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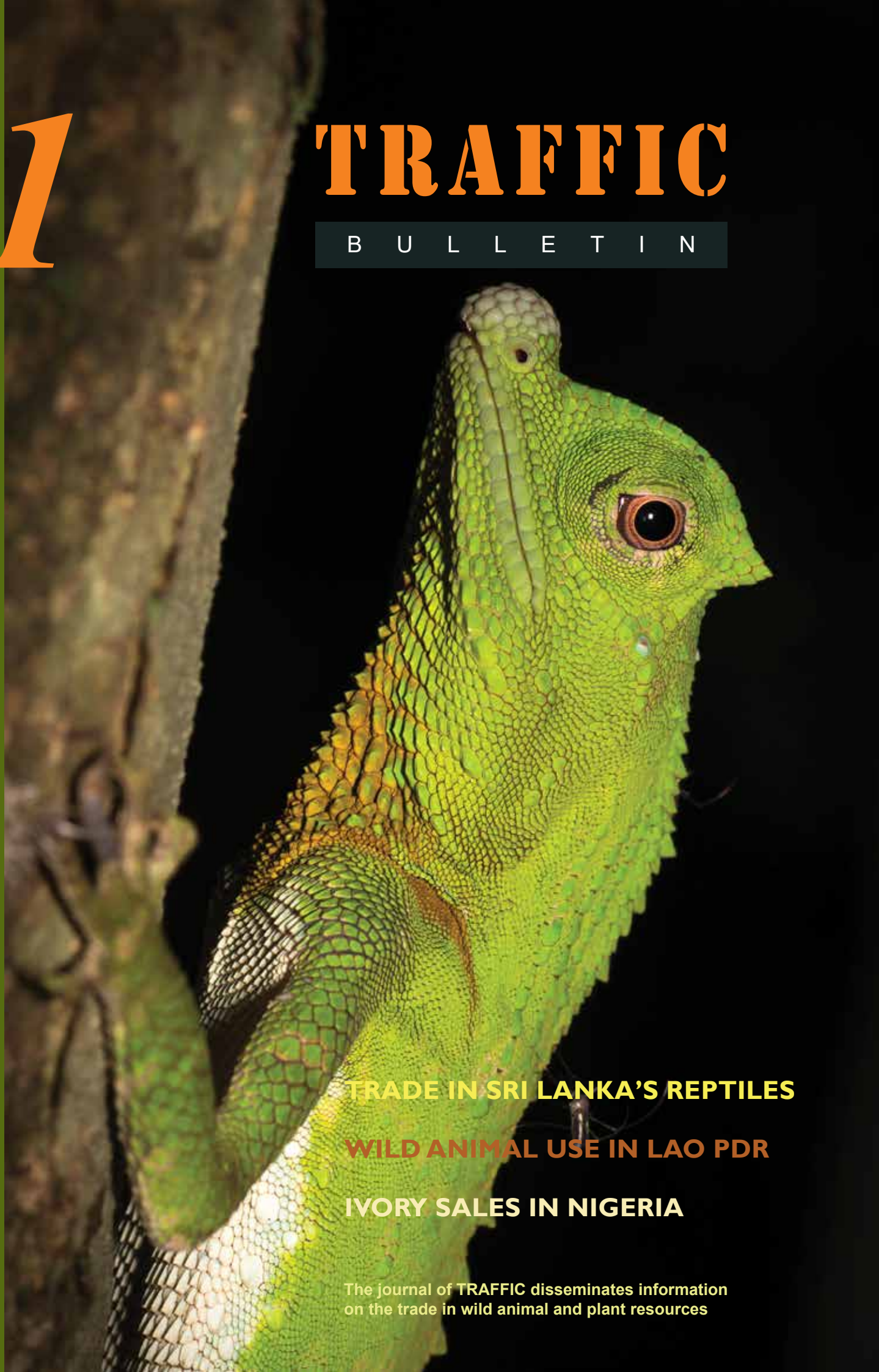

TRADE IN SRI LANKA'S REPTILES

WILD ANIMAL USE IN LAO PDR

IVORY SALES IN NIGERIA

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

APRIL 2019

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.

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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; moreover, this use provides vital income to millions of people.

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.

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.

TRAFFIC's reports and advice provide a technical basis for the establishment of effective conservation policies and programmes to ensure that trade in wildlife is maintained within sustainable levels and conducted according to national and international laws and agreements. The journal of TRAFFIC, *TRAFFIC Bulletin*, is the only publication 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 effect change and improve awareness.

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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; 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).

The *TRAFFIC Bulletin* is a publication of TRAFFIC, a leading non-governmental organisation working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

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

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Saiga Antelope *Saiga tatarica* horn and shavings
(© TRAFFIC)
Jiaogulan *Gynostemma pentaphyllum* products,
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EDITORIAL

Philip Ball's book "Critical Mass"[1] posited interesting theories around a "physics of society", arguing that mass social movements arise when individuals behave in a manner akin to particles in physics. The book was clever in its conceptual origin and thought provoking in its analysis yet challenging to interpret as a source of inspiration for the design of approaches to mobilise the masses. Nevertheless, it went on to win the 2005 Royal Society Award for Books in Science, and some 15 years later the principles explored are partially exemplified through current social narratives around the Climate Strikes and Extinction Rebellion (ER) protests. Insights such as this from behavioural science are increasingly recognised as relevant to wildlife trade.

Recent media coverage celebrating Nobel-nominated Greta Thunberg's powers of persuasion sits in sharp relief when juxtaposed against public interest in e.g. the fire at Paris's Notre Dame cathedral, or the release of Marvel's *Avengers: Endgame*[2]. Using finance as a proxy for this interest, during the five days following each incident, USD1bn was raised to rebuild the Paris landmark and USD1.2bn taken in sales at the global box office. Why do headlines heralding "climate catastrophe"; "insect Armageddon"; "more plastic in the oceans than fish by 2050"; "the sixth mass extinction"; "more than 60% of the Earth's vertebrate species already lost"; and, the "impending collapse of life's natural systems" not provoke a similar public response? What inspires such interest and action requires scrutiny, as those seeking to promote the sustainable consumption of flora and fauna and other environmental causes have to "compete" for attention within this context and reality.

Conservation headlines and campaign slogans can be depressing, numbing and disabling—is this pushing people further away from solutions, rather than inspiring them to move from simply voicing their values, towards actually making transformative changes in lifestyle choice and consumption habits? To answer such questions conservationists are increasingly exploring behavioural science.

Campaigns invoking "people power" use social mobilisation strategies within a Social and Behavioural Change Communications (SBCC[3]) framework. Tactics thus tend towards those affecting the community and environmental realms of the Socio-Ecological Model (SEM[4]). Both SBCC and SEM crucially also demonstrate the importance of behaviour change communications, which aim to shift knowledge at interpersonal and individual levels, as well as shape attitudes, skills and practices.

Such topics formed part of the discussion at the 2nd International Conference on Behaviour Change in Conservation, convened by TRAFFIC in Bangkok, November 2018. Around 100 members of the SBCC Community of Practice[5], representing 21 countries and 60 organisations, considered common social science concepts such as the Value-Action Gap and Catalyst and Gateway Behaviours. Participants examined the disconnect between what people say and do, as well as the entry-points from relatively benign buyer behaviour to actions which would be more damaging to species in trade. Case studies were shared and lines of research enquiry identified for future investigation.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is also increasing its emphasis on consumer behaviour change, but not in isolation from other complementary efforts. TRAFFIC's review of current practice, pursuant to Decision 17.48, revealed that CITES Parties most requested support was for expertise in relation to behavioural change.

In the preamble for TRAFFIC's final "Consultant's Report" (CITES CoP18 Working Document 4[6]), the CITES Secretariat noted: "*It is critical that Parties understand the difference between well-targeted demand reduction strategies through behaviour change, and mass campaigns to raise awareness of the plight of endangered species and the various negative impacts of poaching and wildlife trafficking. Although both approaches have their merits, the former is more imperative in order to address the urgent needs.*" The preparation of guidance in line with this will be considered by the Parties during the 18th meeting of the Conference of the Parties to CITES (recently postponed due to the tragic events in Sri Lanka).

Additional examples of increasing emphasis on mobilising behavioural science for conservation action abound. In the past two months alone, the UK government convened the first meeting of its "Global Consortium of [Demand Reduction] Specialists" in Ha Noi, Viet Nam, orienting ca. 50 participants around subjects such as behavioural economics and environmental education. The Interdisciplinary Centre for Conservation Science subsequently convened an Expert Workshop in Oxford, UK, focused on "Taking Behaviour Change to Scale in Conservation". Two weeks later, the Behavioural Insights Team and Rare published an 84-page report on "Behaviour Change for Nature"[7]. Meanwhile the most recent edition of "Social Marketing Quarterly", published in March, focused entirely on biodiversity conservation[8].

Each of these represent promise for nature conservation. But more must be done to apply behavioural insight and inspire people. Those familiar with the Marvel storyline will know that it features a loss of 50% of all life in the universe. While fiction of course, we are increasingly at risk of this becoming a reality unless "people power" can be converted from angry voices to action. TRAFFIC will continue to champion the best of behavioural science evidence and practice accordingly.

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[1] *Ball, P. (2004). Critical Mass. How One Thing Leads to Another. Arrow Books;* [2] *https://www.bbc.co.uk/news/entertainment-arts-48084977;* [3] *https://c-change program.org/focus-areas/capacity-strengthening/sbcc-modules;* [4] *Bronfenbrenner, U. (1979). The Ecology of Human Development. Experiments by Nature and Design. Harvard University Press;* [5] *www.changewildlifeconsumers.org;* [6] *https://cites.org/sites/default/files/eng/cop/18/inf/E-CoP18-Inf-004.pdf;* [7] *https://www.bi.team/publications/behavior-change-for-nature-a-behavioral-science-toolkit-for-practitioners/;* [8] *https://journals.sagepub.com/toc/smqa/25/1*

TWIX for the Southern African Region

PROMOTING INFORMATION SHARING

Report by Cynthia Ratsimbazafy and Markus Bürgener

TWIX (Trade in Wildlife Information eXchange) is an online tool developed to facilitate the exchange of information and promote co-operation between law enforcement agencies responsible for combating illegal wildlife trade and implementing CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora). To date, regional TWIX systems have been established in Europe and Central Africa.

