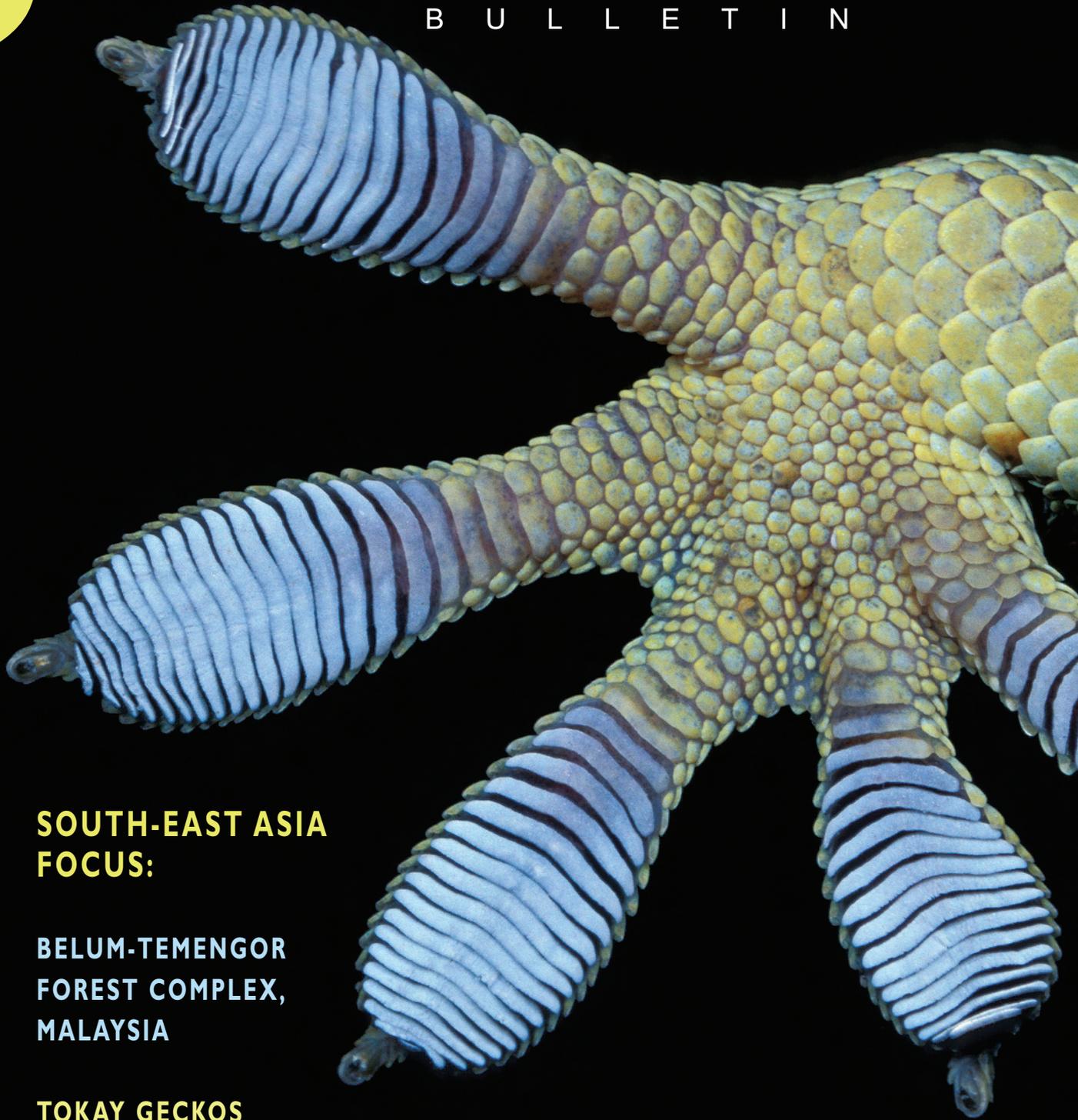


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TRAFFIC

BULLETIN



SOUTH-EAST ASIA FOCUS:

**BELUM-TEMENGOR
FOREST COMPLEX,
MALAYSIA**

TOKAY GECKOS

BIRDS-OF-PARADISE

OCTOBER 2011

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

TRAFFIC

the wildlife trade monitoring network

TRAFFIC was established in 1976 to perform what remains a unique role as a global specialist leading and supporting efforts to identify and address conservation challenges and solutions linked to trade in wild animals and plants.



TRAFFIC's Vision is of a world in which trade in wild plants and animals is managed at sustainable levels without damaging the integrity of ecological systems and in such a manner that it makes a significant contribution to human needs, supports local and national economies and helps to motivate commitments to the conservation of wild species and their habitats.

TRAFFIC

Trade in wildlife is vital to meeting the needs of a significant proportion of the world's population. Products derived from tens of thousands of species of plants and animals are traded and used for the purposes of, among other things, medicine, food, fuel, building materials, clothing and ornamentation.

Most of the trade is legal and much of it sustainable, but a significant proportion is not. As well as threatening these resources, unsustainable trade can also lead to species declining in the wild to the point that they are threatened with extinction. Illegal trade undermines local, national and international efforts to manage wild natural resources sustainably and causes massive economic losses.

TRAFFIC is a joint programme of WWF and IUCN, the International Union for Conservation of Nature. The role of TRAFFIC is to seek and activate solutions

to the problems created by illegal and/or unsustainable wildlife trade. TRAFFIC's aim is to encourage sustainability by providing government, decision-makers, traders, businesses, consumers and others with an interest in wildlife trade with reliable information about trade volumes, trends, pathways and impacts, along with guidance on how to respond where trade is illegal or unsustainable. Eight regional TRAFFIC programmes are co-ordinated by the TRAFFIC International headquarters in Cambridge, UK.

TRAFFIC's reports and advice provide a technical basis for the establishment of effective conservation policies and programmes to ensure that wildlife is maintained within sustainable levels and conducted according to national and international laws and agreements. The journal of the TRAFFIC network, *TRAFFIC Bulletin*, is the only journal devoted exclusively to issues relating to international trade in wild plants and animals. Provided free of charge to over 4000 subscribers and freely available from the TRAFFIC website (www.traffic.org), it is a key tool for disseminating knowledge of wildlife trade and an important source of information for those in a position to affect change and improve awareness.



JEFF FOOTIT / WWF-CANON

Much of the content published in the *TRAFFIC Bulletin* arises from investigations carried out by TRAFFIC staff, whose wide-ranging expertise allows for a broad coverage of issues. TRAFFIC has also built up a global network of contacts with, for example, law enforcement agents, scientists, and wildlife experts, some of whom are regular contributors to the *TRAFFIC Bulletin*.

TRAFFIC welcomes articles on the subject of wildlife trade that will bring new information to the attention of the wider public, and guidelines are provided in this issue and online to assist in this process. For more information, please contact the editor:
Kim Lochen (kim.lochen@traffic.org).



JÜRGEN FREUND / WWF-CANON



MARTIN HARVEY / WWF-CANON

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 WWF and IUCN.

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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(© naturepl.com / Ingo Arndt / WWF)

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Belum-Temengor Forest Complex (© Or Oi Ching /
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(© Panjit Tansom / TRAFFIC);
Blue Bird-of-paradise (© Pete Morris / Birdquest)



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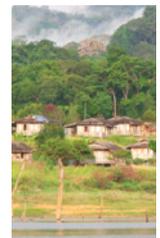
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Whenever an animal or plant is desired for its features or its rarity, and determined to be of commercial value, it is in a position of risk. It becomes sought after, a marketable entity potentially vulnerable to overexploitation. South-east Asia is a region that boasts an incredible diversity of wildlife, from the iconic Tiger, and the brilliantly plumed birds-of-paradise, to the virtually unknown Tokay Geckos. However much of this wildlife is being assailed by illegal and unsustainable trade.

EDITORIAL

In addition to the ever-increasing pressures of human population expansion, extraction levels of wildlife for commercial gain are massive and growing. While legal and sustainable harvest and trade of some species is possible, unsustainable and illegal harvest and trade undermines efforts to achieve sustainability and greatly impedes conservation. With other species, such as the Tiger or the endemic Roti Island Snake-necked Turtle, any trade will only bring it closer to the brink of extinction.

While much of the illegal trade is carried out at a local level, much is also cross-border and in violation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Many of the region's species have been all but eradicated to supply the black market; perhaps the best-known examples of this are the Sumatran and Javan rhinoceroses.

Very few are aware of lesser-known species like the Southern Serow, Sunda Pangolins and Asiatic Black Bears that are heavily exploited, and fewer still are doing anything about it. That so little effort is channelled into protecting these species is mostly a result of a severe lack of resources devoted to work on species perceived to be uncharismatic.

Illegal, unsustainable and poorly regulated trade in wildlife is rife in South-east Asia. Some of these issues are explored in this issue of the *TRAFFIC Bulletin* and illustrate that South-east Asia is, increasingly, a regional hub of illegal wildlife trade, acting both as source and consumer.

Birds and reptiles are in demand for the pet trade and tonnes of tortoises and freshwater turtles are shipped to China, fuelled by the demand for meat and medicinal products.

Raw ivory from African nations moves via Malaysia, Thailand, Lao PDR, Viet Nam and the Philippines, most often on to China to meet the demand for luxury items. Pangolins from Indonesia

make their way to China and Viet Nam through Malaysia and Thailand.

Commensurate with its increasing economic prosperity is South-east Asia's booming role as a consumer, prime examples of which being high-value tortoises from India and Madagascar that continue to be smuggled in by the thousands.

Understanding the current situation is only the first step. These challenges must be addressed urgently if further declines and extinctions are to be prevented. Dissemination of information, raising awareness and ultimately influencing consumer behaviour, as well as increasing enforcement efficiency, is the next. As recently as 20 years ago, half of South-east Asia's 10 countries were not even members of CITES. Today, all the countries of the Association of Southeast Asian Nations (ASEAN) are not only CITES Parties but have joined together to combat illegal wildlife trade in the form of the ASEAN Wildlife Enforcement Network, which was established at the 13th meeting of the Conference of the Parties (CoP) to CITES in Thailand in 2004.

That meeting was, in fact, the first CITES Conference of the Parties to be hosted in the region and it is set to host a second CITES CoP in 2013, again in Thailand. With the spotlight of the international conservation community squarely focused on the region at CITES CoP16, this would be an ideal opportunity for South-east Asia to showcase the rich biodiversity of the region and the steps it is taking to conserve and protect this vital natural heritage. However, much more needs to be done before the region can demonstrate to the international community that it has decisively and successfully stemmed the tide of illegal and unsustainable wildlife trade. Much more also needs to be done by the international community to help support that work.

Since the establishment of its regional programme for South-east Asia 20 years ago, TRAFFIC has worked closely with governments in the region providing that support. This includes providing critical information on the impacts of trade, motivating efforts to increase the ecological sustainability of trade in wild species and improving enforcement of national and international wildlife trade controls by helping to build the capacity to carry out this work. There is still much to be done however, now more urgently than ever. The needs are great but the possibilities are infinitely greater if we act: it is lack of action that is the greatest threat to wildlife in South-east Asia and around the world.

*Chris R. Shepherd, Deputy Regional Director,
TRAFFIC Southeast Asia*

GAYLE BURGESS has been appointed Development and Evaluation Officer at TRAFFIC International with effect from 1 October 2011.

bulletin board

XU HONGFA, who spent 10 years leading the China TRAFFIC team, retired from his position at the end of June 2011. Professor Xu will continue in a part-time senior advisory role to TRAFFIC, ensuring that the decade of work to establish TRAFFIC's presence in mainland China is fully consolidated. His position at TRAFFIC has been taken by **SHI JIANBIN**, who formally took over the role as Head of the China TRAFFIC programme based in the Beijing office in July 2011.

AKIKO ISHIHARA left her position as Director of the TRAFFIC office in Japan at the end of June 2011, after a period of nearly 20 years working with TRAFFIC, to take up a new position at WWF Japan as the Director of Communications. **AYAKO TOKO** has been appointed her successor.

ULRICH MALESSA, formerly based at the TRAFFIC office in Quito, Ecuador, is now based at the TRAFFIC office in Washington as the Senior Programme Officer and continues his work on the TRAFFIC timber programme.

NGUYEN DAO NGOC VAN left her position as Senior Projects Officer in October 2011, after eight years with the TRAFFIC Southeast Asia-Greater Mekong Programme. During her time with TRAFFIC, Van was responsible for overseeing the majority of projects implemented in Viet Nam.

traffic websites

www.traffic.org (English)
 www.wwf.ru/traffic (Russian)
 www.wwf.org.mx/wwfmex/prog_traffic.php (Spanish)
 www.wwfchina.org/english
 www.traffic-china.org (Chinese)
 www.wow.org.tw (Chinese)
 www.trafficj.org (Japanese)

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AWARD FOR TRAFFIC SOUTHEAST ASIA



TRAFFIC

TRAFFIC Southeast Asia has received an award in recognition of its technical support to the Royal Thai Government in combating the illegal trade in wildlife. The award was presented during celebrations to mark the ninth anniversary of Thailand's Wildlife and Plant Conservation Department (DNP) and 115 years of its Royal Forestry Department.

South Africa and Viet Nam to Collaborate on Wildlife Protection and Law Enforcement

Viet Nam has been identified as the primary destination for rhinoceros horns illegally coming from South Africa, where, as of 11 October 2011, the death toll of poached rhinoceroses has reached more than 324 since the beginning of the year.

In early October 2011, South African and Vietnamese officials agreed on a process towards the finalization of a Memorandum of Understanding (MoU) to collaborate on natural resource management, wildlife protection and law enforcement. This agreement follows a visit to South Africa by a Vietnamese delegation, led by the country's Vice Prime Minister, to engage in bi-lateral talks to discuss a number of issues, in particular those pertaining to hunting and illegal killing of rhinoceros and the illegal trade in rhinoceros horn. The objective of the MoU is to promote co-operation between the two countries in the field of biodiversity conservation and protection, law enforcement and compliance with CITES on the basis of equality and mutual benefit. The MoU between the two countries will be finalized once all the due processes have been followed and areas of co-operation agreed.

In the meantime, South Africa's Department of Environmental Affairs has announced that all rhinoceros horns traded in South Africa will have to be micro-chipped and rhinoceros hunting tightly controlled under proposed changes to the law. Further, hunters will be permitted to hunt only one rhinoceros per year for trophy purposes. The proposals, which are to be published for public comment, are aimed at preventing legal hunters from abusing their permits and contributing to the growing market for illegal horns.

TRAFFIC; Media statement issued by South Africa's Department of Environmental Affairs, 28 September 2011; ECR Newswatch, 7 October 2011

Typically, wildlife trade data are represented spatially on static maps in reports that can quickly become dated and are limited in scope and focus. Spatial analysis of trade data is now being explored using online mapping systems that are easily updated in real time and are flexible and adaptable to meet the needs of a broader audience.

those figures are compiled and validated. The system will simplify the reporting system for Tiger deaths and allow a more accurate and transparent picture to be generated regarding the poaching and illegal trade threats facing this species.

In addition to these materials, the Government of India, in cooperation with TRAFFIC, has developed a comprehensive Tiger protection and management system online that compiles and analyses

NEW APPROACHES TO WILDLIFE CHALLENGES

The TRAFFIC/WWF **Wildlife Trade Tracker** is a new interactive online mapping tool that represents global wildlife trade data on a Google maps platform. This prototype has two initial components to trial analysis of two existing datasets. The first of these generates maps based on data provided by the US Fish and Wildlife Service (USFWS) and is a record of wildlife that was refused entry on import to the USA. The system—called the **LEMIS tracker** (USFWS Enforcement Management Information System)—provides maps showing trade flows by species, seizures information between 2003 and 2009 based on the country of export, or a cross reference of species and source country.

The **Tiger Trade Tracker**, the second component of the Wildlife Trade Tracker, plots all seizures of Tigers, their parts and products in Asia over a period of 10 years based on data from a 2010 TRAFFIC report *Reduced to Skin and Bones: an Analysis of Tiger Seizures from 121 Tiger Range Countries (2000–2010)*. This report analyses data on Tiger seizures from 11 of the 13 Tiger range States which have been compiled from various sources including governments, NGOs and other validated sources, and represents the most comprehensive compilation of Tiger seizures data to date. TRAFFIC is working to make it as complete as possible for all Tiger range States; it is updating the seizures included in the Tiger Tracker and will begin compiling data on seizures outside the Tiger range States. In future, the tracker will show poaching incidents and market observations data internationally as

national data relating to mortality, distribution and illegal trade in Tigers in India, which is designed to support decision-making and allocation of resources to protect Tigers.

The Wildlife Trade Tracker is being developed and expanded to include new modules in future, targeting key wildlife trade issues. TRAFFIC is keen to work with partners to expand the initiative. Some examples of future modules include trade in particular timber and fisheries commodities. For more information, please contact Crawford Allan: crawford.allan@wwfus.org.

Both sites can be accessed at: <http://wildlifetracker.org>; <http://www.tigernet.nic.in>.

Crawford Allan, Regional Director, TRAFFIC North America



INTERNATIONAL TIGER DAY

Handmade Tiger masks worn by giggling children and Vietnamese students bearing bright orange banners declaring ‘The Future of the Tiger Depends on Our Actions’ were among the images that greeted visitors to the second annual International Tiger Day celebration on 29 July 2011 in Hanoi, Viet Nam. The celebration sought to create greater public support for Tiger conservation and to stop the illegal Tiger trade. The day included a number of events such as exhibitions, a film on Tigers, children’s activities, performances and a concurrent workshop with officials to discuss progress thus far in Tiger conservation and the further steps that need to be taken to protect and increase Tiger populations.

With only an estimated 3200 wild Tigers currently surviving worldwide, their population having decreased by about 95% and their range by 93% since 1900, International Tiger Day sought to bring attention to the key factors affecting Tiger recovery. Such a drastic decline can be attributed to heavy poaching and the illegal trade in Tigers to supply a thriving black market for their parts as well as to a loss of habitat and prey animals.

Viet Nam is both a significant market for Tiger products and a transit point for their regional distribution. Demand for these products, including Tiger wine and Tiger bone—the latter a prominent ingredient in many traditional medicines—is primarily driven by wealthy individuals believing the properties of these materials to have curative powers, despite a lack of scientific evidence to support such claims. Additionally, Tiger products are used by these same wealthy individuals as a means to denote their wealth or status and for ornamentation.

International Tiger Day was hosted by the Viet Nam Environment Administration under the Ministry of Natural Resources and Environment, with support from WWF, TRAFFIC, and the Global Tiger Initiative (GTI). This global alliance is working together to ensure that Tiger conservation remains a key priority in the 13 countries with Tiger populations remaining.

Brett Tolman, Communications Officer, TRAFFIC Southeast Asia-Greater Mekong Programme

Wildlife trade regulations strengthened in Malaysia

New legislation in Malaysia to regulate the illegal trade in wildlife was formulated and passed in December 2010. Following a six-month amnesty period, the law came into force at the end of June 2011. A weightier variation of its predecessor, *The Protection of Wildlife Act 1972*, *The Wildlife Conservation Act 2010* is a formidable piece of legislation that allows for maximum fines up to 33 times higher for some offences, and a mandatory punishment of at least one night in gaol for several offences.

An individual in possession of a totally protected species may be fined MYR100 000 (USD34 000), or up to MYR500 000 (USD166 000) or imprisonment for up to five years if the offence involved the hunting of the critically endangered Tiger *Panthera tigris*, Leopard *P. pardus* or Sumatran Rhinoceros *Dicerorhinus sumatrensis*.

A minimum fine of MYR50 000 and three years' imprisonment could now be imposed on anyone caught in illegal possession of Sunda Pangolins *Manis javanica*, Clouded Monitors *Varanus nebulosus*, Harlequin Monitors *Varanus rudicollis* and Blood Pythons *Python brongersmai*; similar penalties apply to those involved in the illegal trapping of White-rumped Shama *Copsychus malabaricus*, Oriental White-eye *Zosterops palpebrosus*, or Hill Myna *Gracula religiosa*, for example.

This new legislation is further strengthened by the inclusion of "presumptions under the law". One such presumption addresses a major scourge to Malaysia's wildlife: the use of snares. The mere possession of a snare would now automatically be deemed to imply the intention to hunt, trap and/or kill wildlife, which is punishable by a fine of up to MYR100 000 (USD34 000) and a prison term of up to two years.

Traditional medicines, products or food that claim to contain parts or derivatives of any protected species will also result in heavy fines and gaol terms for those caught in possession of such items. Under the new law, the burden of proof lies with the traders. Another commendable proviso is the revocation, non-renewal and prohibition of permits to a convicted offender for a period

of five years. This penalty is nonetheless discretionary. For the first time, zoos will also be required to apply to wildlife authorities for a permit to operate. Hitherto, they were issued business permits by local councils while the wildlife department issued permits only for protected and totally protected animals. There was also no cohesive monitoring of these zoos previously. With the passing of the new law, prerequisites and rules for the establishment and running of zoos will be part of enforceable regulations attached to the Act. This will give the authorities a much needed mandate to monitor illegal acquisition of animals in captivity.

The new Act is not without its shortcomings, however. It maintains the much-abused system of Special Permits, the issuance of which is at the discretion of the Minister of Natural Resources and Environment Ministry. The granting of licences and permits is at the behest of the Minister and of the Director General of the Wildlife Department and National Parks, which comes under the purview of the Ministry. The Act further allows the Minister to extend the quota from time to time. In addition, the Director General or any officer is empowered to breed, keep, hunt, import, sell or purchase any wild animals or plants, notwithstanding the contents of the Act, provided that it is for the purpose of conservation. In all these instances, there appears to be no regulatory board or scientific authority to ascertain whether reasonable judgement has been made based on scientific evidence or expert opinion. It is difficult to envisage how these provisions would be implemented with an appropriate level of precaution and protection from risk of corruption.

Nonetheless, the new law appears to address the many varied dimensions of wildlife trafficking. With more persuasive deterrent sentences and wider powers given to the authorities under the new Act, effective and consistent enforcement of this legislation is imperative and essential if the fight against wildlife crime is to be successful.

*Shenaar Khan, National Wildlife Trade Policy
Co-ordinator, TRAFFIC Southeast Asia*

PHONE APP. GUIDE TO WILDLIFE SPECIES IN TRADE

TRAFFIC is working with Wildlife Alliance on an iPhone application which travellers to South-east Asia can tap into. Still in the early stages of development, the project involves providing holidaymakers with information on the most heavily traded wildlife species in the country they are visiting and wildlife that they should avoid buying or even eating when in South-east Asia. It will include a guide on how to recognize threatened and endangered species they may see on sale and national hotline numbers to call to report wildlife crime. The application is expected to be launched late 2011, with promotional videos by wildlife biologist and Emmy-winning TV host Jeff Corwin. The application will first offer information on Cambodia for download. The long-term plan is to provide information on all 10 South-east Asian countries in phases.

