader, suspected of being involved in the Tiger trade for some years, used a police vehicle to transport the Tiger. One police officer who was in the vehicle has been suspended from service. The case is under investigation.

On 20 September 2005, Customs officials at Chennai Airport, Tamil Nadu, seized about 350 Indian Star Tortoises *Geochelone elegans* (CITES II) from a Malaysian national bound for Kuala Lumpur. The reptiles were handed over to the Tamil Nadu Forest Department officials.

www.ndtv.com, 7 April/19 May 2005; *India News*, 9 March/12 April 2005; *Indo-Asian News Service*; www.indianexpress.com, 1 July 2005; Bibhab Kumar Talukdar, Secretary General, Aaranyak; Chennai Online, 20 September 2005; Manoj Kumar Misra, Executive Director, Peace Institute.

SOUTH-EAST ASIA CAMBODIA

On 2 September 2005, Yor Ngun, one of the country's wildlife hunters most wanted by the authorities, was sentenced to seven years in gaol for killing more than 600 animals since 2001. According to US-based conservation group WildAid, Yor had killed over 500 wild cattle (banteng) and specimens of the following CITES I-listed species: 19 Tigers *Panthera tigris*, 40 Leopards *P. tigris*, 30 Asian Elephants *Elephas maximus*, 40 Malayan Sun Bears *Helarctos malayanus* and three Asiatic Black Bears *Ursus thibetanus* across 10 provinces. He was first arrested by the Forestry Administration in September 2004 in the eastern province of Mondul Kiri, but was released after signing a promise not to re-offend. However, he was caught earlier this year in the south-western province of Koh Kong carrying 82 bear claws and 25 bear jaws.

A wildlife trader was ordered to pay an immediate penalty of USD543 after the conservation group WildAid's Wildlife Rapid Rescue Team (WRRT) raided her house in Phnom Penh and seized 12 Elongated Tortoises *Indotestudo elongata* (CITES II), 9 Giant Asian Pond Turtles *Heosemys grandis* (II), 3 Malayan Snail-eating Turtles *Malayemys subtrijuga* (II), 2 Asian soft-shelled turtles *Trionyx* (I), Asian box turtle *Cuora* sp. (II) and 1 watersnake. The operation was conducted after a search warrant was issued by the Municipality Court of Phnom Penh. The offender, Ms Suon Pov, a Phnom Penh citizen, and a known major wildlife dealer, admitted stockpiling wildlife which was to be taken to the south-east province of Kampong Cham the following day, before being taken to Viet Nam for sale. The animals were thoroughly assessed before being considered suitable for release. None was injured and all of a suitable age and were subsequently transported to Bokor National Park and released in their appropriate habitats.

A well-known wildlife trader was put under house arrest by WildAid's Wildlife Rapid Rescue Team (WRRT) after a search warrant was issued by the provincial court of the province of Mondul Kiri and his premises raided. WRRT confiscated 2 pangolins *Manis* (CITES II), 1 Burmese Python *Python molurus* (I/II), 54 Elongated Tortoises *Indotestudo elonga-*

ta (II), 9 Giant Asian Pond Turtles *Heosemys grandis* (II) 3 Gaur *Bos gaurus* (I) heads and horns, 7 pairs of Sambar Deer *Cervus unicolor* horns, 3 pairs of wild cattle (banteng) horns, 5 kg of Serow *Naemorhedus sumatraensis* (I) bones, 18 kg of turtle shells and plastrons, 1 Burmese Python skin, 5 dried Slow Lorises *Nycticebus coucang* (II), 14 kg of wild boar meat, 1 kg of Muntjac *Muntiacus* meat and 1156 AK47 bullets. The goods were destined to be brought to Viet Nam via the province of Kampong Cham. The offender was charged with illegal wildlife trading and illegal trade of weapons and ammunition and is now in custody awaiting prosecution in the provincial court of Mondul Kiri. The live animals were released back into the wild and animal parts were kept by a WRRT Forestry Officer as evidence in the court.

Reuters, 5 September 2005
WildAid: www.wildaid.org, 12 August/12 July 2005

INDONESIA

On 27 January 2005, police in Papua intercepted a boat in Naramasa waters near Manokwari and seized 639 logs of Merbau *Intsia palembanica* wood, with a total volume of about 2123 cubic metres. Three suspects - a Malaysian and two Indonesian citizens - were arrested on 3 February in Manokwari. The barge was reported to be on its way to meet buyers in Gresik, near the East Java capital of Surabaya. Police questioned the owner of the tugboat and two alleged buyers, along with eight others aboard the tug. Merbau timber - one of the most valuable species in South-east Asia - is used for furniture and flooring.

On 14 March 2005, the East Java Natural Resources Conservation Body (BKSDA) foiled an attempt to smuggle 7275 Pig-nosed Turtles *Carettochelys insculpta* from Merauke, Papua, during a raid in Tanjung Perak seaport, Surabaya. The animals were concealed in drums on board a vessel. A Black-capped Lory *Lorius lory* (CITES II) was also seized. One hundred and forty-five turtles died from lack of oxygen. Four people - the captain of the vessel and crew members - were arrested. Pig-nosed Turtles were listed in CITES Appendix II in January 2005.

The Jakarta Post (Indonesia), 22 February/
16 March 2005

MALAYSIA

On 15 June 2005, officers of Selangor's Wildlife and National Parks Department seized 175 boxes of monitor lizard *Varanus* sp. (CITES II) and python *Python* sp. (II) meat from a lorry that had been stopped at Bukit Raja toll booth. Reported as the biggest seizure by the department this year, the meat had been bound for China and Taiwan. The driver was detained and the investigation continues. It is suspected that the consignment originated from Johor and was on its way to Port Klang for shipment.

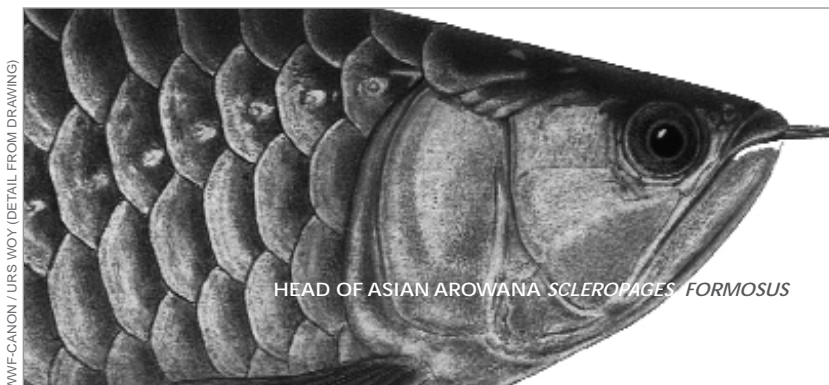
www.thestar.com.my 16 June 2005

VIET NAM

On 2/3 December 2004, police officials inspecting two lorries discovered over seven tonnes of wildlife specimens, including approximately 217 kg of pangolins *Manis* sp. (CITES II), 20 kg of Keeled Box Turtles *Pyxidea mouhoti* (II), 12 kg of Malayan Box Turtles *Cuora amboinensis* (II), 28 kg of Banded Kraits *Bungarus fasciatus*, 94 kg of Radiated Rat Snakes *Elaphe radiata*, 3 kg of King Cobras *Ophiophagus hannah* (II), 20 kg of Water Monitors *Varanus salvator* (II), 4 kg of Big-headed Turtles *Platysternon megacephalum* (II), and 7 kg of Common Palm Civets *Paradoxurus hermaphroditus* (III). The drivers declared that they were transporting dried fish to China and were hired by traders to transport the goods to the Vietnam-China border in Quang Ninh Province.