The TWIX system consists of two main components: a centralised restricted access website which holds records on national, regional and international wildlife seizures; and a mailing list which allows enforcement officials to communicate, seek assistance and alert one another to relevant enforcement actions. The TWIX website also contains various resources such as identification guides, training materials and useful directories, including listings for animal rescue centres for seized specimens.

The mandate for the establishment of a TWIX system for the Southern African region emanates from the Southern African Development Community (SADC[1]) Law Enforcement and Anti-Poaching (LEAP[2]) Strategy that aims to reduce the level of poaching and illegal trade in wild fauna and flora and enhance law enforcement capacity in the SADC region by 2021, focusing on:

- enhancement of legislation and judicial processes;
- minimisation of wildlife crime and illegal trade;
- improvement and strengthening of field protection;
- integration of people and nature in natural resources management; and
- ensuring sustainable trade and use of natural resources.

The LEAP strategy was approved by Ministers responsible for Environment and Natural Resources of the Member States of SADC in 2015 and endorsed by the Joint Committee of Ministers of Environment and Natural Resources and of the Organ on Politics, Defence and Security Cooperation in 2017. The LEAP strategy explicitly identifies the establishment of the TWIX system as one of its key deliverables.

Development of the SADC-TWIX system for the region is based on experience drawn from the highly successful EU-TWIX[3] that has been operational since 2005 and connects more than a thousand enforcement officials dealing with CITES issues in 38 European countries (28 EU Member States and 10 neighbouring countries). The EU-TWIX database maintains information on almost 60,000 wildlife seizures.

The TWIX for the Southern African region shares its development with the AFRICA-TWIX[4] platform, which connects more than 100 officials from six countries of the COMIFAC (Commission des Forêts d'Afrique Centrale) region, namely Cameroon, Central African Republic, Chad[5], Republic of the Congo, Democratic Republic of the Congo, and Gabon. AFRICA-TWIX has facilitated several enforcement actions in Central Africa—for example, seven suspected wildlife traffickers from local freight services and Customs were arrested following information sharing and collaboration via AFRICA-TWIX concerning a seizure of 28 elephant tusks in Bangkok in late 2017; and collaborative investigations by INTERPOL and Congolese authorities have been triggered by information exchanged on AFRICA-TWIX.

Once operational, TWIX for the Southern African region will facilitate information exchange as well as strengthen inter-agency and cross-border co-operation amongst law enforcement agencies in the region in fighting wildlife crime, and in turn enhance the success of law enforcement efforts.

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▲ Seizure of 370 tortoises (Radiated Tortoises *Astrochelys radiata* and Ploughshare Tortoises *A. yniphora*), en route to Ha Noi, Viet Nam, via Nairobi, Kenya, and intercepted by Customs at Ivato International Airport, Madagascar, on 26 June 2018.

[1]The Southern African Development Community (SADC) is a Regional Economic Community comprising 16 Member States; Angola, Botswana, Comoros, Democratic Republic of the Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia and Zimbabwe. Established in 1992, SADC is committed to Regional Integration and poverty eradication within Southern Africa through economic development and ensuring peace and security. Source: https://www.sadc.int/about-sadc/; [2]https://dc.sourceafrica.net/documents/26991-SADC-Law-Enforcement-and-Anti-Poaching-Strategy.html; [3]EU-TWIX: https://www.eu-twix.org/; [4]AFRICA-TWIX: https://www.africa-twix.org/; [5]https://www.traffic.org/news/chad-joins-africa-twix/

Participants at the SADC-TWIX meeting, Johannesburg, in April 2019. ▼

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February 2018, during which time three phases of SADC-Member State visits, or scoping missions, have been conducted. During each visit, the establishment of a TWIX system was discussed with relevant agencies and each law enforcement agency was invited to nominate a TWIX focal point and users.

These country visits resulted in 70 agencies from 10 countries expressing their interest and commitment in joining a TWIX system. They include agencies from: Angola, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, and Zambia. Furthermore, agencies of the Seychelles have also shown interest in joining a TWIX system.

The growth in understanding of the TWIX system and appreciation of the support that it can provide to

AND CO-OPERATION TO REDUCE ILLEGAL WILDLIFE TRADE IN SADC REGION

Recent years have seen numerous international commitments made between African nations concerning wildlife conservation and sustainable wildlife trade. The implementation of TWIX is in part a response to such regional and international recommendations and declarations and an effort to support signatories to fulfil their obligations and assist in their implementation. Declarations and Commitments that the Southern African TWIX is helping to support include:

- London Conference on the Illegal Wildlife Trade Declaration[6];
- The Arusha Declaration on Regional Conservation and Combating Wildlife/Environmental Crime[7];
- Kasane Statement on the Illegal Wildlife Trade[8];
- African Strategy on Combating Illegal Exploitation and Illegal Trade in Wild Fauna and Flora in Africa[9];
- The SADC Law Enforcement and Anti-Poaching (LEAP) Strategy and the action plan for its implementation.

Officials eligible to participate include, amongst others, those working within Customs, CITES Management Authorities, wildlife and forestry services, police, prosecutors, criminal justice departments and international organisations such as the CITES Secretariat, United Nations Office on Drugs and Crime (UNODC), INTERPOL, World Customs Organization (WCO), the Lusaka Task Force Agreement (LATF) and the WCO Regional Intelligence Liaison Offices (RILO).

The process of setting up a TWIX system for the Southern African region has been under way since front-line enforcement officials was further strengthened through a TWIX workshop organised under the auspices of the SADC Secretariat in September 2018, which was attended by 14 of the 16 SADC Member States. The meeting recommended that TRAFFIC should develop and manage TWIX on behalf of law enforcement agencies of the SADC Member States and through a parallel process, a Memorandum of Understanding (MoU) between the SADC Secretariat and TRAFFIC should be developed to formalise the collaboration and working arrangement on TWIX implementation.

Ahead of the launch of the system in early May 2019, close to 400 future TWIX users have been nominated by various law enforcement agencies (including Customs, police, wildlife and fisheries services and the judiciary).

The implementation of TWIX in the Southern African region received financial support from Germany's Partnership against Poaching and Illegal Wildlife Trade in Africa and Asia, implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), and WWF France.

Acknowledgements

The SADC Secretariat and the GIZ Office in Gaborone are thanked for supporting TRAFFIC's work in rolling out TWIX for the SADC region. The authors also thank TRAFFIC colleagues Magdalena Norwisz, Vinciane Sacré, Colomban McDowall, Marcus Cornthwaite, Tom Osborn and Roland Melisch for reviewing earlier versions of this manuscript and providing constructive comments to improve it.

[6]*https://cites.org/sites/default/files/eng/news/sundry/2014/london-wildlife-conference-declaration-140213.pdf;*
[7]*https://www.internationalconservation.org/publications/Arusha_Declaration_Regional_Conservation_Combating_Wildlife_Environmental_Crime.pdf;* [8]*https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/417231/kasane-statement-150325.pdf;* [9]*https://au.int/sites/default/files/documents/33796-doc-african_strategy_strategy_africaine_au.pdf*

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Safeguarding Asian Songbirds:

Inaugural meeting of the IUCN Asian Songbird Trade Specialist Group

Report by Kanitha Krishnasamy and Serene C.L. Chng

SERENE CHNG / TRAFFIC

Never has the issue of songbird keeping as a conservation risk to many species been more prominent than it is today. The volume of birds trapped for this widespread trade throughout South-east Asia and beyond has reached unsustainable levels in many instances. Work by TRAFFIC and others in recent years has raised the profile of this issue, highlighting the need for urgent and critical action before more species extinctions occur at localised or national levels. TRAFFIC's surveys in key bird markets in Indonesia, Malaysia, Thailand, Singapore and Viet Nam alone have recorded more than 86,000 birds for sale, from no fewer than 230 South-east Asian species (Fig. 1). These figures, recorded during snapshot surveys at notable markets in these countries between 2014 and 2018, reflect but a fraction of the trade (TRAFFIC, 2019).

RAGHUNATH THIRUMALAISAMY / CC.ORG/LICENSES/BY-NC/2.0/

▲▲**Top: Sumatran Laughingthrush *Garrulax bicolor*, one of the priority species identified by the ASTSG for conservation action.** ▲**Common Tailorbird *Orthotomus sutorius*.**

Over a 26-day period from November to December 2018, more than 12,000 birds were confiscated by Indonesia's authorities from pinch points between Sumatra and Java (TRAFFIC, 2019). This cross-over point between the provinces of Lampung in Sumatra and Banten in Java is a hotspot for the movement of people and commodities between the two Indonesian islands, commonly also used to transport animals. A vast majority of the birds seized here—reportedly destined for Javanese bird markets—were tailorbirds *Orthotomus* spp. and prinias *Prinia* spp., a group of birds not conventionally targeted in huge volumes to feed the songbird trade, but in recent times more popular in bird singing competitions, with their own competition class (Om Kicau, 2012). This is indicative of a constantly evolving trade, one that is increasingly involving a wider range of species that may be put at risk as a result.

In response to this concern, experts from around the world formed the IUCN Asian Songbird Trade Specialist Group (ASTSG) in 2017, a unique specialist group of the IUCN Species Survival Commission (IUCN/SSC) dedicated to tackle conservation challenges stemming from illegal and unsustainable trade. The ASTSG is a product of the first-ever Asian Songbird Trade Crisis Summit that was organised jointly by the Wildlife Reserves Singapore, TRAFFIC and Chikananga Wildlife Centre in 2015 (see *TRAFFIC Bulletin* 27(2):47).

Four years on, over 50 experts from around the world gathered at the Jurong Bird Park in Singapore from 30 March to 1 April 2019 to assess what progress has been made and what more needs to be done. Specifically, experts took stock and charted a clear path in line with the *Conservation Strategy for the Southeast Asian Songbirds in Trade*, to pursue a co-ordinated approach to tackling this issue which is inherently linked to social, cultural and economic aspects. Four main themes were initially identified in the Strategy to reduce threats and safeguard Asian songbird populations in the wild (Lee *et al*., 2016). These have since developed into five thematic sub-groups, covering 1) field research; 2) genetic research; 3) trade, legislation and enforcement; 4) conservation, breeding and reintroductions; and 5) community engagement, communication and education. While discussions were organised around these themes, the Group (in reference to the ASTSG) discussed ongoing initiatives and action points that cut across multiple topics and appointed more focused task forces to take these forward.