Elizabeth John, Senior Communications Officer, TRAFFIC Southeast Asia

MALAYSIA AT CENTRE OF TOKAY GECKO TRADE BOOM



TOKAY GECKO. O. CAILLABET/TRAFFIC

The trade in Tokay Geckos *Gekko gecko*—both legal and illegal—for the global pet market and use in traditional Chinese medicine (TCM) is well established. Recently, the medicinal trade appears to have acquired some peculiar new dynamics, seemingly involving Malaysia as a key hub, large sums of money and rumours of a potential cure for Human Immunodeficiency Virus (HIV). The sudden emergence of these factors, with currently no identifiable source, combined with the implausible nature of the rumours, has prompted fresh examination of this trade.

The Tokay Gecko is a nocturnal lizard easily identifiable by its orange-spotted, blue-grey skin and unmistakable vocalizations, which give rise to its common name. Specimens can grow up to 40 cm in length. They feed on insects and small vertebrates and are often found in forests as well as human-altered landscapes such as agricultural and urban areas (Das, 2010). Tokay Geckos naturally range throughout South-east Asia and parts of India, Nepal and China, and have also been introduced to parts of the USA, West Indies and Madagascar (Manthey and Grossman, 1997; Das, 2010).

Tokay Geckos are often collected at night by hunters who then sell them on to middlemen. They are usually killed, disembowelled, stretched and dried before export (Fig. 1). The eviscerated carcasses are ground to a powder and mixed with food or boiled in water before being consumed (Connet and Lee, 1994; O. Caillabet, pers. obs.). In parts of Cambodia, Viet Nam and Lao PDR, Tokay wine or whisky (containing whole animals along with other ingredients), is also consumed to increase strength and energy (Fig. 2) (O. Caillabet, pers. obs.). Traditionally, Tokay derivatives are also used in TCM to treat various maladies including diabetes, asthma, skin disease and cancer (Li *et al.*, 2004; Bauer, 2009). Indeed, research carried out on derivatives from other *Gekko* species does indicate the presence of potential anti-cancer compounds (Wu *et al.*, 2006; Liu *et al.*, 2008).

In recent years, messages have been circulating in online blogs, forums, newspaper articles, classified advertisements and amongst wildlife dealers, particularly in Malaysia, Indonesia and the Philippines, extolling the consumption of Tokay Gecko tongue and internal organs as a cure for HIV and cancer. The price of live Tokay Geckos has also shown a dramatic increase recently, with heavier animals fetching the highest prices. Consistently, the price of an individual rises sharply after it reaches 300 g in weight. The significance of this seemingly arbitrary figure is unclear. Collectors in some areas of South-east Asia reportedly catch wild Tokay Geckos which they maintain in captivity before selling. The animals are fed on a diet of meat or purpose-bred insects (O. Caillabet, pers. obs.) to increase their weight above 300 g.

Malaysia appears to be playing a central role in the recent boom in Tokay Gecko trade. A survey of Malaysian websites returns many examples of sites dedicated to buying and selling Tokay Geckos. Comment threads on advertisements imply that Tokay Geckos are being imported to Malaysia from all over South-east Asia to feed the demand. An informal interview with a dealer in June 2011 on the Thai/Malay border revealed that Tokay Geckos were being collected in Chiang Rai, northern Thailand, to supply the Malaysian market (O. Caillabet, pers. obs.). Further examples which implicate Malaysia as a key player in this trade are the recent seizure of over 1000 Tokay Geckos in Cambodia (Anon., 2011a), purportedly destined for Malaysia; the kidnapping of a Malaysian gecko collector in the Philippines (Anon., 2011b); the arrest of a couple caught smuggling Tokay Geckos worth MYR3 000 000 (USD998 668) from Thailand to Malaysia (Anon., 2010), and the interception by Malaysian Customs of a man trafficking 40 Tokay Geckos (Anon., 2011c).

Tokay Geckos are protected under Peninsular Malaysia's *Wildlife Conservation Act 2010*, which allows the hunting or keeping of wild specimens, within a set quota, by licensed hunters or traders. Hunting or trading of protected species without a licence can result in a fine of up to MYR50 000 (USD16 123) and/or up to two years in prison. Tokay Geckos are not protected in East Malaysia (Sabah and Sarawak) or in Thailand. In Cambodia, Tokay Geckos are listed as a common species. Under Cambodia's *Forestry Law 2002*, it is illegal to trade or transport a common species above an amount necessary for traditional use. Contravention of this law can incur a fine of up to three times the market value of the species in question.

The Philippines appears to be an important source of the animals. Recently, in response to increasing incidence of illicit trade in this species, the Philippines National Bureau of Investigation (NBI) launched a crackdown on Tokay Gecko buyers (Anon., 2011d), while the Department of Environment and Natural Resources (DENR) has begun investigations into reports of illegal trade (Anon., 2011e). Under the Philippine's *Wildlife Resources Conservation and Protection Act 2001*, it is illegal to collect or trade in Tokay Geckos; contravention of this law can lead to a fine of PHP300 000 (USD6950) and/or up to four years in prison. Further reflecting the extent and potential threat of this trade,

the Tokay Gecko is due to be included in the updated list of threatened species in the Philippines and is reportedly being considered for listing in Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) by the country's CITES Management Authority (S. Schoppe, Katala Foundation, June 2011).

The known trade in the species for TCM is substantial. Between 1998 and 2002 over eight and a half tonnes of dried Tokay Geckos were legally imported into the USA for use in traditional medicine (Schlaepfer *et al.*, 2005). While Indonesia has an annual export quota for 45 000 Tokay Geckos, this only covers live specimens. According to Nijman and Shepherd (in prep.), an estimated 1.2 million dried Tokay Geckos are exported annually from Java, Indonesia, to supply the TCM industry, which is therefore clearly in breach of the quota conditions. This level of harvest is unlikely to be sustainable, and, unsurprisingly, declines in wild populations on Java have been reported (Anon., 2011f). The species is listed as endangered in China's Red Data book and has been protected in that country since 1988, overexploitation for TCM cited as a contributing factor (Zhao, 1998). Overexploitation of Tokay Geckos for TCM has also led to the localized extirpation of this species in other parts of its natural range (Thongsa-Ard and Thongsa-Ard, 2003). Despite the apparent risk posed by international trade to wild Tokay Geckos, the species is not listed in the CITES Appendices.

Currently, the emerging trends and anecdotal evidence surrounding the Tokay Gecko trade in South-east Asia pose more questions than they provide answers. Incredible claims of miracle cures and vast monetary gains may be indicative of an elaborate hoax. Perpetrated by whom, to what extent and in what capacity remains a mystery. What is clear, however, is that the demand for Tokay Geckos is leading to the rapacious collection of this species throughout South-east Asia. Concomitant trade resulting from this, combined with a substantial and poorly regulated trade, is an extremely disconcerting prospect for the conservation of the species.

As part of a larger proposal to highlight the dynamics of the Tokay Gecko trade in the region, TRAFFIC will soon carry out an investigation into the trade in this species in Peninsular Malaysia. In so doing, this project aims to answer the questions surrounding this trade and, ultimately, strive to ensure that wild populations are protected in the future.



O. CAILLABET / TRAFFIC



CLAIRE BEASTALL / TRAFFIC

Fig. 1. Dried Tokay Geckos for sale as traditional Chinese medicine in Cambodia (left); Fig. 2. Tokay wine on sale in a traditional Chinese medicine shop in Viet Nam (right).

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ASIA'S TORTOISES AND FRESHWATER TURTLES: THE CRISIS CONTINUES

Tortoises and freshwater turtles are among the most threatened species groups, with an estimated 50% of the world's 328 species threatened with extinction. While habitat destruction contributes to the decline of many of these species, it is the unsustainable exploitation of these reptiles as pets, for food and for use in traditional medicines that poses the greatest threat.

Nowhere is the threat greater than in Asia—home to almost 70% of the world's most endangered tortoise and freshwater turtle species (Turtle Conservation Coalition, 2011). Every species of tortoise and freshwater turtle in the region has been affected by collection for commercial trade, much of it conducted illegally. While some efforts are being taken to stem this downward trend, more strategic action is urgently needed if this is to be slowed, and ultimately reversed.

The status of Asia's tortoises and freshwater turtles first gave serious cause for concern in 1999 at a workshop in Phnom Penh, Cambodia, held by the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group (TFTSG) and involving experts on the region's turtle species who were convening to determine their status for the *IUCN Red List of Threatened Species*. They found that the scale and impact of exploitation of these species in Asia for local and international trade had reached unprecedented levels and that many populations were being extirpated.

In February 2011, in Singapore, experts met again to reassess the status of Asia's 86 species at the Conservation of Asian Tortoises and Freshwater Turtles Workshop, and in China, in May 2011, at a workshop to address issues specifically relating to *Cuora* species, one of the most threatened genera of turtles¹.

Twelve years since the group had first met in Phnom Penh, the reassessment was a sobering one. Despite various conservation efforts, the situation has only worsened. Participants at the Singapore workshop recommended that 38% of the Asian species be categorized as Critically Endangered—a huge increase since their findings in 1999.

Of the 13 *Cuora* species, it was recommended that the Yellow-margined Box Turtle *C. flavomarginata* and the Jagged-shell Turtle *C. mouhotii* be classified as Critically Endangered, raising to 12 the number of species in this genus in this category; only one, the Southeast Asian Box Turtle *C. amboinensis*, remains ranked as Vulnerable.

The illegal and unsustainable trade was unequivocally found to be the greatest threat to the survival of this group, exacerbated by the fact that laws and conventions carefully designed on paper to protect these animals were simply not being sufficiently enforced. In addition to the need for increased and improved levels of enforcement, the group also identified the need for increased monitoring of the trade and for specific policy and conser-

vation interventions, including the possible inclusion of some species in the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The urgent need for additional rescue centres and continuation and expansion of ex-situ breeding populations to provide assurance against the extinction of the species was also highlighted.

According to the draft *IUCN Red List* assessments which are currently being prepared by the TFTSG based on information and discussions at the aforementioned workshops, 33 Asian species are provisionally considered Critically Endangered, 21 Endangered, and nine as Vulnerable. Additional information gleaned in this process may alter these final categorizations, but the general downward trend will be even more starkly apparent than before.

It is lamentable that a few decades of over-exploitation and poor enforcement has brought to the edge of extinction a group of species that has survived since the days of the dinosaurs. For some species, it appears that too little is being done too late. However, even when a species is down to four known individuals—the Red River Giant Softshell Turtle *Rafetus swinhoei* of China and Viet Nam, for example—no known tortoise or freshwater turtle species has gone extinct in the past 12 years, and this most likely can be attributed to conservation actions.

Efforts to breed highly threatened species in captivity in the hope of re-establishing populations in the wild are under way. To bring legal trade firmly within sustainable levels, capacity-building workshops involving enforcement agencies throughout Asia are being carried out with the aim of increasing conservation efforts and efficiency in shutting down illegal trade networks.

However, in order to ensure that these efforts are successful, governments throughout Asia must ensure that adequate legislation is in place and effectively enforced. Implementation of CITES would also be instrumental in greatly reducing levels of illegal international trade.

Most of the tools are in place. With improved legislation at national levels and adequate enforcement, there could be a more hopeful outcome for these beleaguered species.

Reference: Turtle Conservation Coalition (2011). *Turtles in Trouble: The World's 25+ Most Endangered Tortoises and Freshwater Turtles—2011*. Rhodin, A.G.J., Walde, A.D., Horne, B.D., van Dijk, P.P., Blanck, T., and Hudson, R. (Eds). www.iucn-tftsg.org/trouble/.

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¹The Singapore workshop was hosted by Wildlife Reserves Singapore Group and the Wildlife Conservation Society (WCS), in collaboration with the Turtle Survival Alliance (TSA), Kadoorie Farm and Botanic Garden, San Diego Zoo Global and the TFTSG; the China workshop was organized by the TSA and TFTSG.



◀ Logging in the Mekong Delta, Viet Nam.

Photograph:

Adam Oswell
WWF Greater Mekong

Viet Nam moves towards establishing a Voluntary Partnership Agreement

In an effort to combat illegal logging and associated illegal trade in timber, several important national policies have been developed that have implications globally, of particular note the amendment to the US *Lacey Act* (2008) and policies resulting from the European Union Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan of 2003. Included in the latter is the FLEGT Regulation (2005), and the forthcoming EU Timber Regulation (EUTR) that is due to come into operation in early 2013.

The FLEGT Regulation establishes a licensing scheme for timber products exported to the European Union (EU) from countries that have entered into a Voluntary Partnership Agreement (VPA) with the EU. VPAs aim to guarantee that the wood exported to the EU is from legal sources and to support partner countries in improving their own regulation and governance of the sector. A key element in each VPA is a Legality Assurance System (LAS), whose function is to identify, license and monitor legally-produced timber, and ensure that only legal timber is exported to the EU. To date, six countries have agreed VPAs, with four others currently undergoing negotiations for their establishment (including Malaysia and Viet Nam). Indonesia is the latest country to sign the VPA, in May 2011, and it is working hard to implement the VPA by 2013. The EU has opened a tender to help support the capacity building of stakeholders in Malaysia to implement the VPA once it is signed.

In March 2010, a FLEGT working group was established within the Vietnamese Ministry of Agriculture and Rural Development (MARD) to review and assess options on entering into a VPA, and in November 2010 the Vietnamese Government entered into formal negotiations with the EU with a view to establishing such a VPA

before the end of 2012. To support the negotiations, Viet Nam launched three studies: stakeholder mapping and analysis; timber trade flow study (both domestic and imported); and timber legality definition analysis, including possible legislative gaps that will need to be addressed. MARD has taken the legality definition developed by TRAFFIC for the WWF Global Forest Trade Network (GFTN) and funded by the EU, and published in 2009, as the starting reference for developing an appropriate national timber legality definition as part of the national LAS.

In August 2011, MARD presented the first public draft for the legality definition document to stakeholders, including forest product associations, academic institutions and NGOs, amongst others. While the content of LAS definitions are not standardized, there are minimum requirements, as laid down in the FLEGT Regulation, which must be met. The Vietnamese definition, as it currently stands and has been presented in draft form, exceeds these minimum requirements and includes principles related to ownership and land use rights, logging operations, timber imports and exports, transportation, processing, taxes and social issues.

The next challenge will be for the government to engage all relevant stakeholders in a consultative process, and seek to have agreement of all stakeholders as to which national laws are relevant and appropriate in the defining of legal timber in Viet Nam.

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Training and capacity building in South-east Asia

Covering a land area of almost 4.5 million km², the 10 member countries that make up the Association of Southeast Asian Nations (ASEAN)—Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, Singapore and Viet Nam, have an estimated population of around 1.5 billion (ASEAN, 2011). Home to 20% of all known plant and animal species (ACB, undated), the region contains three of the world's eight hottest biodiversity hotspots: Philippines, Sundaland and the Indo-Burma area, and includes one other, Wallacea, that is listed within the top 25 (Myers *et al.*, 2000).

South-east Asia is a major supplier of wildlife to the rest of the world, in addition to being a centre of wildlife consumption (TRAFFIC, 2008). Whilst some of this trade is legal and regulated, large-scale seizures and findings from TRAFFIC's market monitoring work across the region would suggest that a worrying proportion is not. All ASEAN countries have legislation designed to protect endangered wildlife and all are Party to CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), but without the will and skills to make these effective, illegal trade will continue to present a threat to many species.

TRAFFIC has been conducting and supporting a variety of training and capacity-building activities in the region for over 15 years. Efforts have been targeted mainly at those who work at border posts and particularly in airports around the region. Since 2009, these workshops have been attended by approximately 1500 participants, ranging from protected area rangers to frontline enforcement officers (Customs and police), investigators, and members of the judiciary (senior judges and prosecutors) and border control officers. Some 200 national agencies across the region have been engaged in these efforts. Many of these events have been conducted in collaboration with the Association of Southeast Asian Nations-Wildlife Enforcement Network (ASEAN-WEN).

For the numerous agencies engaged in enforcement, trade in wildlife is just one of many areas for which they may be responsible, and which may include among other things the trafficking of people and illegal substances. Out of the 10 most recent training courses, 78.8% of participants stated in a pre-workshop questionnaire that they were aware of CITES, yet only 18% had received training on the Convention. The lowest proportion of participants who had received some form of training on CITES was 3%, but within that group, 71% could accurately define it.

Enforcement of wildlife trade regulations, including CITES, requires the application of specialist knowledge to be effective. The training and capacity-building courses aim to provide technical and practical training that is accessible and that will enable participants to gain a better understanding of the complexities of these regulations and how to apply them. As nearly all participants report that they find species identification one of the most difficult

areas of their work, the workshops comprise practical exercises and provide identification sheets of those species most commonly found in trade in South-east Asia; a visit to local zoos to allow participants to view and handle specimens is included where possible. Reflecting current trade trends, case studies presented during the courses have covered the trade in pangolins, freshwater and marine turtles. These examples are regularly updated to accommodate participants' feedback and reflect TRAFFIC's own findings, with case studies on Madagascan tortoises and bear bile most recently added to those available.

The session on the CITES Appendices is often one of the most challenging. Leaving aside the difficulty of taxonomy and scientific names, the CITES languages (English, French and Spanish) are not universally understood by most participants. Moreover, four of the 10 ASEAN countries use non-Roman script (Cambodia, Lao PDR, Myanmar and Thailand), making it even more difficult for agencies to succeed in enforcing the Convention. Although translations are available for some languages, these are rarely available to all and are not kept up-to-date. In the face of such difficulties, the presence of an index to the Appendices is particularly important and an index has recently been compiled to assist in this process.

Two training management packages were launched in 2010 and were distributed to ASEAN-WEN focal points in each country, as well as to the ASEAN-WEN Program Co-ordination Unit resource library. These packages contain a selection of materials useful to a course or workshop organizer—for example, a sample budget, a suggested timeline, sample letters for participants and invited speakers, pre- and post-workshop questionnaires, as well as all the training presentations. Materials are split into modules to allow trainers to select only those topics most relevant to their participants.

It is clearly stated throughout these training management packages that materials should be used as a model and adapted to ensure they are up-to-date and locally appropriate. All presentations include detailed speakers' notes containing additional background information and, where possible, a range of examples to allow the user to select only those which are most relevant to their training location and group of participants. Where information on seizures is given, users are encouraged to make sure that these are updated each time the course is delivered.

In addition to finding out what future activities are most needed, the post-workshop questionnaire is also used to test the effectiveness of the training and the trainers. Around 88% of participants of the 10 most recent courses undertaken by TRAFFIC indicated that what they had learned will be useful to their work, with over 80% stating that their capacity/ability to deal with illegal wildlife trade had increased as a result of the course. Participants are also given the opportunity to provide feedback on what aspects of the training were most valuable and these comments are used to improve and develop the courses and materials.



TRAFFIC

South-east Asian enforcement agents study the TRAFFIC species identification sheets at the Wildlife Trade Regulation Course held in Borneo in December 2010.

Increased effort is being put into building the capacity of agencies to conduct their own training. In January 2011, TRAFFIC held a Training of Trainers (ToT) course in conjunction with the ASEAN Centre for Biodiversity, the ASEAN-WEN, and the Ministry of the Environment-Japan, (with support from the Ministry of Natural Resources and the Environment, Malaysia, and the Japan-ASEAN Integration Fund). The course was held in Kuala Lumpur over four days, with participants from all 10 ASEAN countries as well as China and Japan. Three participants attended from each ASEAN country, with selection criteria calling for one national expert on CITES, one on wildlife trade and/or national legislation, and an expert on reptiles (specifically freshwater turtles). The course comprised a full day session on teaching methods, and how to plan and arrange a workshop, which were presented by outside experts, and a day at the national zoo so that participants could familiarize themselves with the reptiles most commonly found in trade in South-east Asia. The final two days focused on the contents of the wildlife trade regulation course.

The pre-course questionnaire revealed the highest levels of CITES awareness (100%) and previous CITES training experience (42%) of any of the courses organized by TRAFFIC in recent years. Comments from the participants attending the ToT course were incorporated into the training management packages and distributed to the ASEAN-WEN Focal Points.

As a follow-up to the ToT, the Vietnamese participants conducted their own training course a few weeks later in Ho Chi Minh City, attended by 37 participants from the relevant national and provincial enforcement agencies. The course was tailored to apply to challenges faced by enforcement officials in that country. Participant evaluation following the course was extremely positive,

with over 95% of participants stating that their capacity/ability to deal with illegal wildlife trade/traders had increased, and a similar proportion agreed that the training materials provided were both relevant and useful.

TRAFFIC will continue to conduct one-off workshops where required and where possible, while continuing to build the capacity of in-country trainers to develop and deliver high quality training materials. These efforts have begun and TRAFFIC has been invited by the Customs Training Academy in Malaysia to discuss work towards the inclusion of such materials in their training curricula. TRAFFIC aims to support this effort by providing technical assistance, especially where the development of new materials is concerned.

The results of the post-workshop evaluation consistently indicate the short-term effectiveness of training; ensuring that these effects persist remains a major challenge, however. The eventual aim is for training on CITES in South-east Asia to become a standard part of enforcement curricula, as has occurred in South Africa and Russia. While available data suggest an increase in seizures, there are also indications that a considerable quantity of wildlife in illegal trade still evades South-east Asia's enforcement authorities. Data relating to seizures and confiscations of wildlife at the point of import from ASEAN countries during 2005 to 2009 were retrieved from the CITES trade database managed by UNEP-World Conservation Monitoring Centre (UNEP-WCMC). Whilst the results do not represent all seizures made since few Parties report such actions to the CITES Secretariat in their annual trade reports, those reported amount to 2676 instances of enforcement failure at the point of export. Further analysis of seizures data could be used to provide some indication of where future efforts should be focused.

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Conservation challenges and opportunities for Borneo's carnivores

The island of Borneo—divided among Brunei Darussalam, Indonesia and Malaysia—has 25 species of carnivore, which include more endemic species than any other island except Madagascar. In addition to the loss of suitable habitat, illegal hunting and trapping pose serious threats to these species.

Almost 50% of Borneo's carnivores have been classified by the *IUCN Red List of Threatened Species* as Threatened (Fig. 1; Table 1). Alarmingly, between the *IUCN Red List* assessments of 2002 and 2008, three species were moved from Near Threatened or Lower Risk/Least Concern to Vulnerable, and two from Data Deficient or Vulnerable to Endangered (Fig. 1). Since 1996, the *IUCN Red List* status of only one carnivore species, the Black-footed Ferret of North America, has improved—from Extinct in the Wild to Endangered. This downlisting was only possible due to a massive commitment of human resources and the financial investment of numerous government and non-government organizations to the conservation of this small carnivore (Jachowski and Lockhart, 2009).

In response to these serious threats, some 200 experts gathered in Kota Kinabalu, Sabah, Malaysia, for the *1st Borneo Carnivore Symposium (BCS), Road Towards Conservation Action Plans* (18–24 June 2011) in order to discuss the urgent need for developing strategies for the conservation of these species. Three IUCN/SSC Specialist Groups (the Cat Specialist Group, the Otter Specialist Group and the Small Carnivore Specialist Group), in collaboration with the Sabah Wildlife Department and the Leibniz Institute for Zoo and Wildlife Research, exchanged information on the status of the island's carnivores, and discussed in detail the threats and action needed to safeguard these species.