On 5 April 2005, authorities seized over five tonnes of wild animals being transported by lorry from the southern Mekong Delta province of Long An. The animals, bound for restaurants in China, included approximately three tonnes of turtles and two tonnes of monitor lizards *Varanus* sp. (CITES II), pangolins *Manis* sp. (II) and snakes (species not reported). The driver of the vehicle was detained for questioning. The Thanh Hoa Forest Protection Department released hundreds (400 kg) of healthy turtles in the shipment in Xuan Lien Nature Reserve in Truong Xuan District and Pu Hu Nature Reserve in Quan Hoa District. The remaining animals were sold to local villagers.

The People's Police Newspaper, 7 December 2004 and Labor Newspaper, 6 April 2005, cited in Nature and the Environment in the News, Education for Nature-Vietnam, April 2005: www.envietnam.org



HEAD OF ASIAN AROWANA *SCLEROPAGES FORMOSUS*

SIXTEEN ASIAN AROWANA *SCLEROPAGES FORMOSUS*

(CITES I) SPECIMENS WERE FOUND IN A WATER-FILLED PLASTIC BAG INSIDE THE LUGGAGE OF A FLIGHT ATTENDANT ON A FLIGHT ARRIVING IN AUSTRALIA FROM VIET NAM. THIS MEMBER OF THE PRIMITIVE GROUP OF FISHES OSTEOGLOSSIDAE IS MUCH IN DEMAND AS AN AQUARIUM FISH.

OCEANIA

AUSTRALIA

On 10 March 2005, at Melbourne International Airport, 16 live fish were found concealed in water-filled plastic bags in the luggage of a flight attendant arriving from Viet Nam. Experts at Melbourne Museum identified the fish, each approximately 20 cm in length, as Asian Arowana *Scleropages formosus* (CITES I).

Following 12 months of planning, a series of raids on 46 restaurants and houses by fisheries officers from the Department of Primary Industries in Victoria has led to seven people being charged with 36 offences relating to trafficking in abalone *Haliotis*. Some 485 kg of abalone meat was seized. Another 15 people and a company are to be charged.

On 18 August 2005, at Perth Magistrates' Court, Japanese national Kazutaka Ogawa was found guilty of three offences in relation to exportation and cruelty under the *Commonwealth Environmental Protection and Biodiversity Act 1999*. He was also found guilty under Western Australia's *Conservation and Land Management Act 1984* of taking from the wild. Ogawa had tried to export illegally to Japan 24 Oblong Turtles *Chelodina oblonga* and one Shingleback Lizard *Tiliqua rugosa* on 23 March 2004. He was fined a total of AUD24 600 (USD19 000). The reptiles, 13 of which perished, were found when Australia Post staff at Perth International Mail Centre alerted Customs and Conservation and Land Management (CALM) officers to a suspicious package following screenings of outgoing mail.

After extensive investigation, Customs identified Ogawa as responsible for the attempted smuggling. However, he had left the country within hours of the package being discovered. On 26 June, Ogawa returned to Australia and was identified by Customs officers at Adelaide International Airport and subsequently arrested.



AUSTRALIAN CUSTOMS SERVICE

On 14 October 2005, in Sydney District Court, Keith Lionel Miller, of Lurnea, was found guilty of attempting to export native specimens in contravention of the *Commonwealth Environmental Protection and Biodiversity Act 1999*. Miller pleaded guilty to concealing eggs of 23 native birds in his clothing as he prepared to depart Australia for Zurich on 12 November 2004 (see *TRAFFIC Bulletin* 20(2): 87). The eggs, discovered during a frisk search, included specimens of Leadbeater's Cockatoo *Cacatua leadbeateri* and Gang-gang Cockatoo *Callocephalon fimbriatum* (both CITES II). Miller was given a two-year gaol sentence; a non-parole period of 14 months was imposed.

Australian Customs media releases, 11 March/18 August/14 October 2005; Media release, Dept of Primary Industries: 12/26 May 2005: www.customs.gov.au/site/page.cfm?c=6305

AMERICAS

CANADA

On 14 March 2005, at the Court of Québec, Criminal and Penal Chamber, Marc Langlois of Lévis, Québec, pleaded guilty to 45 charges relating to the purchase, sale and possession of gall bladders of American Black Bear *Ursus americanus* (CITES II) for the purpose of illegal interprovincial trade. He was fined CAD47 456 (USD39 000), one of the highest fines ever imposed in Canada for possession of bear parts.

The case came to light during the course of investigations carried out between 2001 and 2003 which targeted the poaching and illicit trade of American Black Bear parts and other game. Search warrants were carried out in over 60 locations in Québec, Ontario, Alberta, and the USA and involved over 200 officers from the Ministère des Ressources naturelles et de la Faune du Québec, Environment Canada (Canadian Wildlife Service), Ontario Ministry of Natural Resources and the US Fish and Wildlife Service (see also *TRAFFIC Bulletin* 20(1):38).

Langlois was charged with 25 counts under the federal *Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*. He was found guilty of possessing American Black Bear gall bladders for trafficking purposes between February 2001 and November 2002. He was also found guilty, under the provincial *Act Respecting the Conservation and Development of Wildlife*, of 20 charges relating to the purchase or sale of American Black Bear gall bladders.

To date, some 56 people have been fined and CAD382 921 in fines collected during the course of the investigation, code-named Operation América.

On 31 May 2005 at Colwood provincial court, Michael William John McGuire pleaded guilty to several *Fisheries Act* violations, which included the illegal possession of Northern Abalone

Haliotis kamtschatkana. He was fined USD35 000 and his vehicle, fishing vessels, fishing equipment and diving gear duties were forfeited to the Crown. He was also banned from diving in Canadian waters for a period of 20 years.

On 13 July 2005, a man from Ontario faced 44 counts under the *Wild Animal Plant Protection and Regulation of International and Interprovincial Trade Act* relating to the possession, offering for sale, sale, import, export and interprovincial transport of endangered animals and their parts between October 2002 and May 2005. The animals included: African Elephant *Loxodonta africana* (CITES I), birds-of-paradise (II), Sperm Whale *Physeter catodon* (I), Walrus *Odobenus rosmarus* (III) and Long-eared Owls *Asio otus* (II). The majority of the sales investigated took place on an internet auction site.