In 2016, 28 Asian bird species were identified as priorities for action to reverse their decline in the wild. These included the Greater Green Leafbird *Chloropsis sonnerati* and the White-rumped Shama *Copsychus malabaricus*, both categorised as Least Concern by the IUCN Red List, and trapped and traded in the thousands

(Chng *et al.,* 2017; Leupen *et al.,* in press). Just three years later, the status of at least another 16 species of birds was deliberated on as a rise in trapping to feed a relentless market has placed them at risk. They included the Bar-winged Prinia *Prinia familiaria*, one of several prinia species popularly used in singing competitions (Om Kicau, 2012). The recent meeting also recognised that while the songbird trade is particularly prevalent in Indonesia, trade targeting Asian species in other markets—both inside and outside Asia—also deserves attention. In response to a document submitted by the USA and Sri Lanka on "songbird trade and conservation management" ahead of the 18th meeting of the Conference of the Parties to CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) (CITES, 2019), discussions on the international commercial trade in songbirds also took place at the meeting.

TRAFFIC continues to play a strong role in the ASTSG, building a more comprehensive programme to reinforce and expand efforts to protect songbirds, using evidence from its market surveys to influence legal, policy and regulatory improvements to curtail illegal and unsustainable trade. Such work has also contributed to recent IUCN Red List updates, including the uplisting of the Straw-headed Bulbul *Pycnonotus zeylanicus* to Critically Endangered to reflect its perilous position following evidence of extirpations throughout much of the species's range (BirdLife, 2018). TRAFFIC's investigations into the songbird trade will also look at the involvement of other countries in South-east Asia and at transactions taking place on online platforms, as well as the links between cross-border trade within the region.

TRAFFIC has also started looking into the role of consumer markets and demand, largely based on its research in Viet Nam in 2016, which found that the vast majority of the 8,047 birds recorded for sale in Ho Chi Minh City and Ha Noi were of species not covered by legislation (Eaton *et al.*, 2017). This means that trapping and trade was taking place without any checks in place, and could already be at unsustainable levels, with dire consequences particularly as many of the species recorded are already threatened by trade and observed in other South-east Asian markets. With this in mind, TRAFFIC initiated a consumer research exercise to understand the profile and motivations behind songbird keepers and their behaviour. This pioneering effort in Viet Nam will be used to inform conservation actions involving social behaviour change for songbird trade, based on a more accurate determination of motivations and species targeted for trade.

The task ahead is challenging. Evidence is mounting that many species are being pushed to the brink of extinction from illegal and unsustainable trade. It is critical that governments in the region step up efforts to shut down illegal trade or markets and raise awareness to prevent species extinctions via behaviour change communications to reduce consumer demand. Key sites from which thousands of birds are being illegally trapped need to be better protected, and knowledge improved on the status of populations in the wild, with assurance colonies secured to ensure species are not lost forever. The ASTSG hopes to bring together more partners, including a more diverse donor base, that will stimulate efforts to find solutions to reverse the decline of songbird populations and stop our forests falling silent forever.

Acknowledgements

The authors thank Wildlife Reserves Singapore and an anonymous donor for generously and continuously supporting TRAFFIC's programme of work to address the illegal and unsustainable songbird trade in South-east Asia since 2012.

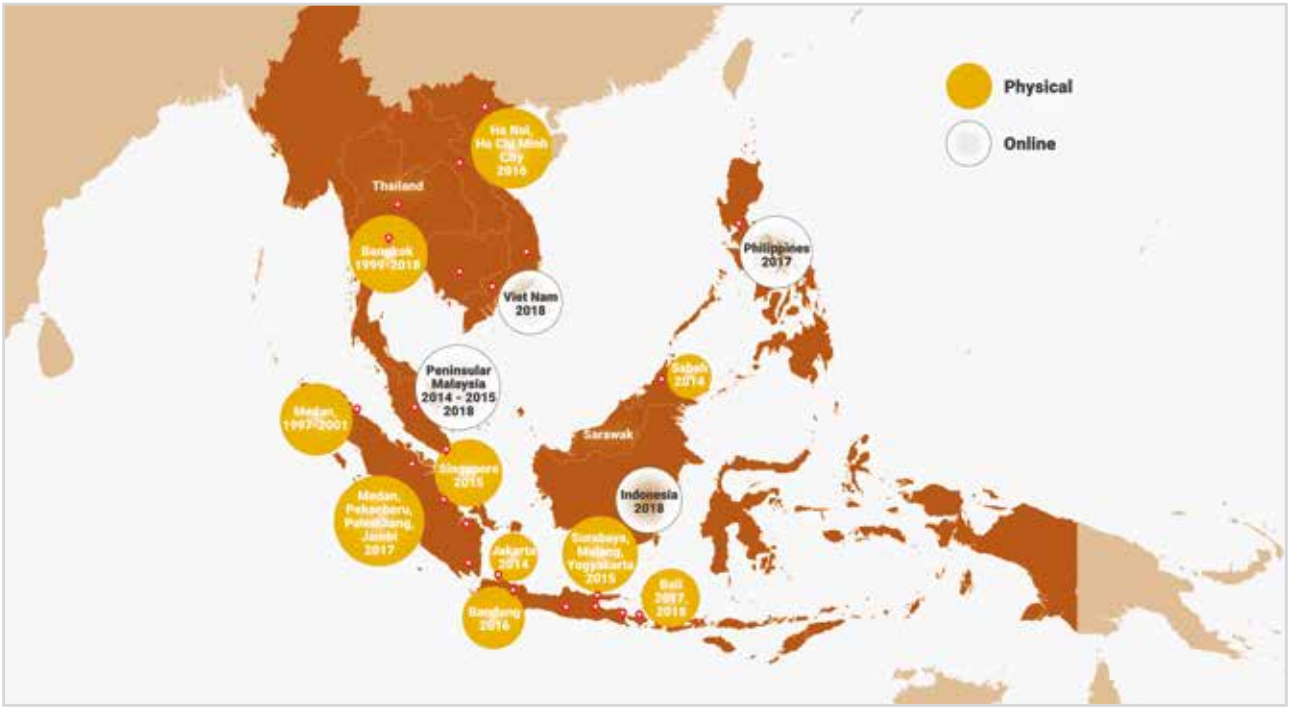

Fig. 1. TRAFFIC's South-east Asian live bird trade surveys from 1997–2018.

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CORRECTION

In the article *In the Market for Extinction: birds for sale at selected outlets in Sumatra*, that featured in *TRAFFIC Bulletin* 30(1):15–22, all bird species with allocated harvest quotas for 2016 were permitted to be exported (although authorities at a quota meeting in 2017 agreed verbally that the harvest quota should only be for domestic trade (Irham, M. *in litt.* December 2017)).

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UPDATES FROM SHARM EL-SHEIKH:

CBD CoP14 and 2nd CPW Wildlife Forum

Report by Roland Melisch, Taye Teferi, Sarah Ferguson and Salwa Elhalawani

For those interested in policy matters related to the use of and trade in wild flora and fauna, two important meetings took place in November 2018 in Sharm El-Sheikh, Egypt:

14th Convention on Biological Diversity Conference of the Parties (CBD CoP14)

Attended by approximately 3,800 participants, the "UN Biodiversity Conference" comprising the 14th Convention on Biological Diversity (CBD) Conference of the Parties (CoP)—the Convention's governing body—and several other concurrent meetings, were held during 13–29 November 2018 in Sharm El-Sheikh.

In relation to wildlife trade, the most relevant new development stemming from the CoP can be found in **Decision 14/7** on "**Sustainable Wildlife Management**". The Decision welcomes the voluntary guidance for a sustainable wild meat sector, recognising that it does not necessarily apply to all Parties, with the aim of promoting the sustainability of supply at the source, managing demand along the entire value chain, and creating the enabling conditions for legal, sustainable management of terrestrial wild meat in tropical and subtropical habitats. The Decision requests the Executive Secretary of the CBD and members of the Collaborate Partnership on Sustainable Wildlife Management (CPW), subject to the availability of resources, to:

- identify areas that may require complementary guidance to be developed and to explore ways to apply such guidance to other geographical areas, other species and other uses;
- promote and facilitate the use of monitoring tools and databases, through an exchange of best practices and lessons learned;

- evaluate multi-disciplinary approaches to combining better knowledge of the use of and trade in wildlife, taking into account the knowledge, innovations and practices of Indigenous Peoples and Local Communities (IPLCs) and livelihood alternatives for the customary sustainable use of wildlife.

Very relevant for wild fauna and flora used and traded for health purposes, in **Decision 14/4** on "**Health and Biodiversity**" the CoP encourages Parties and others to provide effective incentives to "mainstream" biodiversity in the health sector. The Decision further invites the World Health Organization (WHO) to support the implementation of this Decision and collaborate with other members of the Inter-agency Liaison Group on Biodiversity and Health.

Guidance on trade and movement of managed pollinators is included in the "Updated Plan of Action 2018–2030 for the International Initiative on the Conservation and Sustainable Use of Pollinators" which is part of **Decision 14/6** on "**Conservation and Sustainable Use of Pollinators**".

In **Decision 14/11** on "**Invasive Alien Species**", CoP adopted "supplementary voluntary guidance for avoiding unintentional introductions of invasive alien species associated with trade in live organisms" as an Annex I to Decision 14/11, and decided as per Annex II, subject to the availability of resources, the establishment and the Terms of Reference of an Ad Hoc Technical Expert Group on Invasive Alien Species.

Decision 14/12 specifies the "**Rutzolijirisaxik Voluntary Guidelines for the Repatriation of Traditional Knowledge Relevant for the Conservation and Sustainable Use of Biological Diversity**" covering areas of good practice and action on governance, management and co-operation—to repatriate traditional knowledge aimed at providing advice to institutions and entities where traditional knowledge and related information may be held, stored or housed and which serve IPLCs and/or hold materials with IPLC content or perspectives. These may include but are not limited to: government departments, international organisations, private sector, museums, herbaria, botanical and zoological gardens, databases, registers, gene-banks, libraries, archives, private collections and information services.