Globally, carnivores are in serious trouble. In large parts of Indochina and Myanmar, they are heavily hunted and traded for their meat and skins (Poole, 2003; Shepherd and Nijman, 2008). Otter and cat species are particularly targeted for their skins, although civets and other carnivores are also killed for their meat (Bell *et al.*, 2004; Shepherd and Shepherd, 2010; Lyngdoh *et al.*, 2011). Carnivores are also used in traditional medicines (Nowell and Jackson, 1996).

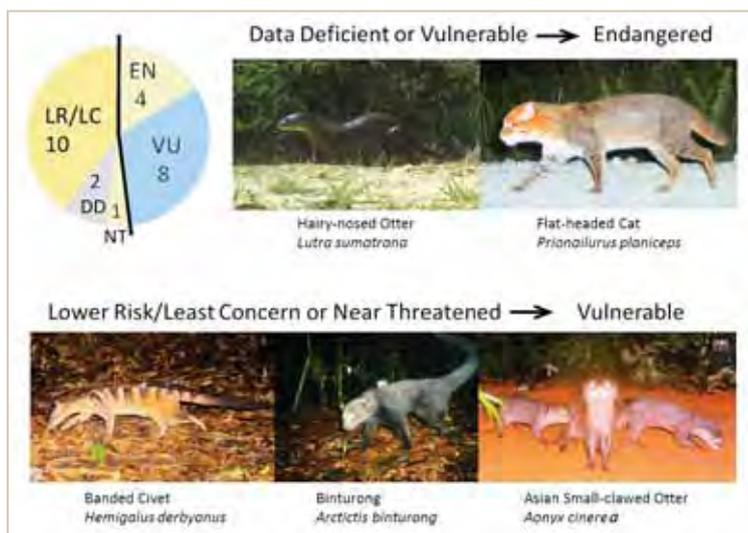


Fig. 1. IUCN Red List status of Bornean carnivores and species elevated to a higher category of threat from 2002 to 2008.

Photo credits: Hairy-Nosed Otter, Flat-headed Cat, Banded Civet and Asian Small-clawed Otter: Wilting and Mohamed, Sabah Wildlife Department & Sabah Forestry Department; Binturong: J. Ross and A.J. Hearn



CHRIS R. SHEPHERD / TRAFFIC

COMMON PALM CIVET
PARADOXURUS HERMAPHRODITUS

Carnivore parts are in demand both from within the region and internationally.

The status of two species of Bornean carnivores—the Collared Mongoose *Herpestes semitorquatus* and the Borneo Ferret Badger *Belogale everetti* (one of three endemic carnivore species on the island)—has until now been assessed in the *IUCN Red List* as Data Deficient, but with the additional information gathered during the symposium, both species can now be re-evaluated. On the strength of the new information available, the Borneo Ferret Badger will likely be found to be threatened with extinction.

One of the main goals of the BCS was to build a knowledge base of Bornean carnivores. To this end, the Borneo Carnivore Database was established to collate the largely fragmented information relating to the island's carnivores. More than 4000 records have been compiled and used to determine the distribution of these species, which will be an important tool for the development of conservation plans. It also became apparent during the workshop that most of the available information on carnivores on Borneo originates from the Malaysian State of Sabah, where considerable research has been carried out; much less information on the status of carnivores exists for the rest Borneo. This finding will hopefully encourage scientists and conservationists to focus their research and monitoring activities on Indonesian Kalimantan, which encompasses two thirds of the island.

| Common name | Species | IUCN Red List Category | CITES |
|--------------------------|-----------------------------------|------------------------|---------------|
| Flat-headed Cat | <i>Prionailurus planiceps</i> | Endangered | Appendix I |
| Bay Cat | <i>Catopuma badia</i> | Endangered | Appendix II |
| Hairy-nosed Otter | <i>Lutra sumatrana</i> | Endangered | Appendix II |
| Otter-civet | <i>Cynogale bennettii</i> | Endangered | Appendix II |
| Marbled Cat | <i>Pardofelis marmorata</i> | Vulnerable | Appendix I |
| Sunda Clouded Leopard | <i>Neofelis diardi</i> | Vulnerable | Appendix I |
| Malayan Sun Bear | <i>Helarctos malayanus</i> | Vulnerable | Appendix I |
| Banded Civet | <i>Hemigalus derbyanus</i> | Vulnerable | Appendix II |
| Smooth-coated Otter | <i>Lutrogale perspicillata</i> | Vulnerable | Appendix II |
| Asian Small-clawed Otter | <i>Aonyx cinerea</i> | Vulnerable | Appendix II |
| Binturong | <i>Arctictis binturong</i> | Vulnerable | Appendix III |
| Hose's Civet | <i>Diplogale hosei</i> | Vulnerable | |
| Eurasian Otter | <i>Lutra lutra</i> | Near Threatened | Appendix I |
| Leopard Cat | <i>Prionailurus bengalensis</i> | Least Concern | Appendix II/I |
| Banded Linsang | <i>Prionodon linsang</i> | Least Concern | Appendix II |
| Small-toothed Palm Civet | <i>Arctogalidia trivirgata</i> | Least Concern | |
| Common Palm Civet | <i>Paradoxurus hermaphroditus</i> | Least Concern | Appendix III |
| Malay Civet | <i>Viverra zangalunga</i> | Least Concern | |
| Masked Palm Civet | <i>Paguma larvata</i> | Least Concern | Appendix III |
| Sunda Stink-badger | <i>Mydaus javanensis</i> | Least Concern | |
| Short-tailed Mongoose | <i>Herpestes brachyurus</i> | Least Concern | |
| Yellow-throated Marten | <i>Martes flavigula</i> | Least Concern | Appendix III |
| Malay Weasel | <i>Mustela nudipes</i> | Least Concern | |
| Collared Mongoose | <i>Herpestes semitorquatus</i> | Data Deficient | |
| Bornean Ferret Badger | <i>Melogale everetti</i> | Data Deficient | |

Table 1. Summary of the Bornean carnivores and their IUCN Red List and CITES status.

Large gaps in our knowledge of Bornean carnivores make it difficult to assess the threats they face, but some serious issues are already apparent. Although little is known about the illegal hunting and trade, participants of the BCS pointed out that it is increasing and is expected to become more serious in the near future. Already heavily hunted in countries nearest China—such as Cambodia, Lao PDR, Myanmar and Viet Nam—Borneo's carnivores will most likely be increasingly targeted in the near future since such a pattern has been observed with other species groups: examples of the southward expansion of illegal trade from Indochina include that of pangolins, and tortoises and freshwater turtles, of which high demand for use in traditional medicines or as food—in China especially—has led to their dramatic decline in the region. Moreover, trade has expanded to areas where local populations have not yet been depleted. Currently the enforcement capacities of the Bornean range countries are poorly prepared for such targeted hunting pressure and the BCS emphasized the pressing need to ensure these capacities are established in the near future.

Clearly, levels of hunting and trade should be closely monitored and reduced where possible. Enforcement should be increased and laws introduced or amended to provide sufficient protection. All cats, otters and some

other carnivores of Borneo are listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to which Brunei Darussalam, Malaysia and Indonesia are Parties. These countries are therefore able to make use of this regulatory control mechanism with respect to these species. However, not all carnivores are protected on Borneo and the differing legislation of these respective countries limit the potential to co-ordinate joint enforcement efforts. This will become increasingly relevant, especially when trans-boundary protected areas are further developed.

The island of Borneo needs to be safeguarded as a whole, since any single entry point for illegal trade activities could facilitate the establishment of hunting and trade routes throughout the island. To allow for co-operative protection between Brunei Darussalam, Malaysia and Indonesia, and the Malaysian States of Sabah and Sarawak, steps should be taken among the three countries to harmonize the protection status of all carnivore species on Borneo. Furthermore, enforcement agencies should increase co-operation to combat illegal cross-border hunting and trade. The BCS called for existing co-operative platforms, such as the Heart of Borneo (a conservation agreement between Malaysia, Indonesia and Brunei Darussalam), CITES and the

ASEAN-Wildlife Enforcement Network (ASEAN-WEN) to be brought into play to ensure that, together, the three countries sharing Borneo can protect this unique assemblage of species.

During the BCS, the unique opportunity for the three countries to integrate their conservation actions and strategies was discussed, focusing on the advantages as well as the challenges of trans-boundary initiatives. Once again, one of the biggest challenges identified was control of hunting and trade in these trans-boundary parks.

The BCS was only the first step towards the long-term conservation of Borneo's carnivores, but identification of key conservation areas for these species, spanning wetland areas in the lowlands (home of the Endangered Flat-headed Cat *Prionailurus planiceps* and the otters) to the mountainous regions (home of the threatened Hose's Civet *Diplogale hosei*) raise hope that more streamlined conservation efforts will be possible in the future. In addition, the identification of key conservation issues such as the threat of hunting will assist the development of targeted conservation actions.

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SUNDA CLOUDED LEOPARD
NEOFELIS DIARDI

PHOTOGRAPHS: A. WILTING, A. MOHAMED, SABAH WILDLIFE DEPARTMENT AND SABAH FORESTRY DEPARTMENT



LEOPARD CAT
PRIONAILURUS BENGALENSIS



D. CHALLENGER. Photo taken at Carnivore & Pangolin Conservation Program, Cuc Phuong

**ASIAN PANGOLINS:
Increasing affluence
driving hunting
pressure**

While there is little information on the biology, ecology and population status of pangolins in Asia, it is known that the species are in serious decline throughout their collective range. This is the result of persistent illegal hunting of Asian pangolins for illicit international trade, largely to supply demand in China for meat and scales used in traditional medicines (Wu *et al.*, 2004; Duckworth, 2008).

When CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) came into force in 1975, all species of Asian pangolin recognized at the time—the Sunda Pangolin *Manis javanica*, Chinese Pangolin *M. pentadactyla* and Indian Pangolin *M. crassicaudata*—were listed in Appendix II. Throughout the 1980s and 1990s, tens of thousands of pangolin skins, as well as leather products such as wallets, belts and handbags, were traded internationally each year, reportedly derived from Sunda Pangolins. The destination for most of the skins was Japan, the USA and Mexico, where they were used to produce boots and shoes. Far less trade was reported as comprising the Chinese or Indian species. However, the accuracy with which the different species were distinguished from each other and subsequently reported to CITES has been questioned. Trade in pangolin scales in the 1990s for traditional medicine was also strong according to CITES

| Year | Location of seizure | Commodity | Approximate weight (t) |
|------|---------------------|------------------|------------------------|
| 2001 | Hong Kong | scales | 2.7 |
| 2004 | Taiwan | scales | 1.4 |
| 2006 | Hong Kong | scales | 4.4 |
| 2008 | Viet Nam | frozen pangolins | *23 |
| 2008 | Indonesia | frozen pangolins | 14 |
| 2010 | China | frozen pangolins | 7.8 |
| 2011 | Viet Nam | frozen pangolins | 4.7 |
| 2011 | India | scales | 1.2 |
| 2011 | Indonesia | frozen pangolins | 1.7 |

Table 1. Selected seizures of pangolins and pangolin derivatives post 2000. Source: media reports

*Two combined seizures in the first quarter of 2008.

◀ **A male Sunda Pangolin *Manis javanica* in captivity after being recovered from illegal trade in Viet Nam.**

data, which likely reflected a growing awareness of the trade and improved reporting. All trade was reported to be derived almost exclusively from Sunda Pangolins and was destined for East Asia, especially China and Hong Kong, but also Singapore.

Simultaneously, the 1990s saw trade in pangolins and pangolin products in South-east Asia, e.g. between Viet Nam and China (CITES, 2000a), that was not recorded in CITES annual reports, and which may have been unlicensed and therefore illegal. Following a decline in pangolin populations in China as a result of heavy collection pressure to satisfy domestic demand for medicinal purposes, the supply of pangolin scales since the early 1990s has largely been dependent on imports from other range States, for example Lao PDR, Viet Nam and Myanmar (CITES, 2000a).

Inherent in regulating the trade in pangolins is the difficulty in distinguishing between different species, particularly when dealing solely with scales. It is partly for this reason that all extant pangolin species, including the African species, were listed in CITES Appendix II in 1995 (the Cape Pangolin *Manis temminckii* which was already listed in Appendix I, was downlisted to Appendix II) following the ninth meeting of the Conference of the Parties (CoP9) (CITES, 1994a). Again, in part due to the difficulty in identifying pangolins to species level, and in order to help countries in their efforts to control trade, zero export quotas were established for the three recognized Asian pangolin species (Sunda Pangolin, Chinese Pangolin and Indian Pangolin), for specimens removed from the wild and traded for primarily commercial purposes, following CoP11 in 2000 (CITES, 2000b). The Philippine Pangolin *Manis culionensis*, endemic to the Philippines, was also listed in CITES Appendix II with a zero export quota in September 2007 following its recognition as a species distinct from the Sunda Pangolin.

Trade since the introduction of zero export quotas

Despite the implementation of zero export quotas and legislative protection nationally in all but one range State, illegal hunting and international trade in Asian pangolins continues on a large scale. The several hundred seizures of pangolins in trade that have taken place over the past decade are evidence of this. These data also demonstrate that demand is both for scales and meat, primarily for commercial purposes (Table 1). China and other countries in the region such as Viet Nam are the principal destinations for these transactions. Pangolin scales, both whole and in powdered form, are used in traditional Chinese medicines to treat a variety of medical conditions, including psoriasis, infertility, to improve blood circulation, treat asthma, and even cancer (Duckworth *et al.*, 2008). This use takes place despite a

lack of scientific evidence that pangolin scales have any medicinal properties. Pangolin meat is consumed in restaurants serving wild meat and is believed, among other things, to nourish the kidneys (Pantel and Chin, 2009).

Increasing affluence, which has led to an increase in the number of people now willing and able to pay the high prices pangolin products command, is understood to be underlying demand today (TRAFFIC, 2008; Duckworth *et al.*, 2008). Price increases in the past few years and a persistent demand support this assumption (Wu and Ma, 2007). Further, it is understood that local consumption across much of South-east Asia—a practice once widespread historically—has largely been abandoned to take advantage of the economic benefits that result from international trade in pangolins and/or their derivatives.

As noted, demand for pangolins in China was previously met with supply nationally and from specimens imported from neighbouring countries. Today, however, pangolin populations are understood to have been severely depleted in parts of their range, a fact attributed to hunting for international trade (Duckworth *et al.*, 2008). This is understood to have caused the harvesting of pangolins to shift southwards (TRAFFIC Southeast Asia, 2004). The bulk of demand today is currently being met with supplies of Sunda Pangolins from both Malaysia and Indonesia, whose populations are under extreme hunting pressure as the figures in Table 1 suggest. Further, it is also reported that the Philippine Pangolin is appearing in international trade. There is, moreover, an increasing body of evidence demonstrating that supply from South-east Asia is being supplemented with scales from India and Nepal, as testified by the increasing number of seizures from these countries, implicating populations of the Indian and Chinese pangolins in these States. All indications suggest that such contraband is bound for China.

While hunting for international trade is already thought to have caused severe reductions in South-east Asia's pangolins (Duckworth *et al.*, 2008), the above trend implies that pangolin populations Asia-wide are suffering as a result of illegal international trade. This presents a conservation challenge given the pervasiveness of the trade. While countries such as China and Viet Nam are end markets, in the past two years there have been seizures of pangolins and/or their derivatives in Cambodia, India, Indonesia, Malaysia, Myanmar, Nepal, Singapore, Thailand, as well as China and Viet Nam.

There is also strong domestic demand for pangolins by traditional medicine practitioners in certain African countries where the scales are used, *inter alia*, to protect against bad omens, ward off lions, bring good luck and to treat heart conditions (Marshall, 1998). However, there is also evidence of a potentially growing intercontinental trade in African pangolins between Africa and Asia. This development is one that was anticipated in the 1990s and it was suggested at the time that such trade may use rhinoceros horn and ivory trading routes between the two continents (CITES, 1994b). Over the last two years there have been a small number of pangolin-related seizures from Africa which have been destined for Asian markets.

For example, in 2009, 100 kg of '*Manis* spp.' scales were seized in transit from Côte d'Ivoire to Hong Kong. More recently, pangolin scales and elephant tusks were seized from a shipment of unprocessed timber from Chinese workers working for a Chinese logging company in Mozambique (Anon., 2011).

Whereas illegal hunting and international trade, driven by demand from China and Viet Nam, pose the greatest threat to pangolins in South-east Asia, evidence now suggests that populations elsewhere in Asia, such as those in India and Nepal, are subject to the same threat. While international trade in pangolins is undoubtedly having a detrimental effect on population levels, such pressure is unquantified owing to the paucity of research undertaken on Asian pangolins. Action of the utmost urgency is therefore required from governments, enforcement officers, Customs officers, researchers and NGOs if the dynamics of this illegal trade are to be understood, actions implemented to halt it, and the pressure of international trade on pangolin populations worldwide reduced.

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**Orang Asli and
Wildlife Conservation
in the Belum-Temengor
Forest Complex,
Malaysia**

*Or Oi Ching and
Tang Fook Leong*



The Belum-Temengor Forest Complex is one of Peninsular Malaysia's largest forests, comprising protected and non-protected landscapes. It boasts a rich diversity of fauna and flora including some of the world's most threatened species, such as the Malayan Tiger, Leopard, Malayan Sun Bear, Asian Tapir, as well as many species of flora unique to the region. Forest loss to illegal logging and the hunting of protected species are major threats and over the last decade have led to a decline in the natural resources upon which the indigenous Orang Asli depend for their food, water, shelter, medicines and other necessities. As a key stakeholder, and one directly impacted by how forests are managed and protected, the Orang Asli stand to lose the most. However, it is clear that some members of this forest-dwelling community are themselves involved in the illegal hunting of wildlife and associated trade and this report examines the extent of their role in these activities.

BACKGROUND

The Belum-Temengor Forest Complex (BTFC), located in the northern Peninsular Malaysian State of Perak, at the border with Thailand, is the second-largest forested block in Peninsular Malaysia, at 3546 km², after Taman Negara National Park (4343 km²). In the late 1970s, this pristine region was physically divided into the Belum Forest Reserve in the north and the Temengor Forest Reserve in the south following completion of the East-West Highway (also known as Gerik-Jeli Highway) (Fig. 2), effectively a two-lane road stretching 124 km between Gerik in Perak to Jeli in the State of Kelantan and the main access route into the BTFC.

Parts of the main rivers in the BTFC were submerged by the creation of the Temengor hydroelectric dam in 1978 to provide electricity for light industries set up to create employment in rural Perak. The dam, 15 200 ha wide on Temengor lake, is also used by BTFC's inhabitants—both human and wildlife—as a means of crossing this vast landscape.

In 2007, some 1175 km² (almost 90%) of the Belum Forest Reserve was assigned protected status and designated the Royal Belum State Park (RBSP, "the State Park"), an area managed by Perak State Parks Corporation (PSPC). The RBSP is connected to two protected areas in Thailand—the Hala-Bala Wildlife Sanctuary and the Bang Lang National Park.

The Temengor Forest Reserve (1480 km²) to its south is a Permanent Forest Reserve under the jurisdiction of the State Forestry Department. Immediately flanking the buffer area of the East-West Highway, at 1.5 km on each side, is a patch of State land forest, typically reserved for developments deemed suitable by the State government.

INTRODUCTION

The BTFC is of critical importance to Malaysia's most precious wildlife. It has been recognized by the Malaysian Government and by the global community as a priority Tiger conservation landscape. An estimated 500 Malayan Tigers *Panthera tigris jacksoni* are known to occur in Peninsular Malaysia, and the BTFC is one of its strongholds. The area has been identified by the National Tiger Conservation Action Plan 2010 as one of the three priority sites for the survival of this species. The BTFC is also home to a host of other, many threatened, species such as the Asian Elephant *Elephas maximus*, Leopard *Panthera pardus*, Gaur *Bos gaurus*, Asian Tapir *Tapirus indicus*, Southern Serow *Capricornis sumatraensis*, Malayan Sun Bear *Helarctos malayanus*, and it may also hold the critically endangered Sumatran Rhinoceros *Dicerorhinus sumatrensis*. Some 316 species of birds (Lim, 2010), 14 species of reptiles (Norsham *et al.*, 2000), over 13 species of amphibian and 29 species of fishes (Anon., 2008) inhabit these forests. The BTFC also functions as a huge carbon sink, a water catchment and climate change regulator, amongst other important roles.

Despite its high biodiversity and various federal and State laws governing forestry, protected areas and wildlife, forest loss and degradation as well as illegal hunting and trade have been determined to be major threats to wildlife in BTFC (Ahmad *et al.*, 2009). Recognizing the importance of protecting this precious yet fragile landscape, the government agencies of Gerik District Office, the Department of Wildlife and National Parks (PERHILITAN), the Forestry Department, Fisheries Department, PSPC, and many others, as well as TRAFFIC and several other non-government agencies such as WWF-Malaysia, Malaysian Nature Society (MNS) and BirdLife International, are working together to safeguard this national heritage.

Since 2008, TRAFFIC has worked in the BTFC in partnership with WWF-Malaysia, focusing on wildlife trade monitoring and anti-poaching. Through the strength of this partnership and with the support of enforcement authorities, the aim of these combined efforts is to stem illegal hunting and trade of wildlife in and around the BTFC.

In a recent study published by the primary author of this paper in Azrina *et al.* (2011), the Orang Asli—the indigenous people of Peninsular Malaysia, a population of which live in the BTFC—have stated that the decrease in natural resources in the forest began about a decade ago. The Orang Asli are predominantly forest-dwellers whose ancestors have lived in the BTFC for generations. They play an important role in protecting the forest's natural resources which provide them with shelter, food, water, medicines and other necessities. Nevertheless, along with other local communities (Malay and ethnic Malaysian Chinese) and people from neighbouring countries (Thai, Cambodian and Indonesian), it is evident that some Orang Asli individuals are involved in the hunting and illegal trade of wildlife in the BTFC.

◀ Fig. 1. An Orang Asli holding a bamboo blowpipe, used to hunt animals for consumption.