The suspect was arrested in May 2005 by US Fish and Wildlife Service (USFWS) Special Agents at LaGuardia International Airport in New York City for similar offences in the USA. The charges conclude a 17-month investigation jointly undertaken by special agents of the USFWS and federal wildlife officers employed by Environment Canada's Canadian Wildlife Service in Ontario.

Environment Canada News Release, 14 March/14 July 2005: www.ec.gc.ca/media_e.htm; Fisheries and Oceans Canada news release, 8 June 2005: www-comm.pac.dfo-mpo.gc.ca/pages/release/p-releases/2005/nr042_e.htm

USA

On 22 July 2005, at the federal court in Columbus, Ohio, Donald B. Hamper, a former reptile dealer from Columbus, was sentenced to one year and one day confinement and fined USD3300 after pleading guilty in February to illegally buying, selling and transporting Blanding's Turtles *Emydoidea blandingii* and other wildlife protected by federal and State laws. He was also ordered to pay USD7000 in restitution to Michigan's Fish and Game Protection Fund and will be placed on three years' supervised probation following his release from gaol, during which time he is prohibited from handling any reptiles or amphibians.

In his plea agreement, Hamper admitted that between June 2001 and June 2003, he knowingly participated in illegal interstate purchases and sales involving 53 Blanding's Turtles and other wildlife including spotted turtles, wood turtles, and several species of snakes (species not reported). Hamper also faced prosecution in Franklin County for offences involving record keeping, tagging and harbouring numerous venomous Gila Monsters *Heloderma suspectum* and Beaded Lizards *H. horridum* (both CITES II). As part of a separate plea agreement with Franklin County Prosecutor's Office, Hamper agreed to relinquish ownership of all wildlife seized from him during the course of the investigation. He agreed to donate USD2500 to the Wildlife Education Fund operated by the Ohio Department of Natural Resources and publish a statement in Reptile Magazine acknowledging his criminal conduct and describing his penalties.

<http://ars.fws.gov>

< A WILDLIFE OFFICER EXAMINES A SHIPMENT OF OBLONG TURTLES *CHELODINA OBLONGA* INTERCEPTED BY CUSTOMS IN AUSTRALIA IN MARCH 2004 FOLLOWING AN ATTEMPT TO EXPORT THEM TO JAPAN.



A MODEL FOR AFRICA : ETHIOPIA'S EFFORTS TO CLOSE UNREGULATED DOMESTIC IVORY MARKETS IN ADDIS ABABA

Simon Milledge and Mohammed Abdi

Illegal hunting and trade in ivory are the major reasons for the rapid decline in elephant populations in Ethiopia over the past two decades. In 2002, at the twelfth meeting of the Conference of the Parties to CITES (CoP12) Parties agreed to target 10 countries, including Ethiopia, that had large unregulated domestic ivory markets, lack of regulation of which was identified as needing attention as a matter of priority. By the time of CITES CoP13, in October 2004, Ethiopia was among six of the countries that continued to have significantly large and unregulated domestic ivory markets.

The conservation impact of insufficient wildlife trade controls has affected not only elephant and other wildlife populations within Ethiopia, but also those across national borders. Building on previous experience in neighbouring countries, in 2004 TRAFFIC devised a strategy that would provide Ethiopia with CITES training, and assistance with law enforcement and market monitoring. As a result of these initiatives and a renewed commitment by the Government of Ethiopia to eliminate the unregulated domestic ivory trade, there have been several positive enforcement results. These have included a marked reduction in ivory openly sold at souvenir shops throughout Addis Ababa as a result of a large-scale enforcement campaign conducted in January 2005, with an eight-fold reduction in the number of outlets and a 98% decline in the total number of ivory items counted in just over one year. Positive action has also included improved ETIS¹ reporting, finalization of an outstanding ivory theft case, and reform of national wildlife policy and legislation.

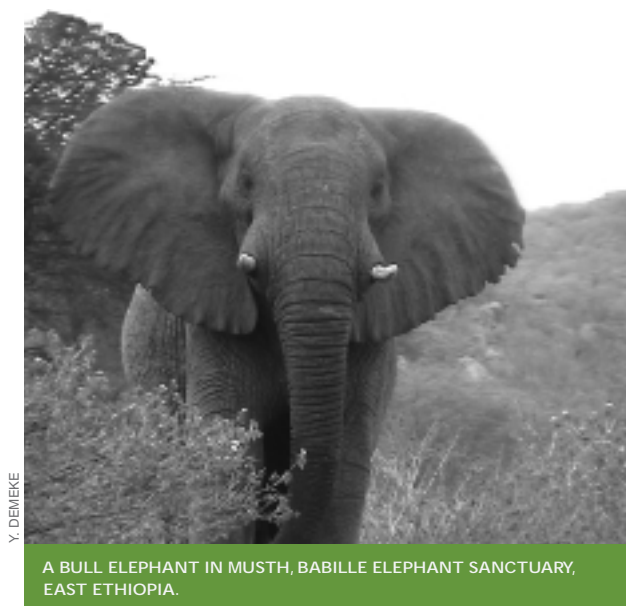
The formalization of inter-agency co-ordination, and collaboration with the CITES Secretariat, TRAFFIC and neighbouring countries, appear to have been important ingredients for success to date, and, when applied to training, law enforcement and market monitoring, constitute a good model for other African nations to follow.

The positive results achieved to date also serve to demonstrate that the CITES initiative to target countries with large unregulated domestic ivory markets is going some way towards effectively addressing this problem. However, Ethiopia's geopolitical influence and growing transport sector both serve to highlight the country's potential role as a focal point for ivory movements within the region. There remains a strong need to maintain momentum enforcing existing regulations at domestic markets in Addis Ababa, as well as working on further improvement to ETIS implementation, law enforcement at Customs points, stockpile management and raising awareness.

INTRODUCTION

CITES Decision 12.39, adopted at CoP12 in 2002, targeted ten "priority" countries with large unregulated domestic ivory markets in order to demonstrate compliance with Resolution Conf. 10.10 (Rev. CoP12) through an intersessional process under the direction of the CITES Standing Committee (Anon., 2004b). Following comprehensive analysis of ETIS¹ data, which were presented at CoP12, Ethiopia was identified as having the largest unregulated ivory market in East Africa (Milliken *et al.*, 2002a,b,c). Almost 10 000 ivory pieces were doc-

¹ ETIS, the Elephant Trade Information System managed by TRAFFIC, is a CITES-approved system for monitoring levels and trends of illegal trade in ivory and other elephant products. TRAFFIC, in collaboration with the University of Reading's Statistical Services Centre, produces a comprehensive analytical report to each meeting of the Conference of the Parties to CITES. These reports play a vital role in the discussion and formulation of policies for elephants under the Convention.



umented from 54 retail outlets in Addis Ababa during surveys conducted in 1999 (Martin and Stiles, 2000). As required by Resolution Conf. 10.10, TRAFFIC produced a second comprehensive analysis of the ETIS data at CoP13 in October 2004 (Milliken *et al.*, 2004). Assessing over 9400 records of elephant products seized globally using various statistical analysis techniques, the ETIS report was able to identify key players in the illicit trade in ivory and to measure trends, changes in trends, and their relationship with relevant events under CITES. Ethiopia, together with Cameroon, China, the Democratic Republic of Congo, Nigeria and Thailand, were identified as the countries most highly implicated in this trade, with the Chinese market cited as the principal driving force behind the increasing trend in illicit trade in ivory worldwide.