Parties adopted a "**Comprehensive and Participatory Process for the Preparation of the Post-2020 Global Biodiversity Framework**" (**Decision 14/35)** and decided to establish an open-ended intersessional working group to support the framework's preparation. Regarding the potential role of traditional knowledge, customary sustainable use, and the contribution of the collective actions of IPLCs post-2020, the CoP requests the respective Working Group on Article 8(j)—a key article of the CBD—to provide recommendations concerning such contributions at its eleventh meeting.

As related to plants, in **Decision 14/35** on "**Global Biodiversity Outlook**," delegates also agreed to include an assessment of the implementation of the Global Strategy for Plant Conservation (GSPC). Note that the GSPC includes three targets pertaining to use and trade under its "Objective III: Plant diversity is used in a sustainable and equitable manner" (CBD, 2019).

An African Ministerial Summit held on 13 November at the same premises focused on ecosystem restoration but agreed, *inter alia*, to convene future African Ministerial Summits with an emphasis on other priority issues relating to the conservation and sustainable use of biological diversity across the African continent (CBD, 2018a).

All Decisions taken by CBD's CoP14 Plenary can be found on the website of the CBD (2018b).

2nd Wildlife Forum of the Collaborative Partnership on Sustainable Wildlife Management (CPW)

Partners to the CPW and the African Union Commission co-convened the second CPW Wildlife Forum with the overarching theme "*Sustainable Use for Conservation and Livelihoods*." This was a parallel event to CBD CoP14 (CBD, 2018c) that took place on 21 November. Over 170 participants at the venue and another 500 participants online from across the globe representing governmental, inter-governmental and non-governmental organisations, IPLCs, youth, practitioners, and businesses participated actively throughout the deliberations, discussing their shared experiences and seeking creative solutions on issues related to four sessions, "I: People and Wildlife: Health and Security", "II: Sharing Wild Meat: Resolving Conflicts between Subsistence and Commercial Uses", "III: From Sites in Africa to Shelves in Asia: Solutions to Unsustainable Wildlife Use and Illegal Trade" and "IV: Wildlife and People in 2050: A Vision for Sustainable Wildlife Management". The outcomes of the Forum were compiled as "Key Messages" and brought to the attention of the Government of Egypt, as the CBD CoP14 Presidency and host country, and were delivered to CoP14 delegates by the CPW Secretariat during a Plenary Session on 25 November 2019. The outcomes of the Forum have also been accepted as a CBD CoP14 Information Document (CBD, 2018d). Discussions from the Forum will further feed into the priorities on sustainable wildlife management of the Post-2020 Biodiversity Framework and the "Thematic Assessment of Sustainable Use of Wild Species" of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019).

At the Wildlife Forum, the Center for International Forestry Research (CIFOR) and the CBD Secretariat launched the report "Towards a sustainable, participatory and inclusive wild meat sector" (CBD, 2018e, and Coad *et al*., 2019) which informed CBD Parties and fed into their aforementioned Decision 14/7 on "Sustainable Wildlife Management." In addition, the CPW Secretariat launched a CPW animation video (FAO, 2018), addressing key issues on sustainable wildlife management and the role the CPW can have in tackling them.

The Government of Hungary offered to host a Wildlife Forum in 2021. A more detailed account of the deliberations and discussions can be found under the Wildlife Forum Bulletin of the International Institute for Sustainable Development (IISD, 2018).

Note: The CPW was established in March 2013 with TRAFFIC as a co-founding partner and developed into a voluntary partnership of 14 international organisations with substantive mandates and programmes to promote the sustainable use and conservation of wildlife resources (Rodina, 2018; CPW, 2019).

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▲ **Former Executive Secretary of CBD, Hamdallah Zedan (left), discussing Egypt's roadmap at CBD CoP14 with Leah Wanambwa of African Union Commission (centre) and Salwa Elhalawani, TRAFFIC.**

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► **Delegates discussing key messages stemming from the 2nd CPW Wildlife Forum.**

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The presence of protected reptiles from Sri Lanka in international commercial trade

Report by Jordi Janssen and Anslem de Silva

Reptiles are sourced in great volumes for both the legal and illegal markets and for a variety of purposes, including for food, leather, as pets and for use in traditional medicines (Böhm *et al*., 2013; Nijman *et al*., 2012). Demand is increasingly leading to the overexploitation of many reptile species (O'Brien *et al.,* 2003; Rosser and Mainka, 2002), which may result in local extinctions (Janssen and Indenbaum, in press; Stuart *et al*., 2006) and, ultimately, the extinction of entire taxa (Meiri *et al*., 2018). The sourcing of wild reptiles can be especially harmful when coinciding with other frequently occurring conservation threats such as habitat loss (Cushman, 2006; Maxwell *et al*., 2016).

Sri Lanka is a humid tropical island, with many natural ecosystems comprising forests, grasslands, sand dunes, wetlands and mangroves, which support a high diversity of wildlife including 219 reptile species, a large percentage of which are endemic to the country (Altherr, 2014; de Silva and Ukuwela, 2017); collection and trade in all reptile species is prohibited, with a few exceptions.

During the past few years there is evidence of organised animal trafficking in Sri Lanka. Unpublished data provided by the Customs Department and other law enforcement officials, including the navy, police and air force, indicate that at least 3,130 Star Tortoises *Geochelone elegans* were seized between 2015 and 2017 alone (Malsinghe *et al*., 2017; de Silva pers. obs., 2017). Further, some 124 Black-spotted Turtles *Geoclemys hamiltonii* (CITES Appendix I-listed, and non-native to Sri Lanka) being smuggled through Sri Lanka were confiscated by law enforcement agencies in 2015.

There are growing concerns that considerable numbers of reptiles are being smuggled through or out of the country annually (Altherr, 2014; D'Cruze *et al*., 2018). Sri Lankan reptiles have previously been recorded on the European market. In 2010, German pet traders visited Sri Lanka to discuss export options for Sri Lankan reptiles (ZZF, 2010), which were strongly opposed by local stakeholders, and in 2012, six foreigners were caught trying to smuggle Sri Lankan endemic reptiles and amphibians (Rodrigo, 2012). Sri Lankan reptiles are now regularly offered for sale on classified reptile websites (Altherr, 2014), yet very little is known about the scale or extent of this trade.

This study aims to provide evidence of Sri Lankan species currently found in international trade to assess the threat level trade might pose to individual species and, in so doing, evaluate the need for the listing of certain species in the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

▲ Sri Lanka Green Pit Viper *Trimeresurus trigonocephalus*

Methods

The authors conducted online monitoring of Facebook (three groups) and classified reptile websites such as Terraristik.com between September 2016 and 31 October 2018. Offers were collected in a random and opportunistic manner using keyword searches (Terraristik.com) and notifications (Facebook) relating to species and genus names. Reptile offers were collected on groups that offered rare and uncommon species, as well as those that mentioned Sri Lankan endemic species or species for which Sri Lanka was the reported origin. For each offer, each species was treated as a separate record. Moreover, if prices differed this was treated as a separate record. Price data were converted to EUR using XE Currency Converter and converted to single animals (prices for a pair were split in two). Price data were multiplied by the total number of animals reported for that species. Records for Pondichéry Fan-throated Lizard *Sitana ponticeriana* and Bahir's Fan-throated Lizard *S. bahira* were merged after Amarasinghe *et al.,* (2015).

Import and export data for the USA were obtained from the US Fish and Wildlife Service (USFWS) Law Enforcement Management Information System (LEMIS) through the *Freedom of Information Act*, covering the period 2000–2015. The authors looked specifically at the data from the USA as that country is considered the main importer of live reptiles (Robinson *et al.,* 2015) and keeps detailed information on all species imported, both CITES- and non-CITES-listed (Schlaepfer *et al.,* 2005). The LEMIS database specifies the content of each shipment either with a species code, a genus code or a more general code (e.g. NONR = non-CITES reptile), with the latter more common in larger shipments (Schlaepfer *et al.,* 2005). The authors requested data specifically labelled as commercial trade (purpose code "T") of Sri Lankan reptile species using genus names, yet excluded the Star Tortoise. This species is widespread and heavily targeted by smugglers in India (D'Cruze *et al*., 2015) and it is not possible morphologically to distinguish the Indian animals from those from Sri Lanka. Star Tortoises found during the online survey were included if it was specifically mentioned that they originated from Sri Lanka.

Altherr (2014) highlighted the role of Germany and other European countries with regard to the trade in Sri Lankan reptiles, and in particular the role of the Terraristika reptile fair in Hamm, Germany (http://www.terraristikahamm.de/). The authors therefore analysed the data to see if there was a correlation between the quantities offered for sale in each advertisement and the number of days since, or towards, the quarterly reptile trade fair in Hamm. For this, a Kendall-Rank Correlation test using R Studio Version 1.1.456 (RStudio Team, 2015) was used.

Legislation

Wildlife in Sri Lanka is protected under the *Seventh Amendment to the Fauna and Flora Protection Ordinance* (FFPO) of 1993. In accordance with Section 30 of the FFPO, all reptiles, except five venomous snake species, are protected and collection is prohibited. Export of all reptiles or parts/products of reptiles is prohibited without a permit under Section 40 of the FPPO and only allowed for scientific purposes and for exchanges with zoos. This also includes captive breeding and the ranching of reptiles (Altherr, 2014).

Results

In total, 130 offers were documented for a minimum of 477 individuals of 18 reptile species for international commercial trade. The classified reptile website Terraristik.com was the main source of Sri Lankan reptiles, with 402 of 477 reptiles (16 species) observed on this platform. Facebook posts accounted for 75 animals of 11 species.