TANG FOOK LEONG / TRAFFIC

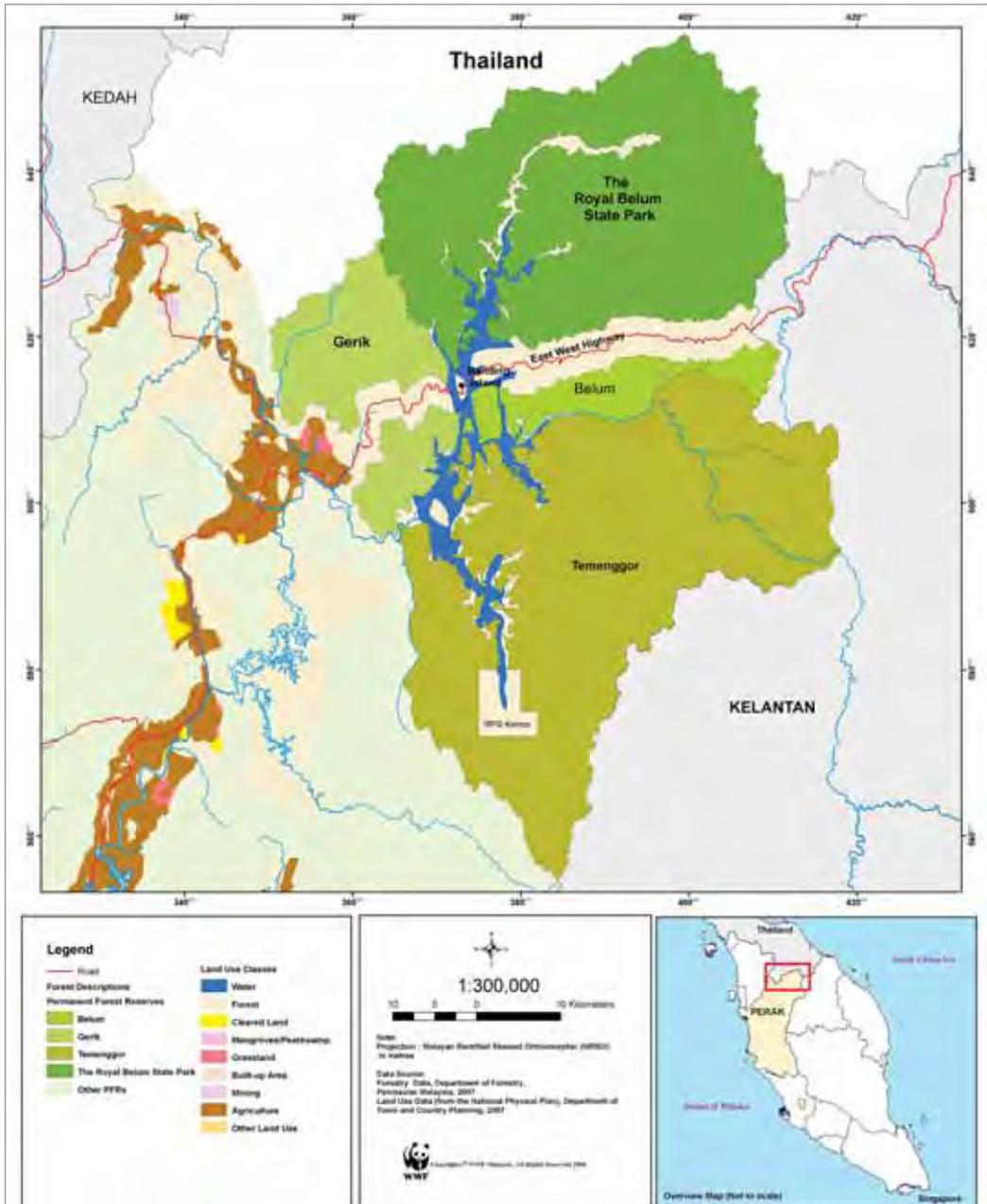


Fig. 2.
The Belum-Temengor Forest Complex, Malaysia.

Source: WWF-Malaysia

METHODS

This article is based largely on the findings of the first author, published in Azrina *et al.*, (2011) in the first published study of the involvement of the Orang Asli in wildlife trade in the BTFC and the factors that drive them

to conduct illegal trade. The surveys began in March 2010 and were completed in June of the same year. A total of 284 Orang Asli from eight villages in RBSP and Temengor Forest Reserve were interviewed in that study, comprising sub-ethnic groups of Jahai, Temiar and Semai. Based on responses received during pre-survey sessions with the Orang Asli, it was established that respondents aged below 30 years of age were not active in hunting/collecting and selling of forest resources. Hence, respondents for this research were confined to those aged between 30 and 79 years. Interviews were conducted via structured questionnaires between the enumerators and respondents to ensure independent and unbiased feedback from each of the respondents. The questionnaires included respondents’ profile, employment and income, respondents’ perception towards forests and wildlife and their activities in the forest including hunting of wildlife as well as human-

| AREA | SIZE |
|-------------------------------------------|------------|
| Royal Belum State Park | 117 500 ha |
| Belum Forest Reserve | 16 000 ha |
| Temengor Forest Reserve | 148 000 ha |
| Temengor Lake/Hydroelectric Dam | 15 200 ha |
| Forest buffer along the East-West highway | 3 km |
| East-West highway | 124 km |

Table 1. Key components that make up the BTFC.

wildlife conflict matters. Eight villages from the Banun Regrouping Plan (RPS Banun) were considered in the survey: Kampong (Kg.) Pulau Tujuh, Kg. Selaor, Kg. Air Banun, Kg. Tekam, Kg. Semelor, Kg. Chiong, Kg. Sungai Kejar and Kg. Sungai Tiang. A summary of these are presented in this paper. Additional findings and observations of the authors are included as well.

Traditional livelihoods of Orang Asli

The Orang Asli are the indigenous people of Peninsular Malaysia, as defined by the *Aboriginal Peoples Act 1954*. There are three major groups, namely Negrito, Proto-Malay and Senoi (Nicholas, 2000), which are further divided into 18 sub-ethnic groups. According to the Department of Orang Asli Affairs (JHEOA) (2008), approximately 141 230 Orang Asli live in Peninsular Malaysia, of whom 5560 individuals live in northern Perak, including in the BTFC. Orang Asli in the BTFC comprise a majority of the Jahai (sub-ethnic of Negrito) and Temiar groups (sub-ethnic of Senoi).

The forest has been the ancestral homeland of the Orang Asli for millennia, providing them with a means of subsistence. The current lifestyle of Orang Asli in BTFC today, however, is somewhat different from their previously nomadic lifestyle. Today, most are resettled into two main areas, partly through a government scheme established almost 30 years ago—the Regrouping Plan (RPS)—to facilitate the construction of the Temengor Hydroelectric Dam. According to Azrina *et al.* (2011), almost 50% (130 people) of the respondents interviewed in RPS Banun originated from locations outside their current village. The villagers living in BTFC are mainly from RPS Banun, which comprises 13 resettled villages spread across the BTFC, and the village in Pos Kemar in the Temengor Forest Reserve. Nevertheless, a minority of Orang Asli communities have chosen to continue their traditional nomadic lifestyles and live deep in the forest, isolated from others.

The livelihood of the Orang Asli revolves around their natural environment (Fig. 3). The traditional use of natural resources from the forest has been the basis for sustaining their survival as there are limited opportunities to make a living. Wildlife is often valued by Orang Asli from a purely practical standpoint, depending on their ethnicity, cultural, religions/beliefs and traditional practices. They still practice the traditional activities of harvesting natural resources, which include hunting (using blow-pipes and various types of traps), fishing, and the collection of herbs and tubers, and are known to collect for sale and for cultural purposes non-consumptive forest products such as rattan and agarwood (Azrina *et al.*, 2011; Nagata, 1997; Benjamin, 2001) (Figs. 3, 4 and 5). Some other seasonal forest products such as petai (*Parkia* spp.) and honey are collected for consumption and sale.

More than 90% of the 284 respondents said the forest is important to them as a main source of food and income (Azrina *et al.*, 2011). Some are involved in the small-scale

farming of crops such as tapioca, banana, corn and hill paddy, mainly for their own consumption, while others grow rubber trees. In the past, some Orang Asli practised swidden (slash-and-burn) cultivation for crops. Economic practices vary between the ethnic groups. For example, the sub-ethnics of Senoi practise shifting cultivation, growing hill paddy and vegetables, whilst the sub-ethnics of Negrito are nomadic and rely more on gathering wild tubers and other forest resources (Benjamin, 2001). Today, however, many Orang Asli in BTFC have stopped growing hill paddy or vegetables due to conflicts with wildlife, such as elephants and Wild Boar.

The Orang Asli minority represents only 0.5% of the total population of Malaysia. Most live in poverty and lag behind in the country's development (Nicholas, 2000). There is a high rate of illiteracy and most lack marketable skills, and depend on natural resources to sustain life. The development and modernization of a nation often affects the minority most, and this is no different with the Orang Asli. Their livelihoods today have significantly changed, with increasing dependency on cash to buy goods. As a result, some communities have diversified into other sectors, such as working as school security guards, in restaurants, in logging camps, and small-scale farming such as rubber cultivation. A small number of Orang Asli across Peninsular Malaysia have become entrepreneurs, lecturers and teachers, and 384 Orang Asli students graduated from local and foreign universities between 2004 and 2009 (Abdul Jabar, 2010). Despite this, most earn below MYR100 (USD33) a month (Azrina *et al.*, 2011).

Legislation governing Orang Asli hunting rights

Prior to December 2010, *Part V—General Exceptions and Presumptions, Clause (52)* of the *Protection of Wildlife Act 1972* gave the Orang Asli the right to shoot, kill or take certain wild animals and wild birds described in Schedules Two and Four of the Act, for the purpose of providing food for himself and his family. This Act however has been repealed by the *Wildlife Conservation Act 2010*. Section 51 of the new Act makes allowances for Orang Asli to hunt for his own sustenance or the sustenance of family members. However, the animals he is permitted to hunt has been limited to 10 species, as specified in *Sixth Schedule (Section 51)—List of wildlife for aborigine's consumption*. These are Wild Boar *Sus scrofa*, Sambar Deer *Rusa unicolor*, Lesser Mouse Deer *Tragulus javanicus*, Pig-tailed Macaque *Macaca nemestrina*, Silvered Leaf-monkey *Trachypithecus cristatus*, Dusky Leaf-monkey *Trachypithecus obscurus*, Malayan Porcupine *Hystrix brachyura*, Brush-tailed Porcupine *Atherurus macrourus*, White-breasted Waterhen *Amaurornis phoenicurus* and Emerald Dove *Chalcophaps indica*. Any species listed in this Schedule shall not be sold or exchanged for food, or for monetary gain. Any Orang Asli found breaking this law, can be fined up to MYR10 000 (USD3303) or sentenced to imprisonment for up to six months, or both.

In accordance with the *Aboriginal Peoples Act 1954, Section on Rules Clause (19) (1) (h and i)*, the Minister of Rural and Regional Development may establish regulations for execution, within the purposes of this Act and in particular for the following: to allow indigenous people to take forest resources in their respective areas, and to regulate the capture of wild birds and animals by the indigenous people.

Balancing sustainable livelihoods, wildlife trade and conservation

Despite being protected by the *Wildlife Conservation Act 2010*, which came into effect in December 2010, wildlife in BTFC is threatened by various factors. Foremost among them is illegal hunting and trade by local communities in and around BTFC (Malay, Orang Asli and ethnic (Malaysian) Chinese), foreigners (Thai and Cambodian), as well as those living elsewhere in the country. Unsustainable logging and poor management of issues such as human-wildlife conflict and encroachment further exacerbates this problem.

The Orang Asli have been known to engage in trade in non-timber forest products and in wildlife for generations, either amongst the Orang Asli communities themselves or externally with middlemen (Nagata, 1997; Benjamin, 2001; Azrina *et al.*, 2011). Dunn (1975) reported the involvement of Orang Asli in trading ivory, rhinoceros horns, porcupine quills, parrots, and other wildlife and related parts. Hunting and gathering activities amongst Orang Asli are normally carried out sporadically (Tachimoto, 2001) and this practice continues today. However, according to Tachimoto, (2001), in the past the Orang Asli hunted with families/relatives and took only what they needed to feed their families. Howell *et al.* (2010) documented that wildlife species usually traded by Orang Asli include tortoises and freshwater turtles, Barking Deer *Muntiacus muntjac*, Wild Boar, monitor lizard, mouse deer, monkey, Sunda Pangolin *Manis javanica*, porcupines and frogs. These activities serve to supplement their income.

The study by Azrina *et al.* (2011) highlights that the wildlife hunted by Orang Asli in BTFC is mainly for consumption and that more than half of the 284 respondents (66.7%) participate in the hunting and collection of forest resources. Another 33.3% of respondents did not participate in hunting and forest resource gathering activities due to old age and deteriorating health, being full-time housewives, or being no longer dependent on forest resources for their livelihoods. Table 2 lists the animals that are hunted by Orang Asli in BTFC, and their use, as documented by Azrina *et al.* (2011). The uses are divided into three categories: (i) for personal consumption only; (ii) for sale; and (iii) for personal consumption and sale. Respondents were asked to select one of these three categories in relation to their involvement in hunting/collection of each of the species listed in Table 2 in order to gauge their use of forest resources. The category “personal consumption only”



FIG. 3. AN ORANG ASLI VILLAGE IN ROYAL BELUM STATE PARK, LOCATED IN THE BELUM-TEMENGOR FOREST COMPLEX.



FIG. 4. A TEMPORARY CAMP OF THE ORANG ASLI SET UP WHILE COLLECTING FOREST RESOURCES TO SUSTAIN LIVELIHOOD.



FIG. 5. AN EXAMPLE OF A CONVENTIONAL TRAP SET ON THE BRANCH OF A TREE TO CATCH SMALL PRIMATES OR OTHER SMALL MAMMALS.

refers to the Orang Asli harvesting forest resources for food and other uses (including medicinal); the category “for sale only” refers to forest resources sold as a source of income to sustain their livelihoods; and the category “personal consumption and sale only” refers to respondents who harvest forest resources both for food and for sale as a source of income.

Fish (65.8%), frogs (60.2%) and soft-shelled terrapins (53.2%) were the top three taxa harvested for consumption and commercial sale, figures which constitute almost half of the total respondents involved in hunting of those particular species (Table 2). Birds, primates and ungulates such as Barking Deer, Sambar Deer and Wild Boar were mostly hunted for foods to sustain livelihoods.

Orang Asli are also known to hunt totally protected wildlife, however, the occurrence rate of such activities for some of the larger mammals is lower, with respondents involved in the hunting of BTFC’s three large mammals reporting the lowest figures for rhinoceros (2.8%), elephants (1.8%) and Tigers (0.4%). According to the respondents, these animals are not hunted intentionally but, rather, are avoided as much as possible in view of the danger they pose. However they are used as a source of food when encountered opportunistically while foraging in the forest. For example, a young elephant might be killed for food if it is caught in traps set for other animals. Some Orang Asli are known to consume elephant and Tiger meat. An elderly villager claimed to have sighted a rhinoceros in the BTFC a

decade earlier; the specimen had been used for food and other purposes (Table 2). The Orang Asli interviewed were otherwise unaware of any recent sightings (Azrina *et al.*, 2011). According to Azrina *et al.* (2011), pangolins were reportedly hunted for food, as well as for sale, the latter most likely due to high demand by middlemen and the ease with which these animals can be captured.

The average monthly income generated solely from trading natural forest resources (wildlife and other forest products) is low, ranging from MYR51 (USD17) to MYR100 (USD33) (21.1% of respondents), whilst a minority of respondents (1.1%) earn between MYR400 (USD133) to MYR600 (USD200) (Azrina *et al.*, 2011). The exchange rate is at 2011 rates: MYR1=USD0.33.

In recent years, changes have been observed in the use of wildlife in BTFC by Orang Asli, with some of the animals killed being sold for commercial purposes. Some of these animals are totally protected and, judging from local media reports, this exploitation is showing an increasing trend. A brief assessment conducted by WWF-Malaysia in 2009 revealed a similar increase in incidences of Orang Asli involved in illegal trade of wildlife, particularly in the supply of exotic meat to middlemen, which can fetch high prices (Azrina *et al.*, 2011). In 2005, PERHILITAN detained an Orang Asli and a local (Malaysian) Chinese for illegally smuggling 103 pangolins (Hajah Khairiah *et al.*, 2005). In 2008, an Orang Asli was fined MYR3000 (USD857) for being in possession of 68 frozen Common Palm Civets *Paradoxurus hermaphroditus* in his home in the southern

| Forest resources | USE OF FOREST RESOURCES | | | |
|-----------------------------------------------------|-------------------------------|-------------------|---------------------------------------|-----------------------------------|
| | Personal consumption only (%) | For sale only (%) | Personal consumption and for sale (%) | Total respondents involvement (%) |
| Wild animals | | | | |
| Fish | 28.9 | 7.7 | 29.2 | 65.8 |
| Frog | 16.5 | 15.1 | 28.5 | 60.2 |
| Soft-shelled terrapin | 19.4 | 9.2 | 24.6 | 53.2 |
| Monkey | 45.1 | 0.0 | 0.4 | 45.4 |
| Wild Boar <i>Sus scrofa</i> | 39.8 | 1.8 | 1.1 | 42.6 |
| Barking Deer <i>Muntiacus muntjak</i> | 38.7 | 0.4 | 2.1 | 41.2 |
| Bird | 36.3 | 0.4 | 4.2 | 40.8 |
| Deer | 31.3 | 0.7 | 1.8 | 33.8 |
| Pangolin <i>Manis javanicus</i> | 9.9 | 5.7 | 4.2 | 19.8 |
| Gaur <i>Bos gaurus</i> | 11.3 | 0.0 | 0.0 | 11.3 |
| Malayan Sun Bear <i>Helarctos malayanus</i> | 8.1 | 0.0 | 0.7 | 8.8 |
| Snake | 3.9 | 0.0 | 0.0 | 3.9 |
| Sumatran Rhinoceros <i>Dicerorhinus sumatrensis</i> | 2.1 | 0.4 | 0.4 | 2.8 |
| Asian Elephant <i>Elephas maximus</i> | 1.8 | 0.0 | 0.0 | 1.8 |
| Tiger <i>Panthera tigris jacksoni</i> | 0.4 | 0.0 | 0.0 | 0.4 |
| Plants and herbs | | | | |
| Gaharu (Agarwood) <i>Aquilaria</i> | 0.0 | 53.9 | 3.5 | 57.4 |
| Bamboo | 49.3 | 3.2 | 4.2 | 56.7 |
| Rattan <i>Calamus</i> sp. | 11.6 | 34.9 | 6.3 | 52.8 |
| Honey | 10.2 | 15.1 | 13.7 | 39.1 |
| Rafflesia | 7.4 | 10.6 | 12.0 | 29.9 |
| Others (medicinal herbs) | 5.3 | 5.6 | 6.0 | 16.9 |

Table 2. Forest resources and their use by Orang Asli in the Belum-Temengor Forest Complex.

Source: Azrina *et al.* (2011)

State of Johor (Shepherd and Shepherd, 2010). In early 2010, an Orang Asli from Perak who worked with a middleman was reportedly attacked by a Tiger after he had snared the animal in a forest reserve (Yeng, 2010). More recently, an Orang Asli headman was arrested for poaching and keeping the meat of endangered animals, including Leopard, Malayan Sun Bear and deer, in a refrigerator (Anon., 2011a).

Though these cases are being reported, the true extent of Orang Asli involvement in wildlife hunting and trade in the BTFC is not fully known. The majority of respondents in Azrina *et al.* (2011) claimed that the forest resources in BTFC have greatly reduced and that such loss was affecting their livelihoods, forcing them to engage in other activities. In many cases, marginalized Orang Asli communities are said to be manipulated by middlemen into hunting highly valuable and sought-after endangered species (Anon., 2011b; Azrina *et al.*, 2011). Most of the middlemen who trade wildlife and other forest resources with Orang Asli are known to be from larger towns such as Sungai Petani, Bukit Mertajam and Penang (Nagata, 1997). These middlemen are not Orang Asli but are from the other ethnic communities. According to the PERHILITAN Pahang State Director, Khairiah Mohd Shariff, Orang Asli were exploited by middlemen to trap wildlife due to their expertise in tracking wildlife routes and resting places, which boosts the chances of killing an animal (Anon., 2011b). The complexities involving Orang Asli and hunting and trade is not properly understood and further extensive studies are needed in BTFC and across all States in Peninsular Malaysia to improve understanding of these connections and the factors that drive them, and in identifying remedial alternative options.

On the other hand, Orang Asli are also known to participate in wildlife management efforts by providing information on encroachments, hunting, snares, the capture of fish using explosives, and other such activities that are known to occur in the BTFC. Their commitment to providing information despite the limitations of mobility, money, telecommunications and, above all, the risks to their lives, is a strong indication that some Orang Asli realize the damage caused by such activities. The elderly headman of Kg. Semelur in the Temengor Forest Reserve is aware of the repercussions such activities bring to the forest, and stated that animals such as Barking Deer, Sambar Deer and Malayan Sun Bear no longer occur around his village, in contrast to earlier years. Some Orang Asli are employed by researchers to help in conservation-related projects in the BTFC and many others have been trained as nature guides, or are employed in local ecotourism activities. Many Orang Asli recognize that if their ancestral heritage is to be protected and preserved, supporting conservation efforts and empowering their community is essential.

What drives Orang Asli into illegal wildlife hunting and trade

Through the national RPS programme, some Orang Asli have succeeded in overcoming poverty and live a better life, but most of them in RPS Banun have not benefited from the programme. Today, they have become highly dependent on money to buy food and other material goods and some have taken advantage of their presence in the forest for monetary gains from illegal hunting and wildlife trade, despite being aware of the consequences of such practices.

Information gathered by TRAFFIC in BTFC indicates that the Orang Asli are generally opportunist poachers/collectors and/or traders. Field observations indicate that only certain Orang Asli individuals are involved in illegal hunting and trade. According to Azrina *et al.* (2011), socio-economic factors driving Orang Asli into illegal trade are i) the need to support large families and the prospect of financial gains to allow this; ii) unemployment due to lack of marketable skills; and iii) the presence of and lures offered by middlemen. The need to support their large families while living in poverty is an underlying factor. High illiteracy amongst Orang Asli and their lack of marketable skills make them vulnerable to exploitation by middlemen for wildlife supplies (Azrina *et al.*, 2011). The hunting and selling of wildlife thus becomes an easier way out of a difficult situation; some intentionally, while others, opportunistically. The continued, and in some cases, growing, existence of a pool of ready and greedy middlemen pushes the Orang Asli further into hunting and illicit trade (Azrina *et al.*, 2011).

A general lack of awareness in wildlife conservation is also a contributing factor. Living in a remote environment, most Orang Asli in BTFC have limited exposure to conservation discourse and of regulations

“ **LACK OF LAW ENFORCEMENT IS THE SINGLE MOST CRUCIAL FACTOR ENABLING THE CONTINUED ILLEGAL HUNTING AND WILDLIFE TRADE IN THE BELUM-TEMENGOR FOREST RESERVE** ”

governing the protection of wildlife and the ramifications of involvement in illegal hunting and trade. Some are more aware through exposure to education and outreach programmes organized by NGOs and select government agencies. The Orang Asli report on wildlife crimes to TRAFFIC and other NGOs. TRAFFIC, in collaboration with WWF-Malaysia, have held various dialogues with the Orang Asli to increase their knowledge and awareness in safeguarding the wildlife in their forests, including deliberations relating to human-wildlife conflict matters.

Traditional and cultural factors also affect the hunting practices of Orang Asli (Berkes *et al.*, 1994). Seventy-eight percent of respondents said they will not stop

hunting in BTFC, for the following reasons: (i) hunting is important in their lives and it is their right to hunt; (ii) hunting is their main source of income and their way of life; and (iii) poverty is affecting their ability to purchase adequate food supplies. Hunting is therefore essential for their subsistence, as inadequate assistance is given by the government (Azrina *et al.*, 2011). Another 13.4% of respondents stated that they will stop hunting completely on the condition that the government compensates them with a combination of money and a regular supply of daily necessities such as rice, sugar and salt, thereby eliminating the need for them to hunt.