The ETIS analyses presented at CITES CoP12 and CoP13 demonstrated that illicit trade in ivory is most directly related to the presence of large-scale unregulated domestic ivory markets. As well as having the largest unregulated ivory market in East Africa, other major

challenges facing Ethiopia in terms of effective law enforcement is the large size of the country, coupled with a decentralized approach to government administration, including the regulation of trade in wildlife. Considering the limited financial and human resources that are available to the wildlife sector, many protected areas in Ethiopia have insufficient patrol coverage, whilst similar deficiencies are evident in the departments responsible for conducting investigations and prosecuting offenders. Low staff capacity is one of the reasons resulting in relatively few seizures of elephant products being made in Ethiopia, as compared to the number of seizures made elsewhere in the world which implicate Ethiopia. At the same time, ivory seizures not reported to ETIS also contribute towards the overall perception that law enforcement effort in Ethiopia is poor.

The role of Ethiopia as both a source and transit route for wildlife contraband other than elephant ivory has also been well documented. Of particular concern is the role that Ethiopia has played as a transit country for rhinoceros horn originating in Kenya, the Democratic Republic of Congo, and possibly from within Ethiopia itself, over the past two decades (Barnett, 2000; Martin and Vigne, 2003). Other wildlife contraband traded in, and from, Ethiopia, includes Ostrich *Struthio camelus* eggs, Hippopotamus *Hippopotamus amphibius* tusks, and the skins from large spotted cats, antelope, black-and-white Colobus *Colobus* sp. monkey and python *Python*.

Beginning in early 2004, TRAFFIC employed a similar approach to Ethiopia that it had taken with Djibouti, one of the ten countries identified in 2002 as having a large unregulated domestic ivory market. At that time, in collaboration with Djibouti's Office of the Environment, TRAFFIC provided Djibouti with basic CITES training, assistance with law enforcement at domestic wildlife markets in Djibouti-ville and ongoing market monitoring to measure impact. The resulting significant decline in the open illegal sale of wildlife contraband observed following a major crackdown on the trade in June 2001 and the drop in levels of illegal trade recorded during the ETIS analysis meant that Djibouti was not identified as a "priority" country in the second ETIS analysis to CITES CoP13 (Milliken *et al.*, 2004).

To this end, and in recognition of the fact that unregulated domestic ivory markets are having the most significant impact on the illicit global ivory trade, in 2004, in collaboration with the CITES Secretariat and the Ethiopian Ministry of Agriculture and Rural Development, Wildlife Conservation Department, a major capacity-building effort was undertaken by TRAFFIC in Ethiopia which focused on the large-scale unregulated domestic ivory market of Addis Ababa (Anon., 2004c). Training was provided and assistance given to law enforcement efforts and market monitoring. This article serves to underline the role Ethiopia has played as a hub for ivory trade in the region, and to highlight the positive steps recently taken to address this situation. It also outlines measures taken by Ethiopia to implement the *Action plan for the control of trade in African elephant ivory*, endorsed at CoP13 in 2004 (Decision 13.26).



FIGURE 1. MAP OF ETHIOPIA AND SURROUNDING COUNTRIES.

	1997	1998	1999	1999/2000	2000/2001	2001/2002
Elephant population estimate	300	-	-	-	-	200
Detected poached elephants	11	12	11	3	9	3

Table 1. Records of elephant numbers and poaching incidents in Mago National Park, 1997-2002. - = figures not available

Sources: Anon., 2004a; Blanc *et al.*, 2003; Barnes *et al.*, 1999; Demeke, 2003

METHODS

Surveys of all known souvenir markets selling ivory in Addis Ababa were conducted on two occasions during April 2004 and March 2005. The majority of souvenir markets are found in and around three main locations: the vicinity of Churchill Road, Tekle Haimanot Square, and the Mercato market. In addition, some souvenir shops are also found in various hotels and isolated streets, and at Bole International Airport that serves the capital city. The same researcher conducted both surveys. During the April 2004 survey, the number of souvenir shops selling ivory was recorded, as well as the total number of ivory pieces observed on sale. Three categories of ivory piece were described: carved tusk (i.e. a complete ivory tusk), ivory carvings (i.e. made from smaller pieces of tusk) and ivory jewellery (including name seals). Additional information on prices, origin of ivory, and nationality of major buyers was collected wherever possible. Other wildlife products on sale were also recorded during the survey. In March 2005, the same survey technique was again used for a sample of souvenir shops in each of the three main locations. The timing of the two surveys was specifically designed to measure the impact of the training described below. Exchange rates used in currency conversions in April 2004 and March 2005 were Ethiopian Birr ETB8.63 and ETB8.65 to USD1.00, respectively.

In response to Ethiopia's commitment to CITES implementation and willingness to improve enforcement measures, a workshop was held in Addis Ababa, from 28 June to 1 July 2004. The *CITES and Wildlife Law Enforcement Training Workshop* was organized by the CITES Secretariat and TRAFFIC East/Southern Africa, in collaboration with Ethiopia's Ministry of Agriculture and Rural Development, Wildlife Conservation Department (EWCD), with funding from WWF. Over 40 officials from national law enforcement organizations and other relevant institutions attended the event which focused on building Ethiopia's capacity to implement its domestic wildlife legislation and meet the country's obligations under CITES.

The ETIS data-gathering protocol is prescribed in CITES Resolution Conf. 10.10 (Rev. CoP12), and involves submission of standardized forms for each individual seizure of elephant ivory or other product. These forms are sent to the CITES Secretariat and forwarded to TRAFFIC for subsequent data entry and analysis. Milliken *et al.* (2004) describe in detail the techniques used to analyse the nine components of the ETIS database and assess Ethiopia's participation in ETIS.

DISTRIBUTION AND STATUS

By the early 1970s, African Elephants *Loxodonta africana* were largely confined to the south-west of the country, with their population estimated at 5000 to 6000 but showing signs of regression. Another guess, however, put the population at 8700 elephants in 1986. Four years later, and after the end of the civil war, Allen-Rowlandson (1990) suggested a total population of 2450 (Blanc *et al.*, 2003). In 2002, the population of elephants in Ethiopia was put at a definite 396, with a total - categorized as an informed guess - of 1696 (Blanc *et al.*, 2003).