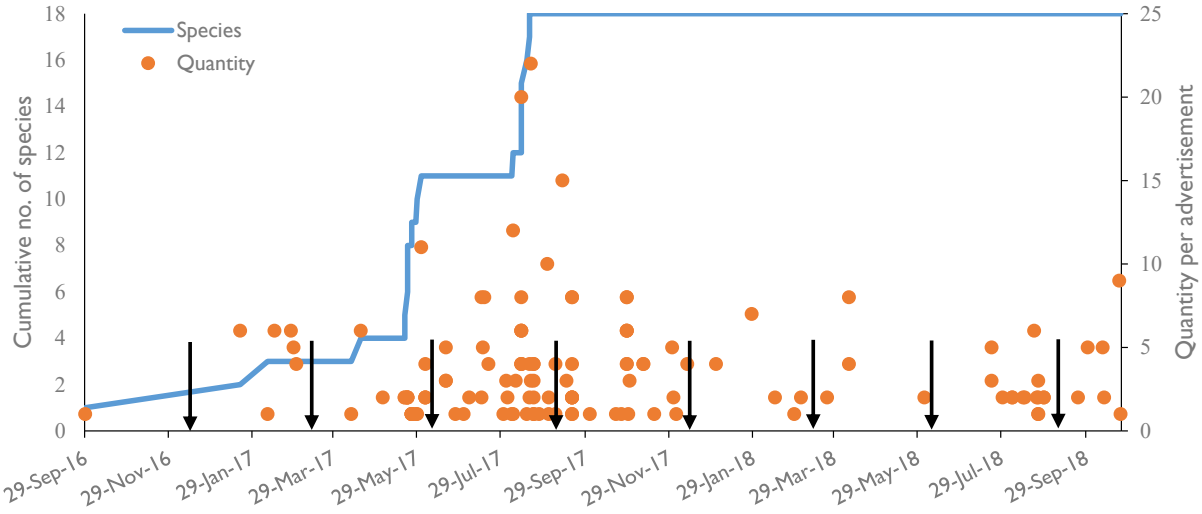
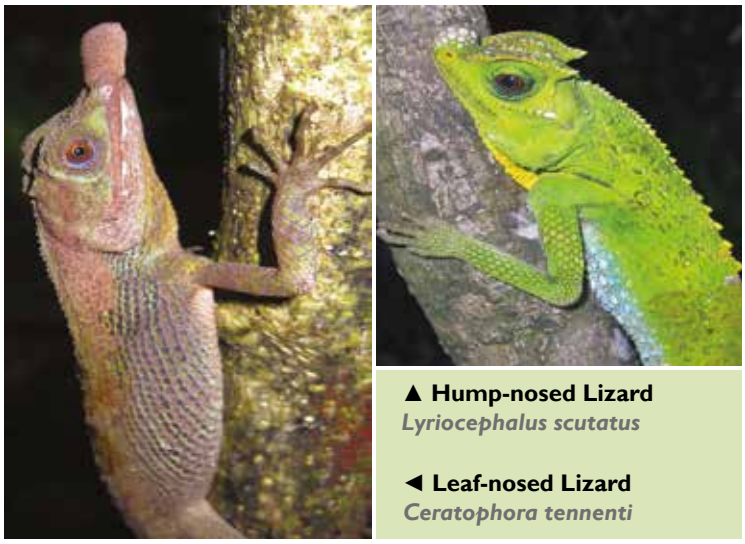


Fig. 1. Quantity per record (scatterplot) and the cumulative no. of species observed (line) throughout the survey period (September 2016–October 2018). The occurrence of the reptile fair in Hamm (Terraristika) is displayed with an arrow.

The number of animals observed was highest in 2017 with 383 animals, compared to one specimen in 2016 and 93 in 2018. The total number of species observed (18) during this study was reached 352 days into the survey period; no additional species were observed in the remaining 431 days of the study (Fig. 1). The number of species observed increased from four to 11 between April and June 2017, and 7–19 August 2017. During the first peak, the number of species observed increased from three to 11, and during the second peak from 13 to 18. This was, respectively, between 60 and nine days and 33 to 21 days before the Hamm reptile fair. A weak positive correlation was found between quantities offered for sale and the days until the next Hamm fair ($\tau = 0.138$, $Z = 2.156$, $p = <0.05$) and the days after a Hamm fair ($\tau = 0.149$, $Z = 2.307$, $p = <0.05$).

The most commonly encountered species was the Star Tortoise, with 116 specimens reported as originating from Sri Lanka (Table 1). This was followed by the Pygmy Lizard *Cophotis ceylanica* with 69 specimens and the Rhino-horned Lizard *Ceratophora stoddartii* (n=57). The majority of animals observed (n=279, 58%) were reportedly bred in captivity. For seven species, fewer than ten individuals were counted (Table 1) suggesting that these species are rare in captivity. Two pygmy lizards *Cophotis* spp. were documented as F1, which refers to first-generation offspring produced in a controlled environment, of which at least one of the parents was taken from the wild. For 182 of the reptiles observed (38%), no specific origin was mentioned. A wild origin was reported for two species—Star Tortoise (n=2) and Rhino-horned Lizard (n=3)—which constitutes a direct violation of Sri Lanka's FFPO. For nine animals the origin was declared as long-term captive, claiming a wild origin, but the animals had spent considerable time in captivity. Of all observed species, only the Star Tortoise is listed in the CITES Appendices (Appendix II) and only five have been assessed using the IUCN Red List Categories and Criteria (Table 1).

Prices were reported for 30 out of 130 records, comprising 12 species, a Rhino-horned Lizard offered for sale for EUR60 in Germany being the cheapest Sri Lankan species (although the average price for Rhino-horned Lizards during the survey was EUR312). An adult female Star Tortoise was the most expensive reptile at EUR3,200, for sale in Spain, while the average price for this species was EUR1,400. On average, the Knuckles Pygmy Lizard *Cophotis dumbara* was the most expensive reptile offered for sale (EUR1,443), and the Indian Cobra *Naja naja* the cheapest (EUR75). When the average observed price in EUR is multiplied with the total observed quantity, the cumulative average value of these 12 species (n=148) constitutes EUR62,913.



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▲ **Hump-nosed Lizard**
Lyriocephalus scutatus

◀ **Leaf-nosed Lizard**
Ceratophora tennenti

Offers to sell were tied to 14 countries, with vendors from Germany offering the largest number of Sri Lankan reptiles for sale, with 248 individuals of 17 species. Vendors from Spain reported the second-highest numbers of Sri Lankan reptiles, with 69 individuals of just three species. Of the 14 countries documented to be selling Sri Lankan reptiles, only three were non-European, with USA (n=39, of seven species) offering the largest number of Sri Lankan reptiles for sale, followed by vendors from Canada (n=15, of four species) and Malaysia (n=6, of two species). Offers for the Star Tortoise and Pygmy Lizard were recorded in six countries, suggesting that these species are relatively widespread in international commercial trade. The Leaf-nosed Lizard *Ceratophora tennentii* and Sri Lanka Green Pit Viper *Trimeresurus trigonocephalus* were offered for sale in five countries. For four species (Table 1), offers were recorded in one country. Spain (n=9), Germany (n=5) and Switzerland (n=1) were the only countries reporting animals with either a wild, or long-term captive origin. A total of 11 of these related to Star Tortoises, and the remaining three were Rhino-horned Lizards.

LEMIS Database

The LEMIS Database contains US records for the import or export of four Sri Lankan species, with a total of 52 animals. The Sri Lanka Green Pit Viper was the most commonly imported, with 30 specimens imported between 2007 and 2013; five animals were exported between 2007 (n=1) and 2008 (n=4). The Rhino-horned Lizard was imported in 2013 (n=2) and 2015 (n=8). All imported animals were declared as bred in captivity. Costa Rica (CR) was the most important source of reptiles imported into the USA, with 28 animals (all Sri Lanka Pit Vipers). Poland was the second-most important source of Sri Lankan reptiles, with two species (n=13) followed by Germany (three species, n=5) and Slovakia (one species, n=2).

Common name	Scientific name	IUCN Red List	Nat. Red List	CITES App.	Year 2016	2017	2018	Total	Countries involved
Black-cheek Lizard	*Calotes nigrilabis*		EN			20		**20**	DE/CA/US
Pethiyagoda's Crestless Lizard	*Calotes pethiyagodai*					4		**4**	DE/CA/US
Rough-horned Lizard	*Ceratophora aspera*	VU	EN			12		**12**	DE
Erdelen's horned-Lizard	*Ceratophora erdeleni*		CR			12		**12**	DE/MY
Karunaratne's horned-Lizard	*Ceratophora karu*		CR			10		**10**	DE/MY
Rhino-horned Lizard	*Ceratophora stoddartii*		EN			44	13	**57**	DE/SK/US/CA
Leaf-nosed Lizard	*Ceratophora tennenti*	EN	CR			28	12	**40**	DE/CZ/ES/SK/US
Pygmy Lizard	*Cophotis ceylanica*		EN			52	17	**69**	DE/US/FR/AT/PL/SK
Knuckles Pygmy Lizard	*Cophotis dumbara*		CR			2	6	**8**	US/DE
Blotch Bowfinger Gecko	*Geckoella yakhuna*		VU			27		**27**	DE/SK
Star Tortoise	*Geochelone elegans*	VU	NT	II	1	101	14	**116**	ES/IT/SK/DE/FR/CH
Merrem's Hump-nosed Viper	*Hypnale hypnale*		LC			5		**5**	DE/US
Hump-nosed Lizard	*Lyriocephalus scutatus*	NT	VU			6	19	**25**	DE/CZ
Indian Cobra	*Naja naja*		LC			2	2	**4**	AT/DE/PL
Common Kukri Snake	*Oligodon arnensis*		LC			1		**1**	N/A
Sri Lankan Kangaroo Lizard	*Otocryptis wiegmanni*		LC			28		**28**	DE/CA/US
Bahir's Fan-throated Lizard	*Sitana bahiri*	LC				6	2	**8**	DE
Sri Lanka Green Pit Viper	*Trimeresurus trigonocephalus*		LC			23	8	**31**	DE/SI/CH/CZ/ES
			Total		**1**	**383**	**93**	**477**	

Table 1. Reptiles native or endemic to Sri Lanka observed for sale on online classified reptile websites between September 2016 and 31 October 2018. IUCN (IUCN global, 2018); National RL (MOE, 2012). *VU=Vulnerable, EN=Endangered, NT=Near Threatened, LC=Least Concern. Countries: DE=Germany, CA=Canada, US=USA, MY=Malaysia, SK=Slovakia, CZ=Czech Republic, ES=Spain, PL=Poland, FR=France, AT=Austria, IT=Italy, SI=Slovenia.*

Discussion

The trade in reptiles native and endemic to Sri Lanka seems to be larger and encompass more species than previously realised (in comparison to Altherr, 2014, for example). Moreover, Sri Lankan species seem to be available across the globe, with the European market the most important market identified so far and where the number of species observed during this study was more than double the number recorded by Altherr (2014). The commercial export of wildlife from Sri Lanka is prohibited, therefore the increase in species observed, especially with many adult specimens being offered for sale, suggests ongoing smuggling and recent introductions into trade.