Other factors to poaching and illegal trade in BTFC

Poaching by non-Orang Asli local communities and foreigners is known to occur in the BTFC (Abdul Kadir, 1998; Ahmad *et al.*, 2009). Field observations by TRAFFIC and WWF-Malaysia have recorded an abundance of shotgun cartridges, animal carcasses, wire snares, tree markings and abandoned camping sites. Azrina *et al.* (2011) revealed that Thais, Cambodians and local Malays—the main ethnic community in Malaysia—are the main parties that overexploit forest resources in the BTFC. Their research highlights that, according to the Orang Asli, the Malays were amongst the main perpetrators responsible for this overexploitation, setting snares for deers and porcupines, these animals being among their favourite sources of wild meat and regularly hunted for sale in the local markets. According to the Orang Asli, the Malaysian Armed Forces patrolling the Malaysia-Thailand borders are also known to be involved in hunting (Azrina *et al.*, 2011; Anon., 2011c). If true, this involvement would be a serious cause for concern.

Thai poachers are known to offer large sums of money to locals to act as their informers on any enforcement actions (Singh, 2005). Foreign poachers are also known to operate in large groups averaging 12 to 20 people and remaining in the forest for between 30 to 45 days at a time. In 2009, a joint enforcement initiative involving WWF-Malaysia, TRAFFIC and local enforcement agencies, resulted in an ambush on a foreigners' camp where 30 kg of rice, approximately 30 kg of sugar, salt, and other items including medicinal supplies, were discovered. Four Thais escaped but an accomplice was subsequently apprehended with six sacks of agarwood and Sunda Pangolin scales (WWF, 2009).

Other challenges

Inadequate enforcement in BTFC to mitigate poaching and illegal trade

After years of research carried out in BTFC by various bodies, including TRAFFIC, it is evident that lack of law enforcement is the single most crucial factor enabling the continued illegal hunting and trade in wildlife. If these



DAVID LAWSON / WWF-UK

Fig. 6. Wild Boars are among a number of species that the Orang Asli have permission to hunt.

activities are not controlled in the near future, more wildlife will be lost. Currently, reports of wildlife poaching and illegal trade incidences received by TRAFFIC and WWF-Malaysia are passed on to the relevant authorities such as PERHILITAN, PSPC, the Forestry Department and police for further action. More often than not, however, these cases are not followed-up, clearly giving the poachers and traders the message that they can continue with their plunder unhindered. Gaps and weaknesses in enforcement and prosecution also enable poachers and traders to continue committing wildlife crimes. Based on PERHILITAN's annual reports from 2003 to 2009, only five Tiger-related cases (four comprising illegal possession of Tiger parts and one case of a Tiger killed and dismembered) were prosecuted. Maximum penalties were not imposed in all cases. Efforts by TRAFFIC and WWF-Malaysia to support the initiation of a multi-agency task force to tackle poaching, wildlife smuggling and encroachment in the BTFC, which began in early 2010, came to fruition in the second half of the year. Chaired by the District Officer of Gerik, Perak, the enforcement team comprises all the enforcement agencies working in the area, including the Malaysian Royal Police, Marine Police, Malaysian Royal Customs, the Anti-Smuggling Unit, PSPC, the Forestry Department, PERHILITAN, the District Security Council, RELA and ATM. TRAFFIC and WWF-Malaysia are advisors to this taskforce. While its effectiveness is yet to be measured, it is hoped that it will play a pioneering role through multi-agency co-operation towards stemming illegal hunting and trade in and around the BTFC.

Human-wildlife conflict

Changes in the landscape due to the fragmentation and loss of habitats, road structures, and new villages have caused human-wildlife conflicts in the BTFC. This causes problems both for the Orang Asli and the wildlife. Agricultural expansion is reported to be one of the most

significant threats to the Sumatran Rhinoceros, Tiger and Asian Elephant (Clements *et al.*, 2010). Most of the Orang Asli villages in BTFC have been affected by the conflict with species, particularly with Wild Boars and elephants (Azrina *et al.*, 2011). The translocation of conflict elephants from other forests across Peninsular Malaysia into BTFC by PERHILITAN has resulted in human-wildlife conflicts as the elephant population is said to be increasing in the area (Azrina *et al.*, 2011). These conflicts cause damage to crops, which results in further financial loss to the Orang Asli.

Unsustainable logging

Unsustainable logging activities in and around BTFC not only affects water catchment areas, but results in a

more fragmented forested landscape, creating access for poachers (Ahmad *et al.*, 2009; Azrina *et al.*, 2011). Unsustainable forest management is causing the natural habitat of animals to shrink. Competition with wildlife for food and space is further pushing the Orang Asli to look for alternatives to sustain life, including illegal hunting and trade.

Water pollution from logging activities in the upper parts of the forest causes health hazards to Orang Asli in BTFC, who are highly dependent on natural water in their daily activities (Fig. 7). In the survey by Azrina *et al.* (2011), the villagers were observed to be using the lake and rivers in their daily activities such as for washing clothes, bathing and fishing. Polluted water resources will undoubtedly cause harm to their health in the long term.

FIG. 7. DOWNSTREAM WATER CATCHMENT IN TEMENGOR FOREST RESERVE AFFECTED BY HEAVY SILTATION DUE TO LOGGING ACTIVITIES, MAY 2011.



CONCLUSIONS

The relationship between the Orang Asli culture, wildlife hunting and conservation is interconnected, however our understanding of their involvement in wildlife trade is limited. More detailed studies are needed to understand the dynamics of this issue in order that the factors driving the Orang Asli's involvement in illegal hunting and trade can be addressed. Destructive consequences to wildlife from poaching, weak forest management and a lack of enforcement effort warrants immediate and urgent responses from all relevant parties, particularly the government that is tasked to safeguard biodiversity and the country's natural heritage.

The Orang Asli must be among the principal participants in decisions relevant to the management and development of BTFC, thus giving them a better opportunity to be directly involved in wildlife conservation efforts. Given their ancestral skills and knowledge of the forest, they must be empowered to safeguard the forest and its wildlife. Appropriate incentives for Orang Asli to play a positive role in wildlife conservation efforts are also important, especially as it relates to their livelihoods. The effectiveness of enforcement agencies in tackling illegal hunting and trade urgently has to be improved. Poaching and trade by various parties if not tackled efficiently will result in reduced populations of species, especially those that are highly threatened such as Tiger, Malayan Sun Bear, Asian Elephant and others. The loss of wildlife and resulting damage to ecosystem function in BTFC will have a profound impact on the indigenous communities and the wider world who depend—both aesthetically and practically—on the forest's natural resources.

RECOMMENDATIONS

The following key recommendations are made to mitigate illegal hunting and trade by poachers in the BTFC:

1. The awareness level amongst local communities and stakeholders needs to be increased through consistent, improved and well-strategized education and awareness programmes based on the concept of wildlife conservation from different aspects including livelihood and education, with full co-operation from relevant NGOs and government agencies.
2. There is an urgent need for improved enforcement and rigorous patrols in the forest, raids, seizures and prosecutions, to stem illegal poaching and trade in and around BTFC.
3. Wildlife trade problems in BTFC must be handled head-on and in a more effective and

cohesive manner, enhancing communication and co-operation with all relevant agencies.

4. Training and capacity-building support must be provided to enforcement agencies, and include the sharing of expertise in anti-poaching and wildlife trade strategies to improve government enforcement efficiency and success rates.
5. Alternative livelihood schemes for the Orang Asli communities must be further developed and enhanced by the government to alleviate poverty and further empower Orang Asli communities to support wildlife protection efforts.

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

The *TRAFFIC Bulletin* will henceforward carry only a selection of seizures and prosecutions that TRAFFIC considers to be particularly significant. Readers are asked to refer to the seizures section of the TRAFFIC website (www.traffic.org) for regular updates on cases reported from around the world.

The following cases relate to incidents in South-east Asia.

IVORY

MALAYSIA: On 2 September 2011, authorities confiscated some 700 African Elephant *Loxodonta africana* (CITES I) tusks destined for China. The tusks were packed in sacks and hidden in two containers of recycled plastic from Tanzania. More than 1000 African Elephant tusks were seized by officials in two earlier shipments. No arrests have been made but the cases are being investigated.

<http://www.google.com/hostednews/ap/article/ALeqM5gEnCyK7VbmJcryDqvSINPWInWThw?docId=2316efe71ed4b9da1d22b998dd345dd>

THAILAND: On 1 April 2011, Customs officials seized 2033 kg of ivory (CITES I) (247 tusks) that had been hidden among hundreds of boxes of frozen mackerel in a boat at Bangkok port; the shipment, apparently from Kenya, was reported to be the largest in the country in a year.

<http://www.capitalfm.co.ke/news/Kenyanews/Thai-customs-seize-two-tonnes-of-ivory-12263.html#ixzz1RslLuNBu>

VIET NAM: On 18 April 2011, police in the northern province of Quang Ninh seized 122 tusks and ivory (CITES I) pieces (300 kg) from the warehouse of a company based in Mong Cai City. The pieces had been packed in sacks and covered by soya beans. The warehouse manager confessed to police that he rented the space out to a stranger in Hai Phong.

On 6 May 2011, Customs officials at the port of Hai Phong, acting on information, discovered nearly 600 kg of African Elephant *Loxodonta africana* (CITES I) tusks hidden in a shipping container of rubber

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)

establishes international controls over trade in wild plants and animals, or related products, of species that have been, or may be, threatened due to excessive commercial exploitation. Parties have their own legislative vehicle by which to meet their obligations under CITES. The species covered by CITES are listed in three Appendices, according to the degree of protection they need:

APPENDIX I includes species threatened with extinction which are or may be threatened by trade.

Trade in specimens of these species is permitted only in exceptional circumstances. An export permit from the country of origin (or a re-export certificate from other exporting countries) and an import permit from the country of importation are required.

APPENDIX II includes species not necessarily yet threatened, but which could become so if trade is not strictly controlled. Species are also included in Appendix II if they are difficult to distinguish from other species in Appendix II, in order to make it more difficult for illegal trade to take place through misidentification or mislabelling. An export permit from the country of origin (or a re-export certificate from other exporting countries) is required, but not an import permit.

APPENDIX III includes species that any Party identifies as being subject to regulation within its jurisdiction for the purpose of preventing or restricting exploitation and as needing the co-operation of other Parties in the control of trade. Imports require a certificate of origin and, if the importation is from the State that has included the species in Appendix III, an export permit is required.

All imports into the European Union of CITES Appendix II-listed species require both an export permit/re-export certificate and an import permit.

from Tanzania. The suspects had placed the ivory in the tanks by cutting them open and soldering them shut. The container had been labelled for temporary import, and was already registered for re-export to China by a Vietnamese company in the neighbouring province of Quang Ninh.

On 29 September 2011, police in the central Nghe An Province, acting on information, caught three men with 209 kg of ivory (CITES I) thought to have been smuggled into the country.

The men were transporting the ivory by van on National Highway 1A in the provincial capital Vinh.

Another man escaped when three police cars stopped the vehicle for examination. The suspects told the police they had been taking the ivory for delivery to a trader in Vinh. The fourth person is being sought.

This was the largest ivory smuggling case ever discovered in the province.

<http://envietnam.org/library/Articles%20for%20news%20media%20section/Ivory-seized-from-Quang-Ninh-warehouse.html>; <http://www.thanhniennews.com/2010/Pages/20110419162522.aspx>; <http://www.timeslive.co.za/africa/article1053100.ece/Smuggled-African-ivory-tusks-seized-in-Vietnam>; <http://tuoitrenews.vn/cmlink/tuoiitrenews/society/209-kg-ivory-worth-288-000-seized-in-nghe-an-1.46252>

PANGOLIN

CAMBODIA: On 29 June 2011, the government-run Wildlife Rapid Rescue

Team (WRRT), acting on information, halted a bus heading south on National Road 5 to Phnom Penh; a passenger was found to be in possession of seven live Sunda Pangolins *Manis javanica* (CITES II) (21 kg) packed in a suitcase under his seat. After a health check, the animals were released in appropriate habitats.

<http://www.wildlifealliance.org/press-releases/2011/6/30/seven-live-pangolins-rescued-from-smuggler-on-bus.html>

INDONESIA: On 26 May 2011, Customs officials foiled an effort to ship 7.5 t of pangolin *Manis* (CITES II) meat to Viet Nam. A total of 309 crates, each containing between six and 10 adult and baby pangolins, were seized at the country's biggest port in Jakarta following x-ray examination of the shipment, which had been concealed under frozen fish. Some 65 kg of pangolin scales were also recovered.

Local media reported earlier in the month that a Customs office in northern Sumatra had also foiled an attempt to smuggle about 1700 pangolins to Viet Nam.

On 10 July 2011, Customs officers at Soekarno-Hatta International Airport seized 1.732 t of Sunda Pangolin *Manis javanica* (CITES II) meat and 380 kg of scales contained in 20 boxes, labelled as 'frozen fish'; some of the boxes had been stored in a warehouse in Bandengan. The shipment was believed to be destined for Singapore.

On 2 August 2011, a lorry containing hundreds of frozen pangolins *Manis*

(CITES II) was secured by Belawan port police in Medan. The police initially retreated after being told by guards on the vehicle that the shipment contained rabbit meat; however they followed the lorry to Belawan port to a cold storage area that contained fish products awaiting export. When the contents of the lorry were unloaded, police saw that hundreds of dead pangolins were being removed from the vehicle and loaded into a freezer. The driver and guards were arrested.

On 28 September 2011, marine police in north Sumatra seized 111 Sunda Pangolins *Manis javanica* (CITES II) and arrested three men who were en route to Malaysia with the animals. The pangolins, three of which had perished, were hidden in 20 sacks on a boat seized in waters off Belawan. The suspects were believed to have left from Pantai Cermin, a beach resort near Medan. The animals were to be released into the wild.

<http://www.reuters.com/article/2011/05/26/us-indonesia-environment-wildlife-idUSTRE74P47K20110526> to improve health; <http://www.bcoetta.net/index.php/berita>; <http://asiancorrespondent.com/61734/pangolin-meat-smuggling-foiled/>; <http://www.traffic.org/home/2011/9/30/indonesia-foils-pangolin-smuggling-attempt.html>

MALAYSIA: On 12 June 2011, the Penang Department of Wildlife and National Parks seized 35 pangolins *Manis* (CITES II) in a raid at Mak Mandin in Butterworth, Penang. A man was arrested while transferring the animals from one car to another. It is believed that he was trying to smuggle the pangolins to neighbouring countries by road. Both vehicles had been modified to conceal the animals.

On 20 September 2011, at Kota Baru Sessions Court, a man pleaded guilty to the illegal possession of 40 pangolins *Manis* (CITES II) (200 kg) and was fined MYR50 000 (USD 16 000).

The mammals had been hidden in a car believed to be heading for China via Thailand and which was stopped on 4 April by Perhilitan's Wildlife Crime Unit and the police at Bukit Yong, Pasir Putih, in the northern State of Kelantan. The pangolins were to be released in the wild.

<http://my.news.yahoo.com/35-pangolins-worth-rm50-000-seized-104334862.html>; http://www.monstersandcritics.com/news/asiapacific/news/article_1630549.php/Malaysian-wildlife-officers-seize-40-live-pangolins-bound-for-China; <http://thestar.com.my/news/story.asp?file=/2011/9/21/courts/9542321&sec=courts>

THAILAND: On 20 April 2011, a van packed with 173 live pangolins *Manis* (CITES II) and 130 kg of dried snake skins was confiscated by Customs officials in Prachuap Khiri Khan. The driver, a Thai national, is believed to have transported the cargo from the southern town of Had Yai to Songkla, and was bound for Bangkok. He was handed over to the National Parks, Wildlife and Plant Conservation Department charged with violating Customs regulations and for infringing CITES; the pangolins were also placed in their charge.

Prachuap Khiri Khan is a transit point through which all traffic from Indonesia and Malaysia must pass to access central and northern Thailand, and the rest of Indochina, and is an ideal location for authorities to focus their enforcement attention.

“ **ILLEGAL AND UNSUSTAINABLE WILDLIFE TRADE HAS REACHED UNPRECEDENTED LEVELS IN SOUTH-EAST ASIA. IF ENFORCEMENT EFFORTS ARE NOT STEPPED UP, MANY SPECIES WILL BE LOST FOREVER. EXISTING TOOLS SUCH AS CITES AND THE ASEAN WILDLIFE ENFORCEMENT NETWORK MUST BE FULLY UTILISED AND URGENT ACTION MUST START NOW** ”

Chris R. Shepherd, Deputy Regional Director, TRAFFIC Southeast Asia

On 25 September 2011, authorities seized nearly 100 pangolins *Manis* (CITES II) from a lorry at a checkpoint in Prachuap Khiri Khan; the driver was detained. It was reported that the specimens, believed to be destined for consumption overseas, had come from Malaysia or Indonesia and were en route to Viet Nam or China.

<http://www.traffic.org/home/2011/4/20/live-pangolins-and-dried-snake-skins-seized-in-thailand.html>; <http://www.cbsnews.com/stories/2011/09/26/lap/asia/main20111448.shtml>

VIET NAM: On 8 July 2011, Quang Ninh police stopped a car and discovered a sack containing 83 Chinese Pangolins *Manis pentadactyla* (CITES II) (424 kg). The driver admitted that he had transported the specimens from Bac Ninh province to sell in Mong Cai, Quanh Ninh. The pangolins were transferred to the Forest Protection Department (FPD) of Tien Yen district.

On 10 August 2011, a Thai Binh border guard apprehended three people who were found to have illegally transported 12 pangolins *Manis* (CITES II) (60 kg). The animals were taken as evidence and the case was transferred to Thai Binh's Forest Protection Department for investigation.

Education for Nature-Vietnam (ENV); http://envvietnam.org/E_News/E_430/E_430.html

REPTILES

BRUNEI: On 18 August 2011, marine police detained a boat in Brunei near the border with Malaysia during a routine check; some 4700 turtle eggs were seized from Sundar in the town of Lawas, Sarawak (Malaysia). A fisherman was arrested and the case is being investigated by the Royal Brunei Customs.

Turtles are protected in Brunei under the *Wildlife Protection Act of 1984* and the *Customs Act* and are listed in CITES Appendix I.

www.brunei-online.com/sunday/news/aug21h1.htm

INDONESIA: On 5 July 2011, maritime police arrested three men in Denpasar, Bali, who were allegedly attempting to smuggle 18 live Green Turtles *Chelonia mydas* (CITES I) onto the island; a fourth man fled the scene. The police had approached the suspects from their patrol boat as the men offloaded the reptiles onto a beach at Tanjung Benoa Bay. The agency released 16 of the reptiles into the sea, while the remaining two were sent to the agency's turtle conservation centre on Serangan Island, where they will be used as evidence.

<http://www.thejakartaglobe.com/news/sea-turtle-smugglers-hooked-in-bali/450818>

MALAYSIA: On 16 August 2011, the Department of Wildlife and National Parks (Perhilitan) seized 589 Indian Star Tortoises *Geochelone elegans* (CITES II) at Kuala Lumpur International Airport. The department said the reptiles, a species protected under the *International Trade in Endangered Species Act 2008* (Act 686), were found in two unclaimed bags. No arrest was made and the tortoises were taken to Perhilitan headquarters for safekeeping.

<http://www.nst.com.my/Inst/articles/11kura2/Article#ixzz1VLGWEuY9>

THAILAND: On 8 April 2011, it was reported that authorities at a checkpoint in southern Thailand had seized 1800 Bengal Monitors (CITES I) being smuggled in three pickup trucks headed to Bangkok. Customs officials say the lizards were hidden in mesh bags and stashed in open containers behind fruit boxes. The specimens were thought to have been destined for human consumption.

On 10 June 2011, authorities found nearly 400 protected tortoises in unclaimed bags at Suvarnabhumi International Airport, Bangkok. The Indian and Burmese Star Tortoises (*Geochelone elegans* and *G. platynota*, both CITES II) had been in luggage for about 10 days by the time they were found; loading tags suggested they had originally come from Dhaka, Bangladesh, before going to Japan, via Bangkok, and returning to Bangkok to be collected. Four specimens had perished.

On 5 July 2011, two people were arrested in the north-eastern province of Nong Khai while transporting 1000 wild animals in Pak Khat district. Personnel from Forest Protection Unit I and Nong Khai police arrested the pair near the Mekong River in Fao Rai district. Inside 186 plastic containers were 85 boxes of monitor lizards *Varanus* (CITES II), 17 boxes of Pythons *Python* (CITES II) and 84 boxes of rat snakes.

The detainees said they had been hired by a wildlife trafficking agent in Ayutthaya to transport and send the wildlife to the Mekong River where other agents were to take the animals to Lao PDR, from where they would be transhipped to customers in Viet Nam.

On 12 July 2011, authorities at Suvarnabhumi International Airport discovered two Radiated Tortoises *Astrochelys radiata* (CITES I), four Indian Star Tortoises *Geochelone elegans* (CITES II), three Bearded Dragons *Pogona vitticeps* and 10 (unidentified) frogs during x-ray examination of luggage belonging to a Chinese national bound for Hong Kong. The suspect was arrested.

On 20 August 2011, the Thai Mekong River patrol unit in Nong Khai's Ratana Wapi district seized 100 monitor lizards *Varanus* sp. (CITES II), 100 rat snakes, 30 turtles and six soft-shelled turtles, as well as frozen parts of a Leopard *Panthera pardus* (CITES I) and three bear paws. Lt Weerawat Yasothon, head of the unit's Ratana Wapi boat station, said the seizure was ordered after the officers received an

intelligence report that wildlife parts and animals would be smuggled out of the country across the Mekong River at Ban Tarn Choom village in Ratana Wapi. Officers set up an ambush and waited until a group of men turned up and started to load items on to a boat docked on the river bank. The men fled. The seized animals were believed to be destined for China or Viet Nam.

On 14 September 2011, the Department of Wildlife and National Parks seized 100 Indian Star Tortoises *Geochelone elegans* (CITES II) from a warehouse containing aquaculture products in Batu Berendam, Melaka. The owner failed to show any documents or letters of authorization to keep wildlife and did not have a licence for the business. Investigations will be carried out under the *Wildlife Conservation Act 2010* and the *International Trade in Endangered Species Act 2008*.

On 14 September 2011, nearly 2000 monitor lizards *Varanus*, and hundreds of turtles were among a huge haul of live animals found concealed in a lorry at a checkpoint in Pranburi, central Thailand. The vehicle is believed to have been on its way across Thailand to Lao PDR. It was the second seizure at the checkpoint this year. In total, Customs officials found 1940 monitor lizards, 717 turtles, 44 civets, 15 cobras and five pythons. The driver of the van was arrested. Thailand's fisheries department was to release the turtles into the wild and the other animals were to be sent to a government park centre.