Elephant range currently covers just four per cent of Ethiopia's land area, one fifth of which occurs within protected areas (Blanc *et al.*, 2003). Most elephants are found in the south-west in small, fragmented and highly mobile populations. The *African Elephant Status Report 2002* reported that Ethiopia is one of the countries in most danger of losing its elephant populations (Blanc *et al.*, 2003). Limited protection, human encroachment and unsustainable land-use practices were listed as the most serious threats to their survival.

Illegal hunting and trade in ivory are the major reasons for the rapid decline in elephant populations within Ethiopia over the past two decades. For example, populations in the Omo-Mago complex in the south-west have declined by 84% - from around 2000 individuals in 1984 to just 324 in 2002 (Blanc *et al.*, 2003; Douglas-Hamilton, 1987). Graham *et al.* (1997) reported illegal hunting as the cause for the declining elephant population in the Omo-Mago complex, whilst Demeke (1997) specifically linked the demand for ivory as the driving force behind poaching in this part of the country. Recent data from Mago National Park show that 49 poached elephants were detected between 1997 and 2002, accounting for half of the observed population decline during the same period (Table 1). It is likely that other elephants were also poached, but their carcasses went undetected due to low patrol coverage. Whilst the number of scouts responsible for patrolling was increased from eight in 1996 to 23 in 2002, the patrol coverage of one scout per 94 km² was still considered insufficient (Demeke, 2003). In addition, elephants have been killed outside park areas. Demeke and Bekele (2000) received reports from local villagers that 19 elephants were killed by people living adjacent to Mago National Park, in addition to seven carcasses counted inside the park, between August 1997 and April 1998. A similar story can be told for elephant populations in other protected areas.

The impact of Ethiopia's ivory trade extends beyond its national boundary into neighbouring countries. Craftsmen in Addis Ababa reported in 1993 and 1999 that ivory originated from elephants not only in south-west Ethiopia, but also in Kenya and southern Sudan (Martin and Stiles, 2000). By the mid-1990s, illegal ivory trade on the Ethiopia-Kenya border was identified as a continuing problem facing law enforcement authorities (Dublin *et al.*, 1995). Since that time, ETIS records highlight the challenge of traders taking advantage of relatively porous sections of the southern Ethiopia border, with a number of important ivory seizures involving towns in northern Kenya. Since 1999, over 900 kg of ivory have been seized in both countries at, or close to, this border. Ethiopian nationals have also been implicated in ivory seizure cases made in Kenya. In October 1993, over 800 kg of ivory were confiscated from five South Koreans, an Ethiopian and two Kenyans operating out of a Nairobi suburb (Dublin *et al.*, 1995).

It is likely that elephant populations in neighbouring countries nearest to the Ethiopian border have been the most affected by ivory trade to Ethiopia. Reliable elephant survey data exist for Kenya, where the largest elephant populations outside protected areas occur in Isiolo, Laikipia and Marsabit districts in the north of the country. Evidence of population declines can be demonstrated for some areas nearest the Ethiopian border. Omondi *et al.* (2002) reported a decreasing population and increasing carcass ratio (i.e. ratio of carcasses to live elephants) in the Nasolot-South Turkana and Kerio Valley-Kamnarok conservation areas of Kenya between 1997 and 2002 (Table 2). The highest number of poaching incidents was recorded in Samburu and Laikipia Districts during 2002, with 33 tusks seized in February 2003 between Laresoro and Marsabit following increased intelligence operations (Anon., 2003). Pressure on elephants in this part of Kenya is not a new development, however; a group of elephant carcasses was found near the Ethiopian border in mid-1993 (Vigne and Martin, 1993). At the same time, other elephant populations in the northern range limits of Kenya have increased, for example the Samburu-Laikipia ecosystem, where numbers have consistently risen - from 2969 in 1992 to 5447 in 2002 (Barnes *et al.*, 1999; Blanc *et al.*, 2003).

In Ethiopia, the Gambella region has consistently been reported as the primary source of Ethiopian ivory. However, with an estimated 200 elephants left in Gambella National Park, it is likely that the majority of this ivory is actually derived from southern Sudan and south-west Ethiopia. Civil unrest in neighbouring Sudan

has prevented any quantitative elephant population surveys from being undertaken in that country since the early 1980s. Current estimates of Sudan's elephant numbers range between 20 and 300 elephants, representing a massive decline from the 22 000-44 600 individuals estimated in a 1991 review, but over 400 000 km² of potential elephant range remains completely unassessed (Blanc *et al.*, 2003). It is believed that a portion of the ivory derived from elephant poaching in southern Sudan would have made its way to carvers and middlemen in Addis Ababa. ETIS records are notably absent of ivory seizures mentioning Sudan as a source, transit, exporting or destination country, an artefact of low law enforcement effort and reporting.

Litoroh (1997) reported two elephant carcasses in Ethiopia, very close to the sole elephant population in Eritrea - Gash Setit Area - where some 70 individuals were counted in 1995. However, elephant numbers have remained relatively constant at between 70 and 100 since 1995 (Blanc *et al.*, 2003; Shoshani *et al.*, 2004). In Somalia, remnant elephant populations closest to the Kenya border declined from 130 to 70 between 1995 and 2002 (Barnes *et al.*, 1999; Blanc *et al.*, 2003).

LEGISLATION

The first formal wildlife conservation efforts in Ethiopia started in 1909, when Emperor Menelik II passed a decree to regulate hunting, especially of elephants (Hundessa, 1995). In more modern times, various proclamations and regulations have been issued to cover activities within protected areas and wildlife utilization, as published in *Negarit Gazeta* 1972, 1980 and 1994. However, these were repealed in 2005 following enactment of the *Development, Conservation and Utilization of Wildlife Proclamation of 2005*.

In addition to designating wildlife conservation areas to be administered by the Federal Government, Regional Government, private investors and local communities, this proclamation covers the hunting, collection and trade in wildlife. The trade in wildlife or their products, ownership, sale, transfer, export or import of any processed or unprocessed wildlife product is prohibited unless a permit is obtained from the Ministry of Agriculture and Rural Development or concerned regional organ. Permits must also abide by the provisions of treaties to which Ethiopia is a party. Unless a violation entails a higher penalty under the Penal Code, any person who commits an act of illegal wildlife hunting or trade, or is found in possession of wildlife or wildlife products without the necessary permit, may be punished with a fine not less than ETB5000 (approximately USD578) and not exceeding ETB30 000 (USD3468) and/or imprisonment of not less than one year and not exceeding five years. The proclamation also allows for the confiscation and disposal of any wildlife product and weapon. Whilst Demeke (2003) noted concern that the penal acts currently working in Ethiopia did not sufficiently deter wildlife offenders, the recently revised legislation has ensured heavier sentences for wildlife offences.