The authors observed large differences in the number of animals offered for sale in each year. Whereas the low number for 2016 could be explained by the late start of the survey (September 2016), the difference between 2017 and 2018 cannot be as easily attributed to a shorter survey time. Nine species were observed by the authors in 2017 that were not observed in 2016 or 2018. Of these, five were not observed by Altherr (2014), suggesting a potential smuggling event. In total 12 species were documented that were not documented by Altherr (2014), suggesting ongoing smuggling of Sri Lankan reptiles. A smuggling event could also explain the sudden increases in Sri Lankan species observed prior to the Hamm reptile fair, between May and September 2017. The lack of offers for these species in other years suggests that these species

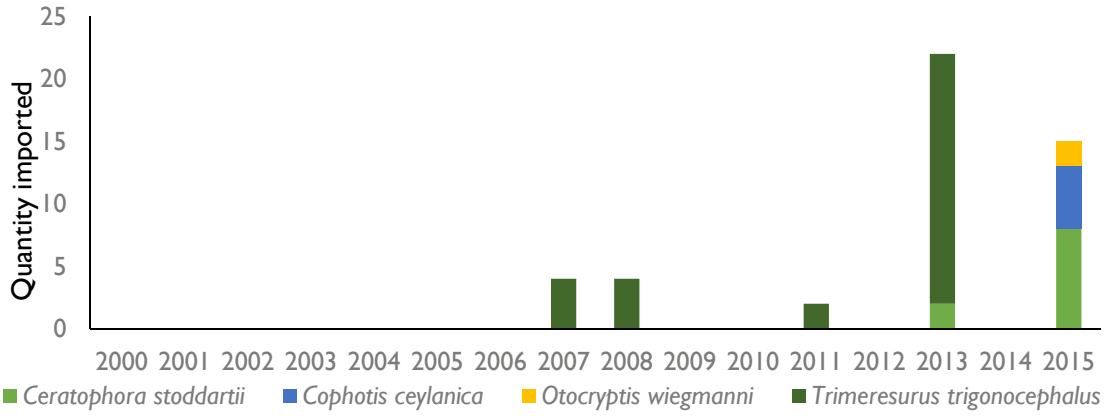

Fig. 2. Imports of Sri Lankan reptile species into the USA between 2000 and 2015. *Source: USFWS LEMIS Database*

are not yet established in trade or are not regularly bred in captivity. While the majority (58%) was reportedly bred in captivity, many specimens on sale are not offspring or juveniles but are adults. The fact that many species were only sold as adults suggests that they may fraudulently have been claimed to be of captive-bred origin. Although sporadic information on captive breeding is reported (e.g. Bartelt, 1995; Krvavac *et al*., 2015), in particular for the Star Tortoise (e.g. Vyas, 2005), captive-breeding of Sri Lankan species appears to be uncommon. Fraudulently declaring wild-sourced animals as bred in captivity creates a false sense of sustainability, as it suggests little to no impact on the wild population. While some animals might have genuinely been bred in captivity, the parental stock likely has an illegal origin. This is supported by the increasing number of endemic species observed in this study, compared to previous studies, despite the fact that export from Sri Lanka has been prohibited since 1993.

The Star Tortoise—the most commonly found species—is also the only species listed in the CITES Appendices. It is frequently targeted by smugglers in neighbouring India (D'Cruze *et al*., 2018, 2015) to meet the demand in South-east Asian markets. As mentioned, animals are smuggled out of Sri Lanka as well. A total of 11 Star Tortoises with Sri Lankan origin was declared as wild-caught, which could indicate smuggling. The UNEP-WCMC CITES Trade Database shows that 248 Star Tortoises were exported for commercial purposes from Sri Lanka between 1978 and 1985, suggesting that a proportion of the animals observed in trade could be offspring of legally exported animals. The Indian Cobra *Naja naja* was also exported from Sri Lanka, but only for zoological ("Z") and Scientific ("S") purposes. This raises suspicions that the available animals could be smuggled, or progeny of smuggled parental stock.

The LEMIS database revealed that at least four Sri Lankan reptile species are available in the USA. The US *Lacey Act* (16 USC 3371-3378) prohibits the import, export or sale of any species in violation of foreign law. Since Sri Lanka does not allow any commercial export of live native reptiles—whether wild-collected or captive-bred—the direct import of Sri Lankan reptiles into the USA is unlawful under this Act. The data show that Europe appears to be an important source for Sri Lankan reptiles imported into the USA. Previous studies suggest that US buyers circumvent the *Lacey Act* by buying these species from European reptile traders (Auliya *et al*., 2016) as they are not protected in the EU. The survey findings show that Europe is the main source for Sri Lankan reptiles for the USA, and provides considerable evidence that the EU is a key player in the international trade in Sri Lankan species.

This study illustrates that trade in Sri Lankan reptiles is booming, and more species seem to have been

CITES listing proposals to include the Pygmy Lizard *Cophotis ceylanica*, Knuckles Pygmy Lizard *C. dumbara*, Black-cheek Lizard *Calotes nigrilabris*, Pethiyagoda's Crestless Lizard *C. pethiyagodai*, the genus *Ceratophora* and Hump-nosed Lizard *Lyriocephalus scutatus* in Appendix I will be discussed at the 18th meeting of the Conference of the Parties. Aforementioned species were recorded for sale during the course of this survey.

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▲ Rhino-horned Lizard
Ceratophora stoddartii

◄ Rough-horned Lizard
Ceratophora aspera

Pygmy Lizard
Cophotis ceylanica

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introduced into trade in recent years. Results show that Germany is at the centre of the illegal trade in Sri Lankan reptiles, with 17 species observed during the study period (n=249). Many of these are micro-endemics, occurring in a very restricted area and therefore extremely vulnerable to overexploitation (Lyons and Natusch, 2013), which is reflected by their status in Sri Lanka's National Red List (MOE, 2012, see Table 1). International trade can quickly become a significant threat to these species as they also face other challenges like habitat loss and degradation (Grismer *et al*., 2014; Kiester *et al*., 2013). Authorities in Germany should be aware of the role Germany is playing in this trade and that these practices violate national legislation in the country of origin. As nationally protected species [i.e. species protected in their range States, outside the EU] are not protected in the European Union (EU), the authors urge the EU to recognise the role this market plays as a destination and transit point for nationally protected reptiles. Whereas the European Commission states that the "*EU market should not fuel demand for species that have been harvested illegally or unsustainably*" (European Commission, 2018), the lack of legal protection for nationally protected species makes the EU a key player in the illegal trade in such species (Altherr, 2014; Vinke and Vinke, 2015; Auliya *et al*., 2016). In order to combat illegal trade in species protected in their range States, it is essential that the EU recognises their status and provides the legal framework required for law enforcement to seize such specimens.

Black-cheek Lizard
Calotes nigrilabris

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The Sri Lankan authorities have submitted four CITES proposals to the eighteenth meeting of the Conference of the Parties (CoP18) (https://cites.org/eng/cop/18/prop/index.php). The proposals relate to the Black-cheek Lizard *Calotes nigrilabris*, Pethiyagoda's Crestless Lizard *Calotes pethiyagodai*, horned lizards *Ceratophora* spp., Pygmy Lizard, Knuckles Pygmy Lizard and Hump-nosed Lizard *Lyriocephalus scutatus*, all proposed to be included in CITES Appendix I. The findings of this study, which document these species in trade, reinforce the need for consideration of their inclusion in the Appendices. Moreover, this study also shows that the trade in Sri Lankan native species involves many other species whose status in the wild may be at risk from trade.

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Enhancing management of and benefit flows from VIET NAM's WILD MEDICINAL PRODUCTS

Report by Anastasiya Timoshyna, Sarah Ferguson and Rosa A. Indenbaum

Over the past two decades, illegal and unsustainable wild plant collection activities in Bac Kan province, northern Viet Nam, have led to significant local declines in wild medicinal and aromatic plant (MAP) populations. TRAFFIC has worked in this area since 2011, helping to secure the engagement of communities in the sustainable collection of MAPs, developing a strategic partnership with the Bac Kan provincial Forest Protection Department (BK FPD), and seeking commitments from buyers to purchase sustainably harvested products. This article reviews the outcomes and impacts of the project, implemented by TRAFFIC and partners in Viet Nam in 2015–2018. Earlier progress has previously been covered in *TRAFFIC Bulletin* Vol. 26 No 1. (2014) and Vol.29 No.2 (2017).

Project background

Bac Kan province is an important source of MAPs, which provide critical contributions to health and livelihoods—up to 20% of income—for low-income, rural communities, where the majority of collectors are women from ethnic minority groups. In 2014, when the project commenced, the official poverty rate in Bac Kan was 14.2%, compared to the national rate of 8.4%. Within the project's target groups, among 1,011 households in 30 villages, 306 (30%) were living below the poverty line.

The decline in local wild MAP populations is partly a consequence of insufficient experience in sustainable MAP management, lack of incentives for conservation and weak enforcement and monitoring capacity. The project addressed these factors through implementing the principles of the FairWild Standard, an international best practice for sustainable use and trade in wild-collected plants, after TRAFFIC and BK FPD secured the engagement of communities in sustainable collection and commitments from buyers to purchase sustainably harvested products.

Project sites included buffer zones of Nam Xuan Lac Species and Habitat Conservation Area, Kim Hy Nature Reserve and Ba Be National Park, and some communes of Na Ri District—well-known hotspots of MAP trade in Bac Kan, where much of the produce is exported unprocessed to China.