<http://www.foxnews.com/world/2011/04/08/thailand-seizes-1800-monitor-lizards#ixzz1RsKQBbPH>; <http://au.news.yahoo.com/thewest/a/-/world/9624057/hundreds-of-tortoises-seized-at-thai-airport/>; <http://www.pattayamail.com/news/two-suspected-wildlife-smugglers-detained-with-1-000-animals-4610/>; <https://www.facebook.com/notes/traffic-southeast-asia/four-star-seizure-smuggler-with-endangered-tortoises-nabbed-at-bangkok-airport/232916080072577/>; <http://www.bangkokpost.com/news/local/252713/animal-parts-wildlife-seized>; <http://my.news.yahoo.com/100-protected-tortoises-seized-melaka-142654063.html>; <http://www.google.com/hostednews/afp/article/ALeqM5h3oZTWk2M5BoX5N0BtzfpBsd2whQ?docId=CNG.84013840d691548b4d501bfc5f665885.531>

VIET NAM: On 19 April 2011, traffic police in Ba Ria Vung Tau province stopped a van and discovered 18 Green Turtles *Chelonia mydas* (CITES I) (279 kg); 12 were dead. An initial investigation showed the driver had been hired by a man in Ho Chi Minh City to transport the turtles to Vung Tau City for sale. The authorities released the live turtles into the sea.

On 20 April 2011, rangers of Dak Rong Nature Reserve stopped a van and seized a large amount of wildlife including two Reticulated Pythons *Python reticulatus* (CITES II), three Brush-tailed Porcupines *Atherurus macrourus*, four Common Palm Civets *Paradoxurus hermaphroditus*, seven Impressed Tortoises *Manouria impressa* (CITES II), a Giant Asian Pond Turtle *Heosemys grandis* (CITES II) and four Asian Leaf Turtles *Cyclemys tchepoensis* (CITES II). The driver and the owner could not produce permits showing that the animals were of legal origin and registered. All the animals were released into the wild and the suspects received administrative fines.

On 20 April 2011, Nghe An Forest Protection Department (FPD) stopped a freezer van and discovered 349 Giant Asian Pond Turtles *Heosemys grandis* (CITES II) and Yellow-headed Temple Turtles *Hieremys annandalii* (CITES II) weighing approximately 1.5 t. The driver was unable to produce permits showing the turtles were of legal origin and registered. He admitted he had been hired by a local resident to transport the reptiles to Quang Ninh province for sale. The case is under investigation.

On 30 April 2011, Thanh Hoa authority confiscated more than 1000 wild animals including 465 Common Rat Snakes *Ptyas mucosus* (CITES II), 350 Indochinese Rat Snakes *Ptyas korros* (CITES II), 135 Radiated Rat Snakes *Elaphe radiata*, nine Water Monitors *Varanus salvator* (CITES II), four Masked Palm Civets *Paguma larvata* and 138 Asian Leaf Turtles *Cyclemys tchepoensis* (CITES II). A person was fined VND490 million (USD23 615).

On 12 May 2011, Quang Binh environmental police stopped a bus from Lao PDR and seized a number of wild animals including five Clouded Monitors *Varanus nebulosus* (CITES I), three King Cobras *Ophiophagus hannah* (CITES II), a Giant Asian Pond Turtle *Heosemys grandis* (CITES II) and two Keeled Box Turtles *Cuora mouhotii* (CITES II). All the animals were transferred to the Forest Protection Department (FPD) Mobile Team of Quang Binh province.

Previously, on 6 May 2011, Ca Mau authorities confiscated five Common Palm Civets *Paradoxurus hermaphroditus* that had been kept illegally at a local residence. The animals were released into the U Minh Ha's Nature Park by the FPD Mobile Team, No. 1 Forest Fire Team and the environment police of Ca Mau province.

On 27 May 2011, security staff at Quang Ngai station found four bags containing 45 kg of King Cobras *Ophiophagus hannah* (CITES II) and Chinese Cobras *Naja atra* (CITES II) hidden under a seat on a train travelling from Ho Chi Minh City to Hanoi. After the discovery was made, panic broke out and passengers fled the carriage allowing the smuggler to escape in the ensuing confusion. Officers handed the snakes over to Quang Ngai province FPD for release into the wild.

<http://thiennhien.org/index.php?page=about&parent=0&id=294>; Education for Nature-Vietnam (ENV); <http://thiennhien.org/index.php?page=about&parent=0&id=297> <http://thiennhien.org/index.php?page=about&parent=0&id=304>; http://www.envietnam.org/E_News/E_417/E_417.html; http://www.envietnam.org/E_News/E_419/E_419.html

OTHER SEIZURES

MALAYSIA: On 16 May 2011, officers of the Department of Wildlife and National Parks (Perhilitan), acting on information, seized eight bear parts, five Leopard *Panthera pardus* (CITES I) parts, eight dead mouse deer and seven pieces of deer meat at Kampung Ayer Molek in Bukit Ibam, Muadzam Shah, Pahang. The suspect was arrested and detained at Bukit Ibam police station to aid investigations under the *Wildlife Conservation Act 2010*.

On 5 July 2011, officers of the Department of Wildlife and National Parks (Perhilitan) seized two pieces of cooked wild meat (1.27 kg) from a restaurant in Jalan Kuching. The items were believed to be parts of Malayan Sun Bear *Helarctos malayanus* (CITES I), a species protected under the *Wildlife Conservation Act 2010*. The case is being investigated.

<http://thestar.com.my/news/story.asp?file=/2011/5/16/nation/8689981&sec=nation>; <http://news.asiaone.com/News/AsiaOne%2BNews/Malaysia/Story/AlStory20110706-287695.html>

THAILAND: On 13 May 2011, authorities at Suvarnabhumi International Airport arrested a passenger whose suitcases were found to contain two baby Leopards *Panthera pardus* (CITES I), one Malayan Sun Bear *Helarctos malayanus* (CITES I) cub and two baby macaques. The animals had been drugged and were bound for Dubai. The suspect, a United Arab Emirates citizen, was waiting to check in for his flight when he was apprehended by undercover anti-trafficking officers who had been monitoring him since his purchase of the animals.



DEPT OF WILDLIFE AND NATIONAL PARKS, PAHANG.

BEAR PARTS SEIZED IN MALAYSIA.

The sedated animals were in flat cages inside canisters containing air holes. Authorities believe the man was part of a trafficking network and were searching for accomplices. It was not known if the animals were destined to be resold or to be kept as exotic pets.

TRAFFIC Southeast Asia; <http://www.arabtimesonline.com/NewsDetails/tabid/96/smid/414/ArticleID/169101/t/Thais-hold-UAE-man-in-wildlife-smuggling-bust/Default.aspx>

PHILIPPINES: On 25 May 2011, the prime suspect in the foiled smuggling of corals, marine turtles and other marine resources at the Port of Manila surrendered to the authorities. The consignee of two container vans loaded with the items that were about to be exported to China and to Europe told the authorities that he would help identify other persons involved.

The shipment was reported to include 161 preserved Hawksbill Turtles *Eretmochelys imbricata* (CITES I) and Green Turtles *Chelonia mydas* (CITES I), 21 000 pieces of black corals (CITES II), more than 7300 pieces of seashells, and 196 kg of sea whips Gorgonacea. The marine turtles and corals had been preserved in formalin and wrapped in newspaper.

Some of the turtles were estimated to be between 80 and 100 years of age; juvenile turtles were also included in the shipment.

On 10 August 2011, authorities seized a specimen of one of the world's rarest parrots after boarding a boat suspected of being involved in illegal wildlife trading. The critically endangered Red-vented Cuckoo *Cacatua haematuropygia* (CITES I), found only in the Philippines, was seized along with 71 Hill Mynahs *Gracula* spp. (CITES II) and 42 Blue-naped Parrots *Tanygnathus lucionensis* (CITES II) from a boat at the resort of El Nido. Coastguard

and environmental protection officers boarded the vessel before it set sail for Manila. The authorities are seeking the owners of the cargo, while the captain of the boat was fined for carrying prohibited goods.

<http://www.manilastandardtoday.com/insideMetro.htm?f=2011/may/25/metro3.isx&d=2011/may/25>; <http://www.arabtimesonline.com/NewsDetails/tabid/96/smid/414/ArticleID/172460/reftab/149/t/Rare-Philippine-parrot-seized-from-boat/Default.aspx>

VIET NAM: On 12 April 2011, Hanoi's environmental police in collaboration with Thach That district police discovered a dead Leopard Cat *Prionailurus bengalensis* (CITES I) at a local restaurant. Authorities searched the premises and found two other Leopard Cats, two civets and 10 Brush-tailed Porcupines *Atherurus macrourus* that were being held captive. All the animals were confiscated and transferred to Soc Son rescue centre.

<http://thiennhien.org/index.php?page=newsView&id=411>

On 9 May 2011, Hanoi's environmental police found a number of wild animals including a frozen Leopard Cat *Prionailurus bengalensis* (CITES I), a Masked Palm Civet *Paguma larvata* and 10 Coucals *Centropus* spp. The suspect involved admitted purchasing the specimens from an indigenous person in Tuyen Quang and transporting them to Hanoi to sell. A number of the animals have been transferred to the Institute of Environmental Ecology and Biological Resources for preservation, in accordance with the law. The case is being investigated.

On 18 June 2011, Binh Phuoc's environment police, in co-operation with the provincial Forest Protection Department, investigated a restaurant at Bu Gia Map district where they discovered eight Bamboo Rats Rhizomyinae, two caged monitor lizards *Varanus* (CITES II), nine civets, 57 dead mouse deer and 50 kg of frozen Sambar Deer *Cervus unicolor*. The authorities temporarily suspended all trading activities of the restaurant.

Education for Nature-Vietnam (ENV): http://www.envietnam.org/E_News/E_416/E_416.html; http://www.envietnam.org/E_News/E_422/E_422.html

The seizures and prosecutions section was compiled by **Nurul Bariyah Babu**, Trainee Programme Officer, TRAFFIC Southeast Asia

Assessing the Trade in Birds-of-Paradise

Carrie J. Stengel and Kaitlyn-Elizabeth Foley

INTRODUCTION

Birds-of-paradise Paradisaeidae are a diverse family of passerines famed for their dramatic plumes and remarkable courtship behaviour. Forty-six species in 20 genera¹ are endemic primarily to the rainforests of New Guinea, but also the Moluccan Islands (Indonesia) and parts of eastern Australia. Indigenous communities have hunted and traded these birds for centuries and continue to use the feathers in decoration and ceremonial dress today (Anon., 2011a; Anon., 2011c; Frith and Beehler, 1998). Although traded both locally and internationally for over 2000 years, a larger-scale global trade was established at the end of the 19th century. From the early part of the 20th century media reports placed a value on the smuggling of birds-of-paradise feathers at between USD20 000 and USD100 000, for undisclosed quantities (Anon., 1920a; Anon., 1920b; Anon., 1922a; Anon., 1922b), the equivalent of USD500 000 to USD2.5 million at today's prices (Williamson, 2011). Beyond the scope of local trade, today there is a growing international demand for these striking birds as pets and for ornamental decoration.

The aim of this research was to analyse recent trade figures to gain insight into the nature and dynamics of the bird-of-paradise trade and therefore enable anticipation of future trends that may have negative consequences for wild populations.

LEGISLATION

All bird-of-paradise species¹ are listed at the family level in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This requires all internationally traded individuals or derivatives to be reported to the CITES Secretariat by the Parties' Management Authorities; an export permit may be issued only if the specimen was legally obtained and if the export will not be detrimental to the survival of the species.

The species are afforded a high level of protection at the national level within range States. In Papua New Guinea, birds-of-paradise can only be traded with special permits under the *Fauna (Protection and Control) Act* (1966). Under Section 29 of this Act, a person who knowingly buys, sells, offers, consigns for sale, or has a protected species in his possession or control is guilty of an offence. Birds-of-paradise are protected in Indonesia under Article 21 of the *Conservation of Living Resources Act* (1990); as with trade from Papua New Guinea, individuals can only be traded with special permits. In Australia the export of live native fauna for commercial purposes is prohibited.

METHODS

Records held by the UNEP-WCMC CITES trade database of international transactions of birds-of-paradise were analysed. This database includes all import, export and re-export of CITES-listed species as reported by the Parties to CITES (currently 175 member States). The responsibility of verifying permits falls to the importing country if the exporting country is not a Party to CITES.

For the purposes of this analysis, research focused on the import/export of birds-of-paradise individuals from 2000 to 2009. All the terms used in connection with this trade—'bodies', 'live', 'specimens', 'skins' and 'skulls'—were analysed as the import quantities of each of these categories could reasonably be assumed to represent individual birds. The importation of 'carvings', 'garments' and 'feathers' were disregarded as it could not be certain that these figures equated to individual birds; however these instances of trade accounted for less than 10% of records during the study



PETE MORRIS / BIRDQUEST

◀ King-of-Saxony Bird-of-paradise

Pteridophora alberti is endemic to montane forest in New Guinea. To attract a mate, the male bounces up and down on the spot, erecting its black nape feathers into a cape and rotating its long, scalloped, enamel-blue brow plumes.

¹CITES nomenclature has been used in this analysis. It should be noted, however, that there is ongoing debate and reorganization of the Paradisaeidae family. The number of species and genera may therefore vary.

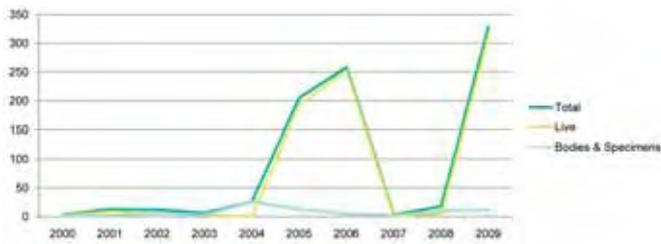


Fig. 1. Volume of bird-of-paradise trade by year in total, for records termed ‘live’, ‘bodies’ and ‘specimens’.

Source: UNEP-WCMC CITES trade database

| Import term | Import quantity | Minimum individuals | Maximum individuals |
|-------------|-----------------|---------------------|---------------------|
| Bodies | 39 | 39 | 39 |
| Live | 787 | 787 | 787 |
| Specimens | 41 | 1 | 41 |
| Skulls | 2 | 2 | 2 |
| Skins | 3 | 1 | 3 |
| Total | | 830 | 872 |

Table 1. Potential volume (minimum and maximum) of birds-of-paradise in trade, 2000–2009.

Source: UNEP-WCMC CITES trade database

| Year | Importer | Quantity | Term | Source | Purpose |
|------|-------------|----------|-----------|--------|------------|
| 2002 | Japan | 4 | Live | Wild | Trade |
| 2004 | USA | 15 | Bodies | Wild | Trade |
| 2005 | USA | 7 | Specimens | Wild | Scientific |
| 2008 | Indonesia | 3 | Skins | Wild | Scientific |
| | New Zealand | 1 | Bodies | Wild | Scientific |
| | USA | 9 | Specimens | Wild | Scientific |
| 2009 | USA | 6 | Specimens | Wild | Scientific |

Table 2. Exports from Papua New Guinea, 2000–2009.

Source: UNEP-WCMC CITES trade database

period. This analysis did not include ‘pre-Convention’ or ‘confiscated’ records. Definitions used in this analysis follow those of CITES. It should be noted that data for 2009 may be incomplete, and data beyond 2009 were not available for analysis because the reporting deadline had not been reached.

RESULTS AND DISCUSSION

A total of 100 records of trade between 2000 and 2009 were analysed. These records represent a maximum of up to 872 individual birds-of-paradise. As the 41 ‘specimens’ could be from a single bird, and a skin and skull may also be from the same bird, these data represent an absolute minimum of 830 individual birds (Table 1).

Based on the maximum number of individual birds, the vast majority of the trade consisted of ‘live’ individuals (90%), followed by ‘specimens’ (5%), ‘bodies’ (4%), ‘skins’ and ‘skulls’ (<1%). From 2000 to 2004, trade was relatively low, numbering fewer than 30 individuals per year. However after 2004 the trade becomes more volatile, with steep increases in 2005, 2006 and 2009 (Fig. 1).

An examination of the primary importers and exporters during these spikes reveal that trade volumes in 2006 and 2009 increased dramatically. In 2006 a commercial shipment of 250 ‘captive-bred’, live Twelve-wired Bird-of-paradise *Seleucidis melanoleucus* was exported by Thailand to the USA. In 2009 a shipment of 300 ‘captive-bred’ live Queen Carola’s Parotia *Parotia carolae* for commercial trade was exported by Bahrain to the United Arab Emirates (UAE). These shipments are of particular interest as neither of the exporting countries are known to have breeding facilities for any bird-of-paradise taxa. Regarding the 2009 shipment, it should be noted that Bahrain is not a signatory to CITES therefore the burden of verifying these claims and permit validity falls to the importing country, in this case the UAE (Table 3).

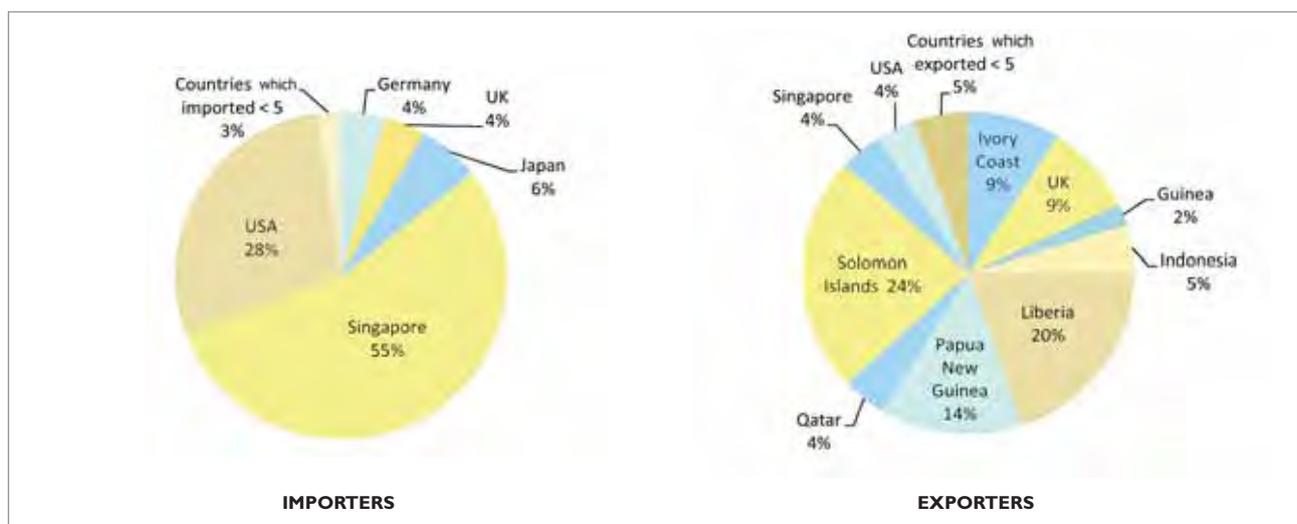


Fig. 2. Importers and exporters of birds-of-paradise 2000–2009 (after removing single large shipments from 2006 and 2009) as reported to the UNEP-WCMC CITES trade database. N=322 individual birds. *countries that exported fewer than five individuals over the study period were considered less significant and therefore grouped together.

| Year | Taxon | Importer | Exporter | Imp. Quantity | Import Term | Import Purpose | Import Source |
|------|----------------------------------------------------------------|----------------------|-----------------|---------------|-------------|----------------|---------------|
| 2005 | Twelve-wired Bird-of-paradise <i>Seleucidis melanoleucus</i> | Singapore | Ivory Coast | 5 | live | trade | captive |
| 2005 | Twelve-wired Bird-of-paradise <i>Seleucidis melanoleucus</i> | Singapore | Guinea | 5 | live | trade | captive |
| 2005 | Greater Bird-of-paradise <i>Paradisaea apoda</i> | Singapore | Ivory Coast | 6 | live | trade | captive |
| 2005 | Emperor Bird-of-paradise <i>Paradisaea guilhelmi</i> | Singapore | Ivory Coast | 6 | live | trade | captive |
| 2005 | Lesser Bird-of-paradise <i>Paradisaea minor</i> | Singapore | Solomon Islands | 8 | live | trade | captive |
| 2005 | Red Bird-of-paradise <i>Paradisaea rubra</i> | Singapore | Solomon Islands | 8 | live | trade | captive |
| 2005 | King Bird-of-paradise <i>Cicinnurus regius</i> | Singapore | Solomon Islands | 10 | live | trade | captive |
| 2005 | King Bird-of-paradise <i>Cicinnurus regius</i> | Singapore | Solomon Islands | 10 | live | trade | captive |
| 2005 | Blue Bird-of-paradise <i>Paradisaea ruddolphi</i> | Singapore | Solomon Islands | 10 | live | trade | captive |
| 2005 | Twelve-wired Bird-of-paradise <i>Seleucidis melanoleucus</i> | Singapore | Solomon Islands | 10 | live | trade | captive |
| 2005 | Red Bird-of-paradise <i>Paradisaea rubra</i> | Singapore | Ivory Coast | 12 | live | trade | captive |
| 2005 | Lesser Bird-of-paradise <i>Paradisaea minor</i> | Japan | Singapore | 12 | live | trade | captive |
| 2005 | Greater Bird-of-paradise <i>Paradisaea apoda</i> | Singapore | Solomon Islands | 20 | live | trade | captive |
| 2005 | Red Bird-of-paradise <i>Paradisaea rubra</i> | Singapore | Liberia | 30 | live | trade | captive |
| 2005 | Lesser Bird-of-paradise <i>Paradisaea minor</i> | Singapore | Liberia | 34 | live | trade | captive |
| 2006 | Twelve-wired Bird-of-paradise <i>Seleucidis melanoleucus</i> | USA | Thailand | 250 | live | trade | captive |
| 2009 | Yellow-breasted Bird-of-paradise <i>Loboparadisaea sericea</i> | USA | Indonesia | 10 | live | trade | wild |
| 2009 | Queen Carolin's Parotia <i>Parotia carolae</i> | United Arab Emirates | Bahrain | 300 | live | trade | captive |

Table 3. Bird-of-paradise trade records from the UNEP-WCMC CITES trade database where the import quantity was five or more individuals.¹ Taxonomy followed by CITES, used herein as this is an analysis of CITES trade data; however, it should be noted there is ongoing debate and reorganization of the Paradisaeidae family. Therefore according to the source, the number of species and genera vary.



PETE MORRIS / BIRDOQUEST

Lesser Bird-of-paradise *Paradisaea minor*

Excluding these two large shipments from the data reveals other significant importers/exporters of birds-of-paradise during this time period (Fig. 2). Singapore then became the dominant importer, followed by the USA. The Solomon Islands was the main exporter, followed closely by Liberia and to a lesser extent by Papua New Guinea, the UK and the Ivory Coast.

All exports from Papua New Guinea (a range State) were sourced from the wild. The majority of these exports went to the USA as specimens, however two commercial trade shipments stand out: one of four live individuals imported by Japan in 2002 and 15 'bodies' imported by the USA in 2004 (Table 2).

Examination of the source codes for all 100 trade records analysed revealed that 'captive-bred' birds have dominated the trade (Fig. 3). This volume of 'captive-bred' birds in trade seems surprising given the known difficulties of breeding these species and that only a few specialized facilities have managed to breed successfully (Todd and Berry, 1980; Searle, 1980; Hundgen *et al.*, 1991; Sheppard, 1995; Jensen and Hammer, 2003).