	1997	1999	2002
Live elephants	852	792	490
Number of carcasses	13	45	62
Carcasses as a % of live population	1.5	5.4	11.2

Table 2. Records of elephant numbers and carcasses in the Nasolot-Turkana ecosystem, Kenya, on the border with Ethiopia, 1997-2002. Source: Omondi *et al.*, 2002

Location in Addis Ababa	NO. OF OUTLETS		ESTIMATED NO. OF IVORY PIECES		
	Total	Selling ivory	Carved tusks	Carvings	Jewellery and name seals
Mercato market - enclosed stalls	39	20	0	600	1000
Mercato market - open air stalls	15	12	0	150	260
Tekle Haimanot Square	2	2	6	120	0
Post Office vicinity	28	10	0	305	500
Churchill Road	12	6	21	430	75
Other locations - hotels, airport	5	1	0	50	40
Total	101	51	27	1655	1875

Table 3. Wildlife products observed at Addis Ababa souvenir shops, April 2004.

Product	ETB	USD	Product	ETB	USD
Blank ivory name seal	65	8	Leopard skin	750-2200	87-256
10 cm ivory carving	450	52	Lion skin	550	64
Necklace, large ivory beads	160	19	Colobus monkey skin rug	500-1200	58-140
Raw ivory (price per kg)	200-300	23-35	Buffalo shield	500	58

Table 4. Selection of wildlife products and prices at Addis Ababa souvenir shops, April 2004.

The *Wildlife Development, Protection and Utilization Policy and Strategy*, also passed in 2005, covers the control of traffic in wildlife and wildlife products, and implementation of international laws and conventions concerning wildlife trade. Ethiopia acceded to CITES in 1989. The EWCD is the nominated CITES Management and Scientific Authority for Ethiopia. During the 50th meeting of the CITES Standing Committee in March 2004, and based upon information supplied by EWCD, the Secretariat reported that active internal ivory markets in Ethiopia are illegal (Anon., 2004b).

RESULTS

Souvenir market survey, April 2004, carried out prior to CITES training

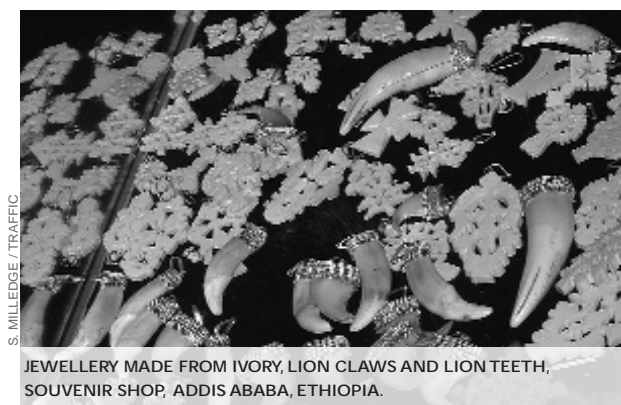
During April 2004, a total of 101 souvenir and market stalls in Addis Ababa were surveyed. These outlets were selling a range of goods including wooden carvings, antique artefacts, shields, spears, religious items, jewellery, name seals, baskets, rugs and other woven items. The main buyers include tourists and other visitors to Addis Ababa, including the relatively large diplomatic community.

A total of 3557 ivory items were counted from 51 outlets (50%), averaging 70 ivory pieces per outlet (Table 3). Ivory items included 27 carved tusks, 1655 carvings and 1875 pieces of jewellery and name seals. Other CITES-listed products included 14 pieces of rhinoceros horn (antique handles of long-bladed fighting swords, reportedly from the Afar region), four black-and-white colobus monkey *Colobus* sp. skin rugs (each rug made from up to 24 individual skins), 25 skins and four rugs made from large cats (Leopard *Panthera pardus*, Lion *P. leo* and Serval *Leptailurus serval*). Additional wildlife items on sale included 189 Ostrich eggs, Hippopotamus and Warthog *Phacochoerus* spp. tusks, antelope skulls and skins, python skins, antique African Buffalo *Syncerus caffer* skin shields and Crested Porcupine *Hystrix cristata* quills.

Most dealers claimed that the majority of elephant ivory originated from Ethiopia, with smaller quantities from Sudan and Kenya. The Gambella region was quoted as a primary source of Ethiopian ivory. Table 4 illustrates prices of various wildlife products in April 2004, which were compared with those recorded during the 1990s (Asadi, 1995; Martin and Stiles, 2000; Vigne and Martin, 1993).

Inter-agency co-operation and co-ordination

The CITES training event, held in mid-2004, was noteworthy as the first such occasion to discuss wildlife law enforcement issues, share experiences and engage in inter-agency networking on such a scale in Ethiopia. An outcome of the presentations and supplementary discussions was a common realization among the delegates and agencies represented that poaching and illegal trade in wildlife has reached serious levels in Ethiopia, which was noted to be a country of export, re-export and transit for specimens of CITES-listed species. It was further noted that many wildlife populations in Ethiopia have declined dramatically and that urgent action is required to safeguard their future. Subsequent to the training event,



S. MILLEDGE / TRAFFIC

JEWELLERY MADE FROM IVORY, LION CLAWS AND LION TEETH, SOUVENIR SHOP, ADDIS ABABA, ETHIOPIA.

YEAR	NO. OF OUTLETS			NO. OF IVORY PIECES	
	Total visited	Selling ivory	% selling ivory	Products counted	Average per outlet
2004	101	51	50.5	3557	70
2005	82	5	6.1	78	16

Table 5. Summary comparison of ivory product surveys in Addis Ababa, April 2004 and March 2005.

YEARS	REPORTED TO ETIS BY APRIL 2005			NOT YET REPORTED TO ETIS			GRAND TOTAL
	Raw	Worked	Total	Raw	Worked	Total	
1991-1997	1272.9	19.3	1292.2	0	0	0	1292.2
1998-2004	1397.8	131.8	1529.6	466.0	141.0	607.0	2136.6
Total	2670.7	151.1	2891.8	466.0	141.0	607.0	3428.8

Table 6. Weight (kg) of ivory seized in Ethiopia, 1991-2004.

participants reconstituted a committee of relevant government representatives first formed in 2003 to address the issue of illegal domestic sales of wildlife products.

The committee immediately adopted a resolution specifically to address the threats posed by illegal wildlife trade on Ethiopia's wildlife and tourism sectors. This resolution also recognizes the relevant CITES Resolutions and Decisions. Amongst other measures, it recommended that the EWCD should immediately halt the sale of any wildlife products in the souvenir shops in Addis Ababa and its environs. Importantly, members of the committee recognized the need for strong collaboration between EWCD and other relevant institutions in the country to achieve the ultimate goal of halting trade in endangered species of plants and animals in Ethiopia.