The project's goals were to enhance sustainable MAP harvesting practices; improve marketing opportunities; increase the income of 1,000 households by 20%; and reduce the overexploitation of MAPs in project sites, creating a sustainable model for replication. The project was guided around three output areas, as below.

1. The feasibility of applying the FairWild Standard to wild MAP harvest in a value-chain approach. The project focused on the **target species** Jiaogulan *Gynostemma pentaphyllum*, Woolly Fern *Cibotium barometz* (CITES Appendix II), *Alpinia* spp., and *Amomum* spp. identified through community consultations, trader and manufacturer interviews, and consultations with the FPD as having market demand and the potential to be sustainably harvested in commercial quantities. Jiaogulan proved to have the strongest market and community interest. The project encouraged community-based management of other wild MAPs in the area, including *Heliciopsis lobata* and *Zingiber cassumunar*, which increased market access for products and provided homegrown jobs that encouraged independence and economic growth and generating incomes as an important incentive for species conservation.

A series of training workshops and exchange visits helped build collectors' capacity to negotiate and trade equitably and also covered technical aspects of MAP harvesting and processing, fair pricing, entrepreneurship, and access and benefit-sharing mechanisms. Guidance was provided on business plans and compliance with government policy on co-operatives.

Rather than operating independently, which hinders market access, local collectors were encouraged to **establish formalised groups** through village community meetings, capacity-building workshops, and Asset-Based Community Development training sessions. Ultimately 15 new collectors' organisations were established, with

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▲ Na Ri District, Bac Kan province, northern Viet Nam; ►Sustainable harvesting training workshop in the project area, Bac Kan province.

endorsement from local authorities and operational regulations in place. These "collectors' groups" had 221 members by the end of the project, all of them trained on the FairWild principles of sustainable harvesting, processing, and trading. Several of the groups expressed an interest in becoming collectors' co-operatives in the future.

Herb dryers were purchased for several collectors' groups, enabling efficient drying of large quantities of herbs, as well as vacuum packaging machines to increase the shelf-life of products, herb cutting machines, and harvesting equipment such as boots, knives, and gloves. These enhancements to product quantity and quality resulted in fewer wild plants being harvested.

The FairWild Standard underpinned the project as a means to provide clear guidelines for local collectors and companies to produce sustainably sourced, wild-collected products while considering aspects of fair trade and social sustainability. The project mainly focused on the domestic market where current demand for sustainably certified products is insignificant, and so achieving FairWild certification was not a goal of the project. However, the groundwork is now in place for collectors' groups to produce FairWild-certified products in the future and for the uptake of FairWild products in Viet Nam.

The project **fostered relationships with national and international companies interested in purchasing MAP products**, including the Vietnamese partner companies, DK Natura and DK Pharma. A Jiaogulan purchasing contract between DK Natura and Xuan Lac group was signed in Year 2 of the project with a 5% mark-up on the market price for sustainably harvested produce; funding for product registration; and a three-year commitment to purchase wild MAPs from the group. Xuan Lac group sold 200 kg of dried Jiaogulan to DK Natura for VND17,200,000 (USD752) and DK Natura/DK Pharma produced the final products—tea bags and loose-leaf Jiaogulan tea. The project helped ensure product registration complied with Ministry of Health regulations and the products were certified in March 2017 for sale in Viet Nam. DK Natura also purchased 200 kg of Jiaogulan, 500 kg of *Zingiber cassumunar*, and 600 kg of *Heliciopsis lobata* from the Bao Chau Cooperative for around VND170,000,000 (USD7,430). The Cooperative also sold 45 kg of Jiaogulan to an Indian company for ca. VND20,250,000 (USD892).

2. Sustainable-use strategies and management plans

A resource assessment provided the foundation for species and area management plan in Bac Kan Province. The survey team included BK FPD and the Institute of Ecological and Biological Resources, who mapped species' natural distribution and estimated populations. The assessment recommended sustainable harvesting quotas and harvesting areas and was used in the development of the Bac Kan Jiaogulan and Woolly Fern management plan, which included guidance on management of harvesting, processing, production and product commercialisation. Although focused on two species, the plan's general principles are applicable to other species.

The resource inventory revealed that all the above-ground parts of Jiaogulan, including the leaves and stem, were often collected (between March and September). This destructive practice—in part carried out because of harvesters' lack of understanding of the species' potential value—led to species decline and slow regeneration. No collection protocol existed for Woolly Fern, harvesting happening spontaneously depending on buyers' requests. For neither species was there an understanding of how harvesting conditions (e.g. harvesting in the rainy season) affected the products. A training programme was therefore designed and implemented by project staff with additional trainers reached through "training of trainers" programmes (targeting BK FPD staff, and community representatives). In total, more than 1,000 MAP collectors participated in training activities. *A Pocket Guide for the Sustainable Collection of Jiaogulan, Woolly Fern, and other Medicinal and Aromatic Plants* was disseminated to collectors, and signboards were displayed in target areas on sustainable harvesting and the benefits of collector group membership.

Technical support was provided to BK FPD in submitting formal recommendations to the Bac Kan Province People's Committee to **improve provincial regulations for the sustainable management of MAPs**. A MAPs Product Development Plan (PDP), developed with BK FPD, was positively received and plans were made to integrate it into the "One Commune One Product" (OCOP) programme. This programme—which was approved for implementation in early 2018—aims to help the province meet economic development goals by 2020 by lending financial and technical support to the creation of effective production and business models for traditional products, including MAPs.

3. Scaling up the project model

TRAFFIC and the Viet Nam Chamber of Commerce and Industry co-hosted a FairWild workshop for local traditional medicine practitioners, pharmaceutical companies, food companies, and cosmetic ingredient producers. The workshop advocated the uptake of sustainable harvesting and fair-trade practices as part of companies' corporate social responsibility (CSR) initiatives.

A review of gaps in Vietnamese policy and law regarding harvesting and trading of forest resources found that the existing legal framework was not comprehensive with respect to: collection of certain species; lack of harvesting area maps; traceability; post-harvest monitoring and evaluation; and benefit-sharing opportunities for local collectors. The responsibilities related to trade of natural resources are split between multiple government agencies, necessitating complex solutions.

Government bodies, including Ministry of Natural Resources and Environment, Biodiversity Conservation

Agency (BCA), Ministry of Agriculture and Rural Development, and the National Institution of Medicine Materials, were consulted about contributing to Viet Nam's commitment to implement the World Health Organization Guidelines on Good Agricultural and Collection Practices (GACP). This led to an initiative to integrate the FairWild Standard into the GACP in Viet Nam and a proposal was submitted to the Ministry of Health suggesting that the FairWild Standard be integrated into national Circular 14/2009. The Circular is currently under revision.

TRAFFIC and the Traditional Medicine Administration, Ministry of Health, co-hosted a forum for traditional medicine practitioners to examine traceability with regards to imports and exports to/from China.

A TRAFFIC and BCA study on the interface of access and benefit sharing (ABS) guidelines and FairWild principles was undertaken. The study found the FairWild principles could complement ABS-sharing rules, but stronger actions were needed from the government on wild MAPs. Subsequently, TRAFFIC and BCA co-hosted a workshop for pharmaceutical companies, trading firms, and health and conservation agencies to discuss a new decree related to access and benefit sharing—Decree 59/2017/ND-CP—the fine-tuning of which is currently under way.

Evaluation of project outcomes

Income generation, economic development, poverty alleviation. At the project's outset, a baseline survey on income generation by local MAP harvesters was conducted. A qualitative mid-term review found positive impacts at the community level, including strengthened relationships amongst villagers through participation in collectors' groups, improved understanding of trade in MAPs, and strong relationships established between DK Pharma/DK Natura and the collectors. A final assessment found that the average annual household income from wild MAPs collection and trade had increased by 31% to VND2.23 million (USD98) compared with the baseline of VND1.7 million (USD74). There was also an increase in the number of people reporting wild MAPs harvesting as part of their income, from 55% (baseline) to 73% (final).

Gender equality. The project also focused on empowering women and ethnic minorities, who comprise 90% of the wild MAPs collectors in Bac Kan province. The project encouraged their participation, leading to a greater understanding of resource management, negotiation and trading skills, and engagement in decision-making related to MAP trade. TRAFFIC and BK FPD co-hosted a National Women's Day celebration to honour the role of women and their families in wild MAP collection and conservation as well as local economic development. The women in attendance represented collectors' co-operatives and groups, the four target districts, local authorities, and DK Natura. By the end of the project, 415 women were trained on FairWild principles for sustainable wild-harvesting and fair trade and 70 were registered as members of co-operatives or groups. Four became trainers themselves.

Biodiversity conservation and sustainable use of natural resources. Ensuring the long-term sustainability of the project was a key goal from the outset. Equipment and pocket guides will be available to the collectors beyond the life of the project. The concept of sustainable harvesting is better known, and strides have been made to integrate the FairWild Standard into national and local policy. Finally, the species and area management plan will underpin the future sustainable use of MAPs in Bac Kan province. At a higher level, the project contributes to Viet Nam's commitments on delivery of the Convention on Biological Diversity (CBD), the Nagoya Protocol, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Lessons learnt and recommendations

- Responsible trade in wild MAP resources presents an opportunity for sustainable economic development and biodiversity conservation, particularly for poor, marginalised communities.
- Replicating the Bac Kan model in different provinces of Viet Nam and the Mekong region could have a positive impact on conservation and long-term availability of plant resources and associated habitats.
- Before a project begins, it is essential to ensure both the presence of a strong local implementing agency that can also assist with the longer-term sustainability of project outcomes and the buy-in of commercial partners.
- To safeguard natural resources, the FairWild Standard is recommended as an internationally recognised best practice, including its key requirement of developing species and area management plans.
- There is an urgent need to continue supporting the implementation of responsible trade and sourcing practices for wild plants in the private sector in Viet Nam.
- Creating an enabling policy and regulatory environment at appropriate levels (provincial, national), which integrate the safeguards for sustainable use of wild plant resources and the incentives for responsible practices provides an important framework for private-sector practices.
- An intra-agency co-ordination mechanism should be developed for the sustainable and legal sourcing and trade in wild plants to ensure that policies are well-designed and effectively implemented.