Birds-of-paradise are renowned for their elaborate breeding rituals. They are *lek* breeders, meaning males display in traditional areas visited by females for copulation only (Frith and Beehler, 1998). Most female birds-of-paradise nest and rear their young (between one and three per clutch) alone and rarely build nests in close proximity to males. In captivity, males have been known to destroy nests when in a female's enclosure and may fight other males, with fatal results if grouped together (Sheppard, 1995). Despite these difficulties, captive breeding efforts have been successful at zoos with high-level management and knowledge of these taxa (Todd and Berry, 1980; Searle, 1980; Hundgen *et al.*, 1991; Jensen and Hammer, 2003). Given the complexities of breeding birds-of-paradise, it seems unlikely that nearly 90% of the individuals in trade were legitimately captive-bred. Breeding captive offspring in the hundreds would be difficult to achieve. Examination of source codes revealed that the majority of trade in 'captive-bred' birds was for commercial purposes (Fig. 4).

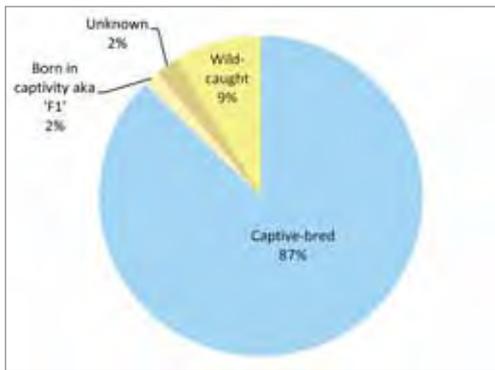


Fig. 3. Reported sources of birds-of-paradise traded from 2000 to 2009 as recorded in the UNEP-WCMC CITES trade database.

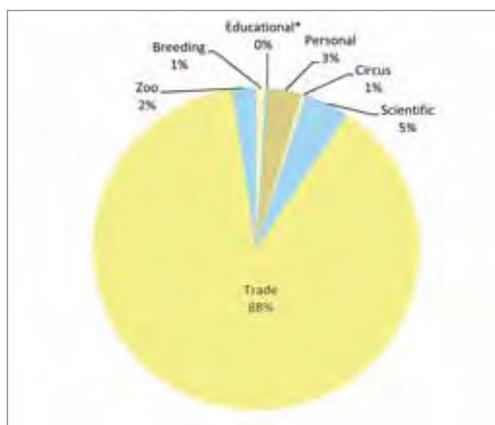


Fig. 4. Percentage of import purpose source codes for bird-of-paradise taxa in trade as recorded by the UNEP-WCMC CITES trade database. *The quantity of birds-of-paradise coded for educational purposes was three out of the maximum estimate of 872, which equals 0.3%.

With the exception of Indonesia (which exported two 'captive-bred' birds in 2002), none of the countries that exported 'captive-bred' birds are range States for the species. Therefore in order to have captive-bred stock, birds must have been imported by these countries for captive breeding. A search for Parties who imported birds-of-paradise for breeding purposes going back to 1975 found only five: Chile, Germany, UK, Hong Kong and Mexico. Of these, only Germany (one live for zoo purposes) and the UK (two specimens for scientific purposes) have exported captive-bred birds-of-paradise since 2000. This trade, from Parties who imported birds for breeding purposes, accounts for 0.4% of the 'captive-bred' trade from 2000 to 2009. Therefore, according to the database records, 99.6% of the 'captive-bred' birds-of-paradise in trade are from countries that have no records of receiving stock since becoming a Party to CITES.

CONCLUSIONS

Records of trade in birds-of-paradise held in the UNEP-WCMC CITES trade database were analysed to assess: 1) if the data provided by the Parties give an accurate representation of trade; 2) if the data provide evidence of trade infractions or inadequate enforcement of CITES and national regulations; 3) important trade volumes; and 4) major anomalies in reporting, especially where trade levels might adversely affect wild populations. Using these measures, it is clear that there are some aspects of the bird-of-paradise trade that warrant further investigation:

- It is not possible to determine whether the data presented by the Parties give an accurate representation of trade in terms of quantity and purpose. However, for the reasons previously discussed, it is highly unlikely that 'captive-bred' birds are being produced in the numbers indicated in the database. The two single, large shipments of 'captive-bred' birds from Thailand and Bahrain are major anomalies. The legitimacy of these large shipments should be investigated. If these 550 'captive-bred' birds were in fact sourced from the wild, it would indicate an abuse of the CITES regulatory process, while such trade levels may have consequences for the conservation of wild populations.
- None of the countries that commercially export birds-of-paradise have records indicating how they received the breeding stock nor do any have known bird-of-paradise breeding facilities.
- Given the protected status of birds-of-paradise in all range States, countries importing birds from these sources should take care to verify the purpose and documentation accompanying any shipments.

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What Seizures Can Tell Us About the Indian Star Tortoise Trade

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INTRODUCTION

The Indian Star Tortoise *Geochelone elegans* is named for the radiating star patterns on its shell. This design effectively camouflages the species in the wild, breaking up its shape when among the tufts of grass in its natural habitat. Although these patterns evolved to give the Indian Star Tortoise protection, this striking feature is now fuelling demand for the species and contributing to its downfall. Furthermore, the tortoise's small size, with a maximum carapace length of about 35 cm, facilitates the smuggling of specimens, often in large numbers. Indian Star Tortoises are found in the pet, meat and ornamental trades, however demand from the exotic pet market predominates.

The Indian Star Tortoise is listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which requires that exports be accompanied by permits to allow for trade to be closely monitored to ensure it does not pose a threat to a species' survival. Indian Star Tortoises are afforded further legal protection from the effects of commercial trade in the species' range States of India, Sri Lanka and Pakistan (Box 1). Despite these regulations, enormous numbers of Indian Star Tortoises continue to be found in international trade.

The relative proportion of captive-bred versus wild-caught individuals in the trade is largely unknown, however Indian Star Tortoises are known to be difficult to breed in captivity and that successful breeding requires a high level of expertise (Shepherd *et al.*, 2004). Research has shown that this species in the wild is highly dependent on the environmental conditions of the area and its breeding season coincides with the monsoon. On average, a single female lays clutches of five eggs, averaging 170 days apart, with a 65% hatchling success (Vyas, 2005). Given these variables it is very unlikely that Indian Star Tortoises are bred in the quantities observed in trade.

Smuggling of this species has become common throughout South-east Asia, at least over the last two decades and often the number of smuggled individuals is in the hundreds, if not thousands. In instances where the illegal smuggling attempts of Indian Star Tortoises have been foiled, the authorities have found suitcases sometimes packed with more than 2000 individuals. In September 2010, Thai police arrested a Bangladeshi man after Customs agents in Bangkok's Suvarnabhumi International Airport discovered a total 1140 Indian Star Tortoises hidden in four suitcases. These specimens were likely destined for the popular Chatuchak weekend market in Bangkok, where this species is often observed openly for sale (Shepherd and Nijman, 2008).



O. CAILLABET / TRAFFIC

The purpose of this study was to use seizures data to highlight the dynamics of the Indian Star Tortoise trade in key countries in South-east Asia, to inform on the availability of seizure data, and to determine what these data can tell us about enforcement action. It was also hoped to gain a better understanding of trade patterns for this species in order that enforcement personnel in export, import and transit countries can be better equipped in their efforts to combat illegal trade.

METHODS

Information on the Indian Star Tortoise trade in South-east Asia was compiled through a desktop study analysing seizures between 2002 and 2010. Data relating to specimens either purportedly destined for, or seized in, Malaysia, Singapore or Thailand—the principal destinations for this trade—were collected from the seizures and prosecutions sections of the *TRAFFIC Bulletin* and the news media. Details selected included: date, location, items, purported origin, destination and references. This analysis also included data from the UNEP-WCMC CITES trade database which records all imports, exports and re-exports of CITES-listed species, in addition to seizures data as reported by the Parties. It should be noted, however, that few Parties include comprehensive seizures data in their CITES annual reports. While provision of such information is recommended, it is not a requirement under the Convention.

All data collected from news media were compared against the seizures data contained in the UNEP-WCMC CITES trade database to point out where any inconsistencies or lack of comprehensive reporting may have occurred.

It should be noted that seizures data are often incomplete and inconsistent (as are media reports). For example, Customs, police and other authorities may have made seizures and not reported them to the CITES Secretariat or

| Year | Seizure Country | Seizure City/State | Seizure Location | Count | Purported Origin | Purported Destination or Transit Point |
|------|-----------------|--------------------|---------------------------------------|-------|------------------|----------------------------------------|
| 2002 | Singapore | Singapore | Changi International Airport | 1092 | | |
| 2002 | Singapore | | | 1308 | | |
| 2002 | Malaysia | Kuala Lumpur | Kuala Lumpur International Airport | 580 | | |
| 2003 | India | Chennai | | 960 | India | Malaysia |
| 2003 | India | Chennai | Chennai International Airport | 305 | India | Malaysia |
| 2003 | India | Chennai | Chennai International Airport | 900 | India | Singapore |
| 2003 | India | Chennai | Chennai International Airport | 320 | India | Singapore |
| 2003 | Malaysia | Kuala Lumpur | | 515 | | |
| 2004 | India | Chennai | Chennai International Airport | 450 | India | Malaysia |
| 2004 | India | Chennai | Chennai International Airport | 600 | | Thailand |
| 2005 | India | Chennai | Chennai International Airport | 989 | India | Malaysia |
| 2005 | India | Chennai | Chennai International Airport | 350 | India | Malaysia |
| 2005 | Malaysia | Kuala Lumpur | Kuala Lumpur International Airport | 200 | | Taiwan |
| 2006 | India | Chennai | Chennai International Airport | 540 | India | Malaysia |
| 2006 | India | Chennai | Chennai International Airport | 1460 | India | Malaysia |
| 2006 | India | Mumbai | Mumbai International Airport | 430 | India | Malaysia |
| 2006 | India | Chennai | Chennai International Airport | 200 | India | Thailand |
| 2006 | India | Bangalore | Karnataka Airport | 447 | India | Malaysia |
| 2006 | Thailand | Bangkok | Don Muang International Airport | 15 | India | |
| 2006 | Sri Lanka | Kerala | Thiruvananthapuram Airport | 482 | Sri Lanka | Thailand |
| 2006 | India | Bangalore | Bangalore Airport | 300 | | |
| 2007 | India | Shivajinagar | Yeshwantpur railway station | 681 | | |
| 2007 | India | Chennai | Chennai International Airport | 600 | India | Malaysia |
| 2007 | India | Bangalore | Bangalore Airport | 200 | | |
| 2007 | India | Chennai | Chennai International Airport | 555 | India | |
| 2007 | India | Chennai | Chennai International Airport | 333 | India | Malaysia |
| 2007 | India | Chennai | Chennai International Airport | 909 | | |
| 2007 | India | Chennai | Chennai International Airport | 320 | | |
| 2007 | India | Mumbai | Mumbai International Airport | 2016 | India | Malaysia |
| 2007 | India | Chennai | Chennai International Airport | 1000 | India | Malaysia |
| 2007 | India | Mumbai | Mumbai International Airport | 365 | India | Thailand |
| 2007 | India | Mumbai | Mumbai International Airport | 610 | India | Thailand |
| 2007 | Malaysia | Kuala Lumpur | Kuala Lumpur International Airport | 255 | | |
| 2007 | Thailand | Bangkok | | 1000 | | |
| 2007 | Thailand | | Prachuap Khiri Khan | 131 | | |
| 2008 | India | Chennai | | 235 | India | Malaysia |
| 2008 | India | Chennai | Chennai International Airport | 950 | | Thailand |
| 2010 | India | New Delhi | Hazrat Shahjhal International Airport | 480 | India | Malaysia |
| 2010 | Singapore | | | 2 | | |
| 2010 | Singapore | | | 3 | | |
| 2010 | Singapore | | | 1 | | |
| 2010 | Thailand | | Suvarnabhumi Int. Airport | 1140 | | |

Table 1. Seizures of Indian Star Tortoises in the study countries between 2002–2010.

Sources: Media reports (*The Straits Times* (Malaysia), 3 August 2003; *The Hindu* (India), 20/27 August 2003; *India Times* (India), 25 August 2007; *The Hindu* (India), 28 October 2007; *The Star* (Malaysia), 25 May 2010; *TRAFFIC Bulletin* (Vols 18/20–23).

| Year | Import Country | Export Country | Country of Origin | Quantity | Trade Purpose | Source |
|------|----------------|----------------|-------------------|----------|----------------------------|--------------------|
| 2003 | USA | Singapore | unknown | 4 | Personal | Confiscated/Seized |
| 2003 | USA | Singapore | unknown | 25 | Commercial Trade | Confiscated/Seized |
| 2004 | Malaysia | India | unknown | 582 | Commercial Trade | Confiscated/Seized |
| 2007 | India | Hong Kong | unknown | 10 | Reintroduction to the wild | Confiscated/Seized |

Table 2. UNEP-WCMC CITES trade database seizure records that involve Malaysia, Singapore and India.

the media (reporting effort). Also, many shipments pass through checkpoints undetected (enforcement effort). Data sourced from the *TRAFFIC Bulletin* comprise a selection of cases only and are not representative of all seizures carried out. Therefore, the seizures data collected for this analysis represent an unknown proportion of the total trade in Indian Star Tortoises. Nevertheless, these data provide insight into the trade dynamics (Foley *et al.*, 2011).

RESULTS AND DISCUSSION

Data from media sources

Data from over 40 seizures involving Indian Star Tortoises were collected from media sources (Table 1). Most seizures took place in international airports, which act as the main gateway for the smuggling of this species. From the data, it appears that the most common method of smuggling is by placing the animals in carry-on and cargo luggage or by concealing them on the person during flights.

From the data collected from the media, between 2002 and 2010, the highest number of confiscated Indian Star Tortoises by a country was 17 505 individuals from a total of 28 seizures in India. India had the highest overall total of seized individuals as well as the highest yearly totals between 2003 and 2008. The largest total number of Indian Star Tortoises seized in a year was 8975 in 2007, 80% of which were seized in India. After India, the greatest number of Indian Star Tortoises seized were 2406 individuals from five seizures in Singapore and 2286 specimens from four seizures in Thailand. The

smallest total number seized by a country was 1550 individuals from four seizures in Malaysia.

This analysis depicts a trade dominated by tortoises being moved primarily from the species' range State of India to Malaysia, Singapore and Thailand. Of the 17 505 Indian Star Tortoises seized in India, 10 595 (60%) were reportedly en route to Malaysia. Significantly fewer individuals were seized in India where the end destination was Thailand (2725) or Singapore (1220).

Several major trends stand out from these data:

- 1). Seizures appear to be dominated by enforcement action in India;
- 2). Shipments seized in India bound for export were primarily destined for, or through, Malaysia, where shipments of this species have seldom been seized.

Data from the UNEP-WCMC CITES trade database

The UNEP-WCMC CITES trade database records 40 seizures from all member countries (a total of 1122 specimens) between 2003 and 2007, the most recent year for which data are available from this source. Of these, only four seizures (totalling 621 individuals) involved India, Malaysia, Singapore or Thailand (Table 2).

Within this same time period, according to news media, 42 seizures totalling 24 229 individuals occurred in India, Sri Lanka, Singapore, Malaysia and Thailand alone. This comparison highlights the lack of seizure data provided to the database by CITES Parties, an issue recently highlighted by Foley *et al.* (2011).

BOX I. NATIONAL LEGISLATION IN INDIAN STAR TORTOISE RANGE STATES.

The Indian Star Tortoise is listed in CITES Appendix II. All three range States—India, Pakistan and Sri Lanka—are party to CITES (since 1976, 1976 and 1979, respectively), however the Indian Star Tortoise is afforded further protection under national legislation in all three countries:

INDIA: The species is protected under the *Wildlife Protection Act 1972*. India has gone further than CITES requirements by banning the export of most native animal species included in Appendices I, II and III for commercial purposes; in addition, any violation of CITES is regarded as a violation of the *Import and Export Policy* and is dealt with under the *Customs Act*.

SRI LANKA: The species is included in the *Fauna and Flora Protection Ordinance of 1938* (Amendment 1993). This Ordinance prohibits the commercial export of live indigenous wild birds, 'beasts', reptiles and derivatives without a permit.

PAKISTAN: The species only occurs naturally in the province of Sind in Pakistan where it is covered under provincial legislation, the *Sind Wildlife Protection Ordinance, 1972*. Pakistan imposed a federal ban on the export of all wild mammals, reptiles, and protected indigenous birds under the *Export Trade Control Order of 1981*.

Many confiscations of Indian Star Tortoises have been accompanied by arrests, however smugglers continue to traffic this species indicating that the penalty for such an offence is not fully implemented or is not enough of a deterrent. For example, in 2002 an individual was fined SGD5000 (the equivalent of USD2795 in 2002) and gaoled for eight weeks for smuggling 1092 tortoises into Singapore. He was also required to pay the Agri-Food and Veterinary Authority (AVA) SGD10 820 (USD6048) for the cost of caring for the tortoises and sending them back to India. At first glance these penalties may seem appropriate, however considering this single consignment was worth SGD54 800 (USD30 630) at the time, the fine was likely not a sufficient deterrent. Under the *Endangered Species (Import and Export) Act*, first offenders can be fined up to SGD5000 (USD4028) and/or gaoled for up to 12 months; subsequent offenders can be fined up to SGD10 000 (USD8056). These fines are a fraction of what a single shipment can be worth.

CONCLUSIONS AND RECOMMENDATIONS

From the data analysed it would appear that India has had the most success in carrying out seizures of Indian Star Tortoises, compared to Malaysia, Thailand and Singapore. Clearly many Indian Star Tortoises are being traded into and throughout South-east Asia. According to these data, Malaysia appears to have been especially significant as a destination or transit country. As the Indian Star Tortoise is listed in CITES Appendix II, all Parties should ensure valid documentation accompanies all imports.

It is clear that the seizures information available in the UNEP-WCMC CITES trade database is incomplete compared to that which has been reported by the media. Although it is not obligatory under the Convention for Parties to submit these data, reporting provides the Parties with an opportunity to share their progress in the application of laws and enforcement efforts. Sharing seizure data would be mutually beneficial for Parties, policy makers and researchers. It would afford Parties an opportunity for recognition of enforcement efforts, give policy makers some insight into where effective enforcement is taking place, and researchers a more representative dataset from which to draw informative conclusions. Parties should take the necessary steps to carry out comprehensive reporting of seizures and to submit these data on time so that the various stakeholders can make better use of the database.

Low fines, a lack of convictions resulting in prison sentences and a high demand for this species appear to be the main reasons behind this continuing illegal trade. Without serious deterrents, the trade is likely to continue. TRAFFIC encourages the authorities in India, Malaysia, Singapore and Thailand to continue their vigilance and for Customs officials to intensify their scrutiny of shipments at entry and exit points; more severe penalties should be imposed on individuals found trading in protected wildlife.



THE SMALL SIZE OF THE INDIAN STAR TORTOISE (ITS CARAPACE MEASURES A MAXIMUM OF 30 CM) FACILITATES THE SMUGGLING AND TRADE IN THIS SPECIES. SOME SHIPMENTS HAVE COMPRISED UPWARDS OF 2000 SPECIMENS. THESE INDIVIDUALS (PICTURED) WERE ON SALE AT JAKARTA'S PET MARKET IN DECEMBER 2010.

The general public, especially those interested in keeping such pets, should be informed by governments, conservation NGOs and the media of the illegality and conservation implications of purchasing Indian Star Tortoises. Public awareness materials such as posters and brochures should be distributed at key locations such as pet shops, pet fairs and schools. Local zoos have the opportunity to play a major role in educating the public, and are urged to be involved in public awareness campaigns concerning the trade of Indian Star Tortoises.

Finally, continuing research by NGOs and researchers is critical in order to monitor and inform on trade dynamics. In addition to monitoring seizure activity, other aspects of trade dynamics should be analysed including import/export records, open market availability and particularly online trade, as the internet is an increasingly dominant market place for trade in exotic tortoises and other animals.

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Illegal Ivory Sales in Egypt

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INTRODUCTION

Craftsmen in Egypt have worked ivory for thousands of years, perhaps longer than in any other country. Egypt is one of the largest illegal markets for elephant ivory in Africa. Tusks are smuggled in, mostly through Sudan, and sold to ivory workshops in Cairo. Since the CITES international ivory trade ban was introduced in 1990, Egyptian law has prohibited all imports and exports as well as the display and sales of all ivory, including antiques, but this is not enforced. The Egyptian Wildlife Service, which is the government agency that implements Egypt's wildlife laws, has not carried out a successful raid on retail outlets selling ivory for many years (R. Toma, Director, Egyptian Wildlife Service, pers. comm., March 2011).

In 1998, the first detailed survey of Egypt's ivory industry revealed that Cairo retailers were offering the third-largest number of ivory items for sale in Africa, surpassed only by Abidjan, Côte d'Ivoire, and Harare, Zimbabwe. Luxor and Aswan also had many ivory products, exceeding most other African cities (Martin, 1999; Martin, 2000a; Martin, 2000b; Martin and Stiles, 2000). In 2005, TRAFFIC carried out a second survey, which included the tourist resorts of Hurgada and Sharm el-Sheikh/Na'ma Bay, but encouragingly the number of ivory items found on display in Cairo, Luxor and Aswan had declined by about half, to 10 611, compared with 21 460 in 1998 (Martin and Milliken, 2005; Martin and Milliken, 2006).

Reports that large amounts of ivory continued to be offered for sale in Egypt—particularly in Cairo—led to TRAFFIC funding another ivory survey in March and April 2011 in Cairo and Luxor, the two most significant ivory centres. This was a critical period for the country as it followed the political uprising in January and February when the government was overthrown by the military. The number of foreign tourists dropped by around 75% in March, but all the hotels were open as were at least 90% of the tourist shops. The old market—called the Khan al-Khalili—remains Cairo's main centre for the manufacture and retail sale of ivory products and almost all outlets and workshops were open. Business was extremely poor, however, with many shops claiming that they had sold almost nothing since late January. This was advantageous for the purposes of the survey because craftsmen and vendors were happy to spend time talking with the authors, and with little fear of prosecution, allowed them to take photographs.

METHODS

The methodology used to count the ivory items followed that of earlier ivory surveys (Martin, 2000a; Martin and Stiles, 2000). One author would distract the

vendor by asking about prices and photographing items, while the other would count the pieces by type; only those items on display for sale were counted. If a shop drawer was open on arrival and ivory items could be seen, they were counted, but if drawers were opened especially for the authors or concealed ivory was shown to them, these items were not recorded, in line with the methodology used in previous surveys and thus allowing for comparison of the different data sets. The authors visited workshops and shops that had been investigated previously and surveyed any new establishments found to be selling ivory.