Law enforcement operation in Addis Ababa

Following the 2004 CITES training event, members of the newly constituted committee spent four months preparing for a law enforcement operation targeting souvenir shops in Addis Ababa. Preparations included covert inspection of retail outlets selling ivory, planning co-ordination amongst participating institutions, and ensuring the support from the Addis Ababa City Council, Police Commission and Ministry of Agriculture and Rural Development. In January 2005, 66 outlets in the subdistricts of Addis Ketema, Arada, Bole and Kirkos were raided by the combined effort of 262 officers, including 50 code enforcement guards, 136 policemen, 66 security guards and 10 wildlife inspectors. A total of

around 500 kg of ivory and other illegal wildlife products valued at ETB1 million (USD115 600) were confiscated, and charges made against personnel at all 66 outlets. They face a ETB5000 (USD578) fine and up to two years in prison. Approximately half of the total confiscated ivory came from one of the four dealers licensed to trade in wildlife products.

Souvenir market survey, March 2005, post law enforcement operation

A sample of 82 outlets was surveyed from all major locations in Addis Ababa during March 2005. The results confirmed the impact of the law enforcement operation three months earlier, with much less ivory openly on sale and a definite change in traders' perceptions noted. A total of 45 small ivory carvings and 33 pieces of jewellery were counted in just five outlets. However, some traders also had small quantities of ivory items in bags concealed under the counter or otherwise hidden from public view. Nevertheless, these results represent a large decline in ivory offered for sale when compared to the April 2004 survey, both in terms of the proportion of souvenir outlets selling ivory and the average number of ivory items counted in these outlets (Table 5). As an example of the impact of this operation, only two ivory items (large, stained vases that were not easily recognizable as elephant ivory) were seen in one of the larger souvenir shops in Addis Ababa, located along Churchill road, which, at the time of the January 2005 operation had accounted for almost half of the ivory seized.

Date	Addis Ababa Government store	Addis Ababa Taxidermy Co-operative	Legal, private dealers	Source of information
December 1993	3100.00	-	1362.43	TRAFFIC inventory
January 1998	3218.30	539.50	-	TRAFFIC audit, pursuant to CITES Decision 10.3
April 2004	3530.20	539.50	1250.66	EWCD documentation
September 2004	3786.25	539.50	1250.66	EWCD documentation

Table 7. Weight (kg) of ivory stockpiles in Addis Ababa, 1993-2004. - = figures not available
Sources: Bodasing, 1998; Milliken, 1996; T. Hailu, EWCD, in litt. to S. Milledge, September 2004.

In addition, a marked change in traders' attitudes towards ivory sales has occurred. Awareness regarding the illegality of ivory sales (and other products from endangered wildlife) has always been relatively high. However, as opposed to April 2004 when traders showed almost total disregard of both existing wildlife-related legislation and enforcement officers, traders are now more reluctant to engage in ivory trade, citing higher levels of enforcement as the main reason. At the same time, retail prices for remaining ivory items have doubled, probably a direct result of the higher risks now involved.

Ivory seizure reporting to ETIS

One of the factors contributing to the inclusion of Ethiopia amongst "priority" countries with respect to global illegal ivory trade has been its relatively low law enforcement effort and rate of reporting to ETIS. The third ETIS Country Report on Ethiopia (all cases between 1 January 1989 and 26 September 2002) listed only five seizures, all raw ivory, as having been made in Ethiopia. In contrast, other Parties to CITES reported 154 cases of seized ivory originating from Ethiopia (Anon., 2004e). During mid-2004, TRAFFIC subsequently received information concerning an additional 101 ivory seizures made in Ethiopia since the early 1990s (Anon., 2004d). Following the CITES training event, Ethiopia submitted another 83 ETIS forms. By April 2005, ETIS contained a total of 88 cases amounting to 2671 kg of raw ivory and 151 kg of worked ivory (Table 6). However, some 18 cases involving 607 kg of ivory (all seized from Addis Ababa's international airport since 1998) apparently remain outstanding. Table 6 also shows how the quantity of ivory seized in Ethiopia has increased in recent years.

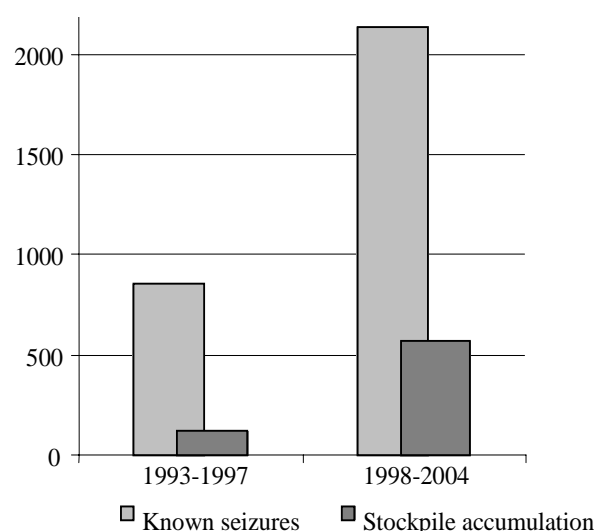


Figure 2. Comparison of weight (kg) of ivory seized and accumulated at Addis Ababa Government store.

Ivory stockpile management

In September 2004, EWCD confirmed the existence of 6097.02 kg ivory, including 3786.25 kg in the Addis Ababa Government store and Mago National Park, and 1790.16 kg registered ivory in the hands of wildlife traders and Addis Ababa Taxidermy Co-operative (Table 7). However, it was also reported that around 1700 kg of ivory was stolen during the first half of 2003. Following the 2004 training event, legal action was taken against the ex-store keeper of the Addis Ababa Government store who was found guilty and fined ETB1000 (USD116) and sentenced to five years' imprisonment. He was subsequently released on bail after serving six months.



< **PAINTED OSTRICH EGGS ON SALE IN ADDIS ABABA, APRIL 2004.**



< **CONFISCATED MOUNTED LEOPARD SKINS IN THE GOVERNMENT STORE.**



RUG MADE OF COLOBUS MONKEY SKINS ON SALE IN ADDIS ABABA, APRIL 2004

PHOTOGRAPHS: S. MILLEDGE / TRAFFIC



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SOUVENIR MARKET, ADDIS ABABA.

Stockpiled ivory primarily consists of ivory that has been seized or collected from the field. Whilst Table 7 shows how the amount of ivory in the Government store has progressively increased by a total of 686.25 kg since December 1993, EWCD records indicate more than four times this quantity alone was seized during the same period. A total of 2990.40 kg of ivory was seized since the beginning of 1994, including 2700.70 kg of raw ivory (825 pieces) and 289.70 kg of worked ivory (1698 pieces). The unaccounted 2304 kg is much higher than the 1700 kg estimated by EWCD as stolen during 2003. Disregarding ivory collected from the field that would further add to stockpile volumes, Figure 2 illustrates how the stockpile accumulation between successive audits/declarations has differed from the volume of seizures during both periods.

A cursory analysis of stocks in private hands indicates the strong possibility that licensed wildlife dealers have also been trading in illegally sourced ivory. Whilst the quantity of ivory legally held by four licensed dealers declined by 112 kg during the ten-year period from December 1993 to April 2004 (Table 7), the quantity seized from the premises of one dealer alone in January 2005 was around twice this amount.



Y. DEMEKE

YOUNG BULL ELEPHANT, BABILLE ELEPHANT SANCTUARY, EAST ETHIOPIA.

DISCUSSION

Available evidence indicates a steadily declining domestic ivory market in Addis Ababa over the past decade. An estimated 10-15 ivory craftsmen remained in the city during the late 1990s, whereas twice the number could be found in one workshop alone earlier in the decade (Martin and Stiles, 2000; Stiles and Martin, 2001; Vigne and Martin, 1993). Stiles and Martin (2001) also reported that remaining craftsmen were not working full time in ivory, indicating an unpromising future for crafting and sales of worked ivory in Ethiopia. Indeed, the total quantity of ivory counted during the April 2004 study was 36 per cent of the quantity counted in 1999 (Martin and Stiles, 2000). Nevertheless, by CITES CoP13 in October 2004, Ethiopia remained amongst six "priority" countries with significantly large and unregulated domestic ivory markets.

Since the beginning of 2004, the Government of Ethiopia has demonstrated a renewed commitment to eliminate unregulated domestic ivory markets, achieving commendable results. The enforcement campaign conducted in January 2005 has resulted in a marked reduction in ivory openly sold at souvenir shops throughout Addis Ababa. Surveys conducted in May 2005 recorded only two per cent of the number of ivory items counted one year earlier, and confirmed an eight-fold reduction in the number of outlets openly selling ivory. Further, traders' perceptions had changed remarkably, many now believing that it was a serious risk to operate illegally and sell ivory products openly.

In this way, Ethiopia has taken a major step towards implementing two of the key actions required of all African Elephant range States in the *Action plan for the control of trade in African elephant ivory*, namely to "prohibit the unregulated domestic sale of ivory (raw, semi-worked or worked)" and to "issue instructions to all law enforcement and border control agencies to enforce existing or new legislation rigorously" (CITES Decision 13.26).

Such a comprehensive and effective law enforcement effort would not have been possible without inter-agency co-ordination and co-operation as a means of ensuring support from high-level management of relevant government institutions and combining limited resources. Inter-agency collaboration also helped to minimize potential bureaucratic delays (such as bringing the outstanding ivory stockpile theft case to conclusion and expediting the raid on souvenir shops) and reduce the risk of corruption jeopardizing legal and transparent processes. The model for formalizing inter-agency co-ordination, through mobilization of a dedicated committee and passing of a resolution, appears to have worked well for Ethiopia. Enforcement has also benefited through collaboration with certain neighbouring countries (in particular Kenya), the CITES Secretariat and TRAFFIC. Political support and momentum gained in the past year has also ensured that both wildlife policy and legislation have been revised during 2005, including

increased sentences for offenders, clear commitment to international treaties and clearer guidelines for legal wildlife utilization.

Whilst a surge in enforcement activity occurred during January 2005, it is also clear that officers have regularly made seizures of both worked and raw ivory. However, the absence of reporting to ETIS resulted in analyses that misrepresented genuine enforcement efforts in the country. Indeed, there remains a need to improve ETIS reporting further in order to capture fully the actual enforcement levels occurring in Ethiopia, along with gaining a better understanding of ivory trade dynamics in this part of Africa.

The Government store theft, together with uncertainties over the location of seizures made over the past 15 years, underlines the importance of an adequate stockpile management system, which covers the marking, registration, storage and security of all ivory according to accepted best practices (Milledge, 2005).

Whilst it is unfortunate that these enforcement efforts have been largely in reaction to international attention as opposed to being internally driven, the positive results achieved to date do serve to demonstrate that the CITES intersessional process is effectively addressing some "priority", unregulated domestic ivory markets.

Ethiopia epitomizes the challenge faced by countries with a significant wildlife resource base and growing transport sector. Ethiopia's role as a transit route for many wildlife products has increased in recent years, following the rising importance of Bole International Airport as a hub for Ethiopian Airways. This airline is well connected to destinations in central and west Africa, as well as Thailand and China, both major consuming countries of ivory. Ethiopia also functions as an important trade route within the Horn of Africa, and the growing importance of its road link to neighbouring Djibouti for onward maritime shipping is a key element. Civil unrest in neighbouring countries, in particular Sudan and Somalia, also presents the threat of illegal syndicates operating across Ethiopia's borders. Taking into account

its dynamic tourist, business and diplomatic community, these factors serve to increase the likelihood of wildlife contraband passing through Ethiopia. It is therefore important to keep monitoring Ethiopia's trade in wildlife to ensure that, firstly, the declining domestic ivory market is not a temporary phenomenon and, secondly, to avoid complacency regarding the country's potential role as a focal point for ivory movements within the region.



RECOMMENDATIONS

The lessons learnt in Ethiopia provide good insight on how to maintain momentum by building on the foundation of achievements to date, as well as how to address similar wildlife enforcement challenges elsewhere. The following actions are recommended:

1. Under the co-ordination of the EWCD, it is essential that the committee examining the threats posed by illegal wildlife trade remains fully functional, ensuring meetings be held at least twice a year to review progress.
2. Market monitoring and enforcement efforts must continue, since unknown quantities of ivory remain in some souvenir stalls on open display and hidden from public view.
3. Border control agencies should exercise vigilance at major entry and exit points (e.g. Bole International Airport, and border crossings with Kenya, Sudan and Djibouti), to prevent the transit of ivory through the country.
4. Law enforcement officers should be provided with specialist training in the identification of wildlife products.
5. Renewed efforts are required to register and monitor wildlife products held in private hands.
6. As called for in CITES Decision 13.26, relevant institutions should increase efforts to *engage in public awareness campaigns publicizing existing prohibitions on ivory sales*. Raising awareness is required at many levels, including Government, general public and visitors to Ethiopia.
7. EWCD should ensure all outstanding ivory seizure cases are reported using ETIS forms. Further, care should be taken to ensure the dates used on ETIS forms follow the Gregorian calendar (as opposed to the Ethiopian calendar).
8. Recently revised legislation needs to be completed through the development of regulations to ensure adequate protection of Ethiopia's endangered wildlife, whilst meeting basic CITES requirements.
9. The Ethiopian Government should arrange an independent audit of the ivory stock held in Ethiopia, and efforts should be made to improve the ivory stockpile management system.

ACKNOWLEDGEMENTS

The WWF Africa Rhino and Elephant Programmes provided funding for this work. Special thanks are extended to Prof. Tekalign Mamo (Minister of State), Tadesse Hailu (Director, EWCD), John Sellar (Senior Enforcement Officer, CITES Secretariat) and all participants at the training workshop. Tom Milliken, Dr Esmond Martin, Dr Taye Teferi, Lucy Vigne, Steven Broad and Kim Lochen critically reviewed this article.

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