The craftsmen and shopkeepers were asked about origins and prices of tusks, number of workshops and ivory craftsmen, ages of ivory items, nationality of customers, turnover and stocks, and vendors' views on the ivory trade. The age of the ivory items—whether they were old (i.e. made before 1990), recent (i.e. made between 1990 and 2005), or were newer—was estimated based on style and appearance. The items were priced using the official rate of Egyptian pounds EGP6 to USD1, compared to EGP5.79 to USD1 in 2005 (there was no significant black market rate despite being a politically and economically unstable period).

A meeting was arranged in March with two senior government officials who were asked about recent ivory seizures and shop inspections, and for their ideas on how to improve law enforcement.

LEGISLATION AND ENFORCEMENT

Details have been given elsewhere on the history of wildlife legislation in Egypt (Martin and Milliken, 2005). In summary, Egypt's *Ministerial Decree No. 1150* of 1999 states that "it is a violation to possess, to offer or display for sale, to import, export, or introduce from the sea any specimen of a species listed in Appendix I, II and III of CITES" (Martin and Milliken, 2005). Thus, the display and offering for sale of all ivory (tusks and worked objects), old or new, is illegal without a special permit. No such permit has been issued (R. Toma, Director, Egyptian Wildlife Service, pers. comm., March 2011).

Implementation of Egypt's ivory trade ban has been very weak. According to ETIS, between 2000 and 2002 the Egyptian authorities carried out 37 ivory seizures, comprising a total of 2564 pieces of raw and semi-worked ivory and 278 ivory items in various locations in the country (Martin and Milliken, 2005). From 2003 to 2009, ETIS recorded only one ivory seizure (Milliken *et al.*, 2009). During the authors' meeting with the senior government officials, it was confirmed that since 2009, only two seizures had occurred, both at Cairo airport: one, in January 2010, involved a tusk weighing seven kilogrammes that an Egyptian was trying to export, and another tusk was seized from a Chinese national in January 2011. The officials further confirmed that there had been no confiscations of ivory items from retail outlets since 2003, a fact backed up by vendors in Cairo and Luxor. According to the government officials, the authorities inspected the Khan al-Khalili market only

once in 2010, although inspections are supposed to be carried out every three months. Only legal camel bone items were reportedly found and the government officials believe the ivory had been hidden, possibly suggesting that market surveillance is not spontaneous. One of the officials lamented the difficulty in inspecting for ivory as government officials must be accompanied by the police. Since the police have not been in full control since January 2011, no inspections had been carried out since the beginning of the year. Crime has also reportedly increased considerably since the revolution (Anon., 2011a). The authors noted that vendors in many jewellery shops had removed their gold items to prevent theft.

RESULTS

Origins and prices of elephant tusks: In 2010, most tusks came from Sudan, but Côte d'Ivoire, Kenya and Tanzania were also mentioned as sources of ivory by ivory vendors in Cairo. This does not mean all tusks originated from these countries as most of the ivory from Sudan would have originated in Central Africa. Traders, usually Sudanese, bring their ivory directly to workshops and retail outlets and sell according to the weight and quality of the tusks. Interviews with seven buyers of tusks—mostly small specimens—paid USD276/kg on average in 2010 for tusks of one–two kilogrammes, with a price range of USD200–416/kg. Larger tusks of around eight kilogrammes fetched USD367/kg, while damaged or tiny tusks, tusk pieces, or hollow parts were selling for USD150/kg on average.

Ivory workshops: Egyptian ivory carving, compared with that in Asia and southern Africa, is fairly poor. Many of the figurines are crude, with little attention to detail, although some of the newer items are being carved with greater care and skill, probably owing to the greater expense and rarity of the material. As well as figurines, craftsmen today are mainly producing utilitarian items such as rosaries, walking sticks, name seals and chopsticks that are made in bulk—when tusks are available—with electric drills. Jewellery, mostly beaded necklaces and bangles, continue to be popular items.

The authors visited five workshops and heard of two others in and around the Khan al-Khalili. These had a total of at least 23 craftsmen working ivory. It is unlikely there are many more. Several craftsmen were seen working ivory in the day, while others worked at night. They also carve camel bone, ebony and other wood, turquoise, amber, buffalo horn and cow horn. One carver was making complete ivory walking sticks, each taking about a week to produce; another was making walking stick handles, and others, name seals and beads. The authors were shown a tusk that had been cut in two which was to be quartered lengthways and sliced every two centimetres to make four cubes producing four large rosary beads. The craftsmen do not receive a salary but are paid for what they produce on a weekly basis. They earn EGP600–2000

(USD100–333) a month depending on their skill and output. The average pay is USD200 a month.

In Luxor almost no new ivory items are being made. Only one vendor at a recently opened hotel shop claimed his new ivory items were made by craftsmen in the Luxor area, and two others admitted ivory could be made or repaired in Luxor on special request.

Retail ivory outlets and ivory items seen: The number of retail outlets in Cairo seen selling ivory was 71 in early 2011, comprising 32 gift/souvenir shops, 13 jewellery shops, 12 antique shops, eight rosary shops, three ivory speciality shops, and three shops selling miscellaneous items (Table 1). These outlets were in the Khan al-Khalili (58%), near the pyramids and a few around Tahrir Square and the Coptic church (18%), in several luxury hotels (14%), and in the Zamalek area (10%). In total, 8343 ivory items were counted on display for sale (Table 1). The most common items seen in Cairo were animal figurines (20%), human figurines (16%), beads for necklaces and rosaries (11%), scarab beetles (10%), rosaries (8%), pendants (8%), necklaces (5%) and bangles (5%) (Table 2).

In Luxor, the number of retail outlets with ivory objects was 23, comprising 18 jewellery shops, four souvenir shops and one gold/silver outlet (Table 1). Most of these outlets—61%—were along the main streets of central Luxor, as well as 26% in the hotels and 13% in the tourist souks. Some 918 ivory items were recorded (Table 1). The majority were human figurines (34%), animal figurines (13%), pendants (9%) and obelisks (9%) (Table 2).

Only a few antique ivory items were found in some of the antique shops of Cairo, and a small number of outlets offered African-carved ivory human figurines which were generally considered less popular. Most objects had been carved in Egypt between 1990 and 2005, after which time increased security at the border with Sudan made it more difficult for items to be smuggled into the country. Many vendors claimed to be selling off their last stocks and not replacing them. Some, however, were doing well, selling new ivory objects, especially jewellery, rosaries and figurines. In Cairo, the authors counted an estimated 3000 (out of 8343) ivory items in 25 shops that were believed to be post-2005 (18 shops sold only newer items and seven had both old and newer objects for sale). In Luxor, 36 (out of 918) newer items were counted in two shops only. While some displays appeared almost identical to what was observed six years earlier (with certain items being regularly replaced and others not selling), other shops had got rid of their ivory entirely (or would bring it out only on request). Some shops had closed down, but others had opened, often selling the newest ivory. Vendors sometimes revealed examples from stock (new and old) concealed in drawers which, in keeping with the methodology of previous surveys, the authors did not record.

The number of outlets with ivory and the number of ivory items displayed overall had declined very little from 2005 to 2011, especially in Cairo.

| CAIRO Location | No. of outlets with ivory | No. of ivory items | LUXOR Location | No. of outlets with ivory | No. of ivory items |
|-------------------|------------------------------|-----------------------|-------------------|------------------------------|-----------------------|
| Khan al-Khalili | 41 | 4849 | Hotels | 6 | 145 |
| Hotels | 10 | 269 | Souks | 3 | 33 |
| Zamalek | 7 | 116 | Main streets | 14 | 740 |
| Elsewhere | 13 | 3109 | | | |
| TOTAL | 71 | 8343 | TOTAL | 23 | 918 |

Table 1. Number of retail outlets and ivory items seen on display for sale in Cairo and Luxor, March–April 2011.

| CAIRO Item | Percentage | LUXOR Item | Percentage |
|-----------------|------------|-----------------|------------|
| Animal figurine | 20 | Human figurine | 34 |
| Human figurine | 16 | Animal figurine | 13 |
| Bead | 11 | Pendant | 12 |
| Scarab beetle | 10 | Obelisk | 9 |
| Rosary | 8 | Scarab beetle | 8 |
| Pendant | 8 | Necklace | 7 |
| Necklace | 5 | Bangle | 3 |
| Bangle | 5 | Cartouche | 3 |
| Ear-rings, pair | 3 | Bead | 2 |
| Ring | 2 | Misc. | 9 |
| Misc. | 13 | | |

Table 2. Ivory items seen for retail sale in Cairo and Luxor, March–April 2011.

Prices, sales and buyers of ivory items: Prices of items varied according to the quality of carving and the place of sale. Prices also apparently depended on what the vendors believed the customer would be willing to spend. Few pieces bore price tags, and nearly everything was negotiable. Vendors were desperate to sell due to the tourist slump, offering discounts of at least 20%. Tourists accompanied by a guide pay more in order to cover his commission. Ivory salesmen also said there was no problem in bringing ivory out of Egypt, with some offering to write a receipt indicating that a piece was an antique or made of camel bone.

Cairo: In Cairo, a 10-cm animal figurine cost from USD58–408 (Table 3). Prices were lowest in the Khan al-Khalili and highest in the luxury tourist hotels. The cheapest items—at USD21—were thin plain rings and small cartouche pendants (the latter bearing a person's hieroglyphic name). Large, heavy figures were over USD1000 as they require the biggest tusks and detailed carving, while the most expensive item was a one-metre barge for USD15 000.

Although many vendors were unwilling to discuss their turnover, some gave a sense of transactions, which varied considerably. Vendors at the shop with the most ivory for sale said that in a good month they sold up to 100 objects (out of about 1500 on display), with larger items taking over five years to sell, whilst jewellery and small figurines sold more quickly. They said that the items on display were the last of their stocks. Another shop selling off old 10-cm ivory obelisks (that the vendor claimed he had not replaced) had five left of 12 surveyed

six years earlier, still priced at USD29. A large bazaar that had between 60 and 80 figurines when visited 10 years earlier, had six on display during this survey. Some such outlets displayed dusty ivory figurines bought in the 1990s, but turnover was very slow and the items too expensive now to replace, vendors said. A few shops in the Khan al-Khalili were selling old tusk carvings and large figures. The vendors remembered traders from West and Central Africa carrying heavy tusks to their shops to sell to their grandfathers some 40 years' earlier. Items carved from these tusks were still on sale. Another vendor in a Cairo souvenir shop admitted that wooden figurines with ivory heads and hands had been brought to her shop by Sudanese traders about 10 years earlier, and some were still on display.

In 2011, the main ivory buyers were Chinese, Spanish, Italians and Americans, in that order. Shop vendors selling ivory rosaries and walking sticks said their main buyers were Egyptians, Gulf Arabs and other Muslims. In general, shopkeepers said that over half the ivory was now bought by the Chinese, both expatriates and tourists. In late March 2011, one vendor said that a Chinese couple had come into his shop the previous day and spent USD4167 on a few horse figurines and human busts. Another said a group of Chinese would sometimes spend USD50 000 on ivory in one session of bargaining. According to one hotel shop vendor, the Chinese come with packs of dollars and will easily spend USD25 000 at one time in his shop. In another outlet visited twice, Chinese individuals were seen on both occasions bargaining for fairly new thick ivory bangles and beaded necklaces from drawers behind the counter. Ivory

| Item | Size (cm) | Price range (USD) | Average price (USD) |
|----------------------------------------|-----------------------|-------------------|---------------------|
| JEWELLERY | | | |
| Bangle | 0.5 | 17–133 | 79 |
| | 1 | 33–417 | 123 |
| | 2–2.5 | 133–500 | 254 |
| Ear-rings, pair | | 30–58 | 46 |
| Necklaces, smal/medium/ large beads | 25–250/62–450/142–567 | | 92/153/348 |
| Pendant | 4 | 10–58 | 28 |
| Ring, plain | 0.3 | 4–30 | 21 |
| FIGURINES | | | |
| Animal | 5 | 29–58 | 46 |
| | 10 | 58–408 | 160 |
| | 15 | 108–2000 | 558 |
| Human | 5 | 45–135 | 75 |
| | 10 | 33–850 | 299 |
| | 15 | 133–667 | 252 |
| | 20 | 150–1000 | 495 |
| | 30 | 333–1500 | 597 |
| TUSKS , carved | 20 | 117–2000 | 814 |
| | 30 | 183–2500 | 1220 |
| MISC. | | | |
| Chess set | 40 x 40 | 617–2500 | 1223 |
| Chopsticks, pair | 20 | 33–67 | 44 |
| Cigarette holder | 10 | 25–29 | 28 |
| Fly whisk | | 333–367 | 350 |
| Name seal | 2 x 6 | 33–83 | 53 |
| Obelisk | 10 | 10–42 | 29 |
| Paper knife | 10–30 | 16–667 | 150 |
| Rosary, small, medium, large | | 27–700 | 179 |
| Scarab beetle | 2.5 | 8–33 | 29 |
| Walking stick, all ivory | 100 | 500–2000 | 822 |
| Walking stick, ivory handle | | 108–250 | 188 |

Table 3. Retail prices for ivory items seen in Cairo, March–April 2011.

| Item | Size (cm) | Price range (USD) | Average price (USD) |
|------------------------------|-----------|-------------------|---------------------|
| JEWELLERY | | | |
| Necklace, small/medium beads | | 33–43/50–67 | 37/58 |
| Ring, plain | 0.3 | 5 | 5 |
| FIGURINES | | | |
| Animal | 10 | 58 | 58 |
| Human | 5 | 3–150 | 55 |
| | 10 | 33–417 | 108 |
| | 20 | 60–333 | 168 |
| MISC. | | | |
| Obelisk | 10 | 8–25 | 16 |
| Paper knife | 10–30 | 60–67 | 63 |
| Scarab beetle | 2.5 | 10–30 | 20 |

Table 4. Retail prices for ivory items seen in Luxor, March 2011.

| Year | No. retail outlets displaying ivory | No. ivory items | Average no. ivory items per outlet |
|--------------|-------------------------------------|-----------------|------------------------------------|
| CAIRO | | | |
| 1998 | 88 | 11 627 | 132 |
| 2005 | 79 | 8930 | 113 |
| 2011 | 71 | 8343 | 118 |
| LUXOR | | | |
| 1998 | 33 | 6445 | 195 |
| 2005 | 25 | 1308 | 52 |
| 2011 | 23 | 918 | 40 |

Table 5. Comparison of ivory surveys in Cairo and Luxor for 1998, 2005 and 2011.

vendors sometimes insert Chinese business cards from customers into their glass cabinets. A variety of ivory items are purchased by Chinese, but they prefer newer items and do not visit antique shops. At the Citadel, a young Chinese man was wearing a new ivory bead bracelet that he had just bought for EGP100 (USD17). No other nationalities were seen wishing to buy ivory objects.

One vendor with a large souvenir shop in the Khan al-Khalili which displayed about 200 ivory items, said that in January 2011, before the revolution, turnover (gross sales) of his produce on a good day was EGP3000–4000 (USD500–667), but never less than EGP1000 a day. In March, due to the collapse in tourism, he sold items worth USD167 for the entire month.

Luxor: In Luxor, prices for ivory items are lower than in Cairo as items sell less well. Nearly all vendors said they did not wish to replace their ivory. The cheapest items, as in Cairo, were rings and small cartouches but these sold for USD5 compared with USD21 in Cairo. Paper knives were selling for USD63 in Luxor compared with USD150 in Cairo (Tables 3/4). Some vendors were nervous about the authors' interest in ivory, pretending items were made of camel bone or were old items. Another vendor said there had been a police raid earlier in the decade and he had since cleared his ivory items away into drawers, displaying only a few samples for interested buyers (to whom he would then show some of the hidden items). The principal buyers in Luxor remain the Spanish, Italians and Americans who mainly purchase small items.

Ivory substitutes: The main substitute for ivory in Egypt is camel bone. Egyptians are a major consumer of camel meat so there are plenty of bones available from slaughterhouses. Tibia bones are the strongest and preferred. They are bleached and then carved into items such as figurines. The workmanship is generally poorer than that demonstrated for ivory carving. Camel bone can have tiny holes and feels less polished than ivory, is lighter, and has an odour, especially when burned (a practice used to assist in the identification of materials). Small items are harder to tell apart from ivory. One way to distinguish bone from ivory is by price. A camel bone paper knife can sell for only USD2. Generally bone and ivory objects are kept on separate shelves in a shop. Some dishonest vendors or those



ABOVE FROM TOP:
IVORY POMMELS FOR WALKING STICKS BEING CARVED IN CAIRO;
AN IVORY CARVER IN CAIRO MAKING IVORY WALKING STICKS;
A LARGE DISPLAY OF IVORY ITEMS IN CAIRO;
ROWS OF IVORY ELEPHANT FIGURINES ON SALE
TO TOURISTS IN CAIRO.

PHOTOGRAPHS: LUCY VIGNE

unable to distinguish between bone and ivory, mix the two, but this is unusual. Other less common animal substitute materials are cow and buffalo bones, antlers and horns, the latter two being easy to distinguish from ivory due to the shape and colour. No mammoth ivory items were seen. Some vendors were sometimes unable to distinguish between moonstone and ivory scarab beetles. A synthetic substitute, which vendors called either polyester-resin or ivory, is used for necklaces and rosaries, usually inlaid with stone and silver. This substance has fine lines running through it that can be mistaken for elephant ivory, but no cross-hatching that is unique to ivory. For comparison, in a shop with similar looking small inlaid rosaries, one of polyester-resin was USD35, one of camel bone was USD30, whilst the ivory rosary was priced at USD100.

Vendors' views on the ivory trade: Most Cairo vendors were confident that their ivory sales would continue, presumably as there is no pressure on them to stop the trade. Only a couple of ivory vendors in Cairo were wary of photographs being taken of their stock in case of any repercussions, they said. Luxor vendors were more nervous of questions and of their ivory items being photographed, and said they were gradually pulling out of ivory sales, citing the fact that it is illegal and that customers for ivory are few. Vendors in Cairo were optimistic that the Chinese, especially, would continue to buy new ivory items, such as bangles, pendants, necklaces, and heavier, newer figurines such as busts and hippopotamuses. Sales of older and cruder thin figurines of Egyptian pharaohs, gods and goddesses sell less well, and many vendors in souvenir shops said their sometimes dusty displays were the last of their stocks and that they would not be replacing them. Instead, artisans and vendors said they are producing larger numbers of name seals for Chinese buyers, and also walking sticks, walking stick handles and rosaries, especially for the Egyptians and Gulf Arabs, and were confident this market would continue. With foreign tourist numbers to Egypt increasing, numbers of wealthy Egyptians rising, and an increase in Chinese expatriates as well as tourists, there is a large and growing clientele for the ivory carvers.

Trends in the ivory trade since 2005: Raw tusks are still almost exclusively sold in Cairo, which is the ivory carving centre of the country. The wholesale price in 2005 was USD173/kg for a one- to two-kilogrammes piece, while in 2011 this price had risen to USD276/kg.

Comparing the 2005 survey results with those of 2011, the total number of ivory items seen in the Cairo retail outlets decreased by only 7% (Table 5), while the number of ivory items actually increased in the Khan al-Khalili from 3977 to 4849. Prices in Cairo rose two-and-a-half-fold between 2005 and 2011. Walking sticks and chess sets, however, remained roughly the same price compared with six years earlier.

In Luxor, a much larger decrease in the number of ivory objects on display for retail sale was noted—a drop of 31% from early 2005 to early 2011. The exception was hotels, where the number of shops rose from two with only four ivory items in 2005 to 10 with 269 items in 2011. This is partly due to the increase of new hotels.

While Spanish, Italians and Americans were the main buyers in 2005, more Egyptians and Gulf Arabs are now buying ivory rosaries and walking sticks, but the Chinese have become the principal buyers, reportedly purchasing over half of all worked ivory sold. In 2001 there were only 110 expatriate Chinese in Egypt, but in 2007 the number had increased to an estimated 6000–10 000 (Sautman and Hairong, 2007) and perhaps 60 000–100 000 in 2010 (Anon., 2010). In early 2011, there were 1022 Chinese companies in Egypt and the number continues to increase (Yang, 2011). The number of Chinese tourists also rose to 106 000 in 2010 (Anon., 2011b), a 37% increase from 2009, according to Egypt's Minister of Tourism, who told the Chinese Ambassador to Egypt in March 2011 that he hoped the figure would reach a million (Shawqi, 2011).

DISCUSSION AND CONCLUSIONS

No ivory items—old or new—can be sold legally in Egypt without a special permit, and none has ever been issued. Egypt remains one of Africa's largest markets for illegal ivory items. From 1998 to 2005 there was an overall reduction of 43% in the combined number of ivory objects surveyed for retail sale in Cairo and Luxor, the main markets. In comparison, from 2005 to 2011, this figure declined by just 10%. In this survey, the authors counted 8343 ivory items openly for sale in Cairo and 918 in Luxor. Of these, 3000 were estimated to be items that had been produced in the last five years, the rest mostly carved in Egypt in the 1990s and early 2000s. The relative strength of Egypt's ivory retail market is due to the almost total lack of law enforcement over the last six years, combined with the entrance into the market of a major new consumer, the Chinese buyer, due to a fast-growing number of Chinese residents and tourists to the country. Until the January 2011 political uprising, the Egyptian tourist industry had been expanding: in 2010, approximately 13 million foreign visitors came to Egypt, spending about USD13 billion, and the principal buyers of ivory were Chinese.

The Egyptian Wildlife Service is mandated to prevent illegal wildlife products from coming into and out of the country, and from being displayed in shops. There have been few ivory seizures at the borders since 2005, while inspections of retail outlets have failed to find ivory. In May 2010, the Egyptian Management Authority for CITES held seven training courses involving wildlife officers, Customs, police officers and tourist workers, to identify products from endangered species, and produced posters to help officials to identify elephant tusks. It is time these newly learned skills were employed to confiscate raw and worked ivory, in order to bring this flagrant trade to an end. Ivory continues to be openly carved and displayed without any prosecution ensuing. Raids and subsequent confiscations of ivory items have led to a significant decline in retail sales of ivory in Ethiopia and Ghana (Milledge and Abdi, 2005; Martin and Vigne, 2010; Martin, 2010). Similar action must be carried out in Egypt if the open sale of ivory in that country is to be stopped.

RECOMMENDATIONS

1. The Egyptian Government must urgently implement CITES Resolution Conf. 10.10 (Rev. CoP15), especially with regard to three main considerations:
 - a) publicizing the illegal status of elephant ivory in Egypt by displaying official leaflets in souvenir shops, hotels and airports, explaining in Arabic, Chinese and English that it is illegal to import, export or buy raw or worked ivory, and stipulating the severe penalties imposed for such offences;
 - b) carrying out effective raids on retail outlets selling ivory on a regular basis, especially in the Khan al-Khalili, and prosecuting and penalizing offenders; and

- c) improving efforts to seize both worked and raw ivory at international borders, especially at Cairo's international airport.
2. It is imperative that tour operators and embassies, along with Chinese companies, take responsibility for foreign tourists and expatriates in Egypt—especially Chinese nationals—by instructing them via public awareness materials that it is illegal to purchase ivory.
3. International tour operators must urgently exert pressure on the Egyptian Government to enforce the law banning the trade in ivory by discouraging tourists to the country until such time that ivory is no longer being offered for sale.

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TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

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