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Investigations into the illegal wildlife trade in central Lao PDR

Report by J. Schweikhard, K. Kasper, C.L. Ebert, M. Lehmann, P. Erbe and T. Ziegler

Tropical ecosystems are at high risk of mass extinctions, holding the largest numbers of species on earth. In addition to other anthropogenic factors, illegal wildlife trade is a major threat to local populations (Bennett and Robinson, 2000). Wildlife remains one of the most important food resources in many rural areas of Lao People's Democratic Republic (Lao PDR) (Butler, 2009). Specimens of numerous species are sold at local markets, but a comprehensive understanding of the human impact on nature conservation of such consumption remains insufficient.

This study provides a trade assessment using market surveys of terrestrial vertebrates being offered for sale in Khammouane Province, in central Lao PDR, where the Hin Nam No National Protected Area (HNN NPA) is located. This protected area was submitted by the Lao National Commission for UNESCO for inscription on the UNESCO World Heritage List and is currently on the Tentative List (UNESCO WHC, 2018). As documentation of illegal wildlife activities within and around the area is one of the requirements for inclusion in the World Heritage List, wildlife trade surveys were performed both during the dry season (October to November 2017) and rainy season (June to July 2018), to document seasonal trade activities and explore potential differences across the different seasons.

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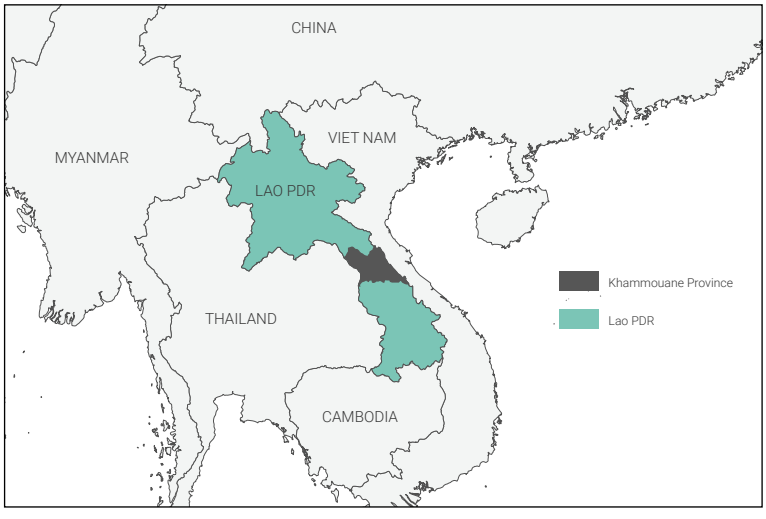
▲ **Typical market in Khammouane Province, Lao PDR, with a sign indicating that illegal wildlife trade is punishable by law.**

Introduction

Located in tropical South-east Asia, the Indo-Burma Biodiversity Hotspot, which includes Lao PDR, is one of the most biologically important regions of the planet (Tordoff *et al.,* 2012). Currently, it is suggested that this biodiversity richness will soon reach human-induced extinction rates at least five times higher than in the recent past (Johnson *et al.,* 2017). In these times of human population growth, rising demands and globalisation (FAO, 2009), the illegal wildlife trade is considered the critical issue in the interface between biodiversity conservation and sustainable development (UN Secretary-General, 2016). Rural villagers in developing countries are the most affected by this issue (Robinson *et al.,* 2018). Some wild animal populations are depleting faster than they could ever regenerate (IUCN Red List, 2014).

In Lao PDR the majority of inhabitants live in rural areas (Silverstein *et al.,* 2018) and are highly dependent on wildlife (Johnson *et al.,* 2005) both as an important food resource (Butler, 2009; Singh, 2008) and for medicine (Lüthi, 2012; Johnson *et al.,* 2005). Therefore numerous terrestrial vertebrate species are sold at local markets, regardless of their international or domestic conservation status. To date, few studies have been conducted on species population assessments in the country, and while other provinces have been examined (Foppes *et al.,* 2001; Suzuki *et al.,* 2015), the last survey in Khammouane Province took



▼ **Fig. 1. Map of mainland South-east Asia, and the Indo-Burma Biodiversity Hotspot.**

Taxon	Common name	Scientific name	CITES	IUCN	Nat.	No.S	Ind.
MAMMALIA							
Artiodactyla	Southern Red Muntjac	*Muntiacus muntjak*	-	LC	M	2	2
Carnivora	Sun Bear	*Helarctos malayanus*	I	VU	P	1	1
	Asiatic Black Bear	*Ursus thibetanus*	I	VU	P	2	2
	Smooth-coated Otter	*Lutrogale perspicillata*	II	VU	P	1	1
	Large-toothed Ferret-Badger	*Melogale personata*	-	LC	M	1	1
	Common Palm Civet	*Paradoxurus hermaphroditus*	-	LC	M	4	5
	Leopard Cat	*Prionailurus bengalensis*	II	LC	-	4	5
Chiroptera	Greater Short-nosed Fruit Bat	*Cynopterus sphinx*	-	LC	M	1	5
	Dawn Bat	*Eonycteris spelaea*	-	LC	M	2	32
	Leaf-nosed Bat	*Hipposideros* sp.			M	1	10
Lagomorpha	Burmese Hare	*Lepus peguensis*	-	LC	M	1	1
Pholidota	Pangolin	*Manis* sp.	I	**CR**	P	2	5
Primates	Bengal Slow Loris	*Nycticebus bengalensis*	I	VU	P	3	3
	Red-shanked Douc Langur	*Pygathrix nemaeus*	I	EN	P	1	1
Proboscidea	Asian Elephant	*Elephas maximus*	I	EN	P	1	1
Rodentia	Asiatic Brush-tailed Porcupine	*Atherurus macrourus*	-	LC	M	2	2
	Malayan Porcupine	*Hystrix brachyura*	-	LC	M	2	2
	Laotian Rock Rat	*Laonastes aenigmamus*	-	LC	P	2	3
	Indian Giant Flying Squirrel	*Petaurista philippensis*	-	LC	P	1	2
	Black Giant Squirrel	*Ratufa bicolor*	II	NT	M	7	7
	Indo-Malayan Bamboo Rat	*Rhizomys sumatrensis*	-	LC	M	1	1
Scandentia	Northern Treeshrew	*Tupaia belangeri*	II	LC	-	2	3
AVES							
Columbiformes	Eastern Spotted Dove	*Spilopelia chinensis*	-	LC	M	3	10
Cuculiformes	Greater Coucal	*Centropus sinensis*	-	NE	P	2	12
Passeriformes	Common Myna	*Acridotheres tristis*	-	LC	M	2	2
Strigiformes	Buffy Fish-owl	*Ketupa ketupu*	II	LC	M	1	1
REPTILIA							
Squamata	Chinese Water Dragon	*Physignathus cocincinus*	-	NE	M	3	10
Sauria	Clouded Monitor	*Varanus nebulosus*	I	NE	M	4	5
	Common Water Monitor	*Varanus salvator*	-	LC	M	4	4
Squamata	Cobra	*Naja* sp.	II	DD	M	1	1
Serpentes	King Cobra	*Ophiophagus hannah*	II	VU	P	3	15
Chelonians	Giant Asian Pond Turtle	*Heosemys grandis*	II	VU	-	3	3
(Testudines)	Mekong Snail-eating Turtle	*Malayemys subtrijuga*	II	VU	M	14	78
	Wattle-necked Softshell Turtle	*Palea steindachneri*	III	EN	-	1	1

Table 1. Overview of species/genera at risk and their conservation status according to CITES, the IUCN Red List and the Lao Protection List. Key: Not Evaluated (NE); Data Deficient (DD); Least Concern (LC); Near Threatened (NT); Vulnerable (VU); Endangered (EN) and Critically Endangered (**CR**). - = not listed; Prohibition Category 1 [P] and Management Category 2 [M] sorted by taxonomic classes and orders. CITES Appendices I; II; III. Nat. = National Conservation Status; No.S. = number of sightings; Ind. = individuals.

place almost two decades ago (Nooren and Claridge, 2001) and needs re-assessing to provide an overview of the current situation and to facilitate strategic planning of future conservation efforts.

To this end, this study provides a topical market analysis in Khammouane Province (Fig. 1), within the framework of four bachelor theses and comprised investigation of 15 trade centres during both the dry and rainy seasons in 2017 and 2018, respectively, to provide an assessment at different times of the year.

Methods

The authors conducted 66 surveys at 15 trade centres in Khammouane Province that were offering wild-sourced terrestrial vertebrates. These took place during October and November 2017 (C.L. Ebert and M. Lehmann) and June and July 2018 (K. Kasper and J. Schweikhard) during the dry and rainy seasons, respectively, allowing for an overview of the trade in these species at different times of the year. Each market was visited at least twice

but wildlife being offered for sale at roadsides was also documented. Species were identified on site or subsequently from photographs taken by the researchers. The regulatory and conservation status of the species was assessed internationally according to CITES, the IUCN Red List of Threatened Species™ and the national wildlife protection list.

Descriptive statistical evaluations were carried out in R environment for statistical computing (R Core Team, 2017). The libraries—rcompanion (Mangiafico, 2018)—were used to summarise datasets and "ggplot2" (Wickham, 2016) for the depiction of data distribution. In cases where only small numbers of individuals were recorded, Fisher's exact test was used with a level of significance at $p<0.05$ to detect differences between seasons. P-values were then adjusted using the Holm method to correct the family-wise error rate, the probability of making one or more false discoveries, from multiple considerations of hypotheses (Holm, 1979).

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Market stall in Khammouane Province, with live Clouded Monitor *Varanus nebulosus* and freshly killed squirrels and a rat.

Legislation

The *Lao Wildlife and Aquatic Law* (LWAL) (No. 7, 2007) applies to wildlife species that are divided into three categories: those considered to be at risk of extinction and of high value, which are listed in the Prohibition Category 1 [P] and their use prohibited without permission; Management Category 2 species [M] are managed and include those of national economic, social and environmental interest and important to livelihoods, and their use is controlled. Species listed in Categories 1 and 2 are included in Decree No. 81/PM (2008). Category 3 [C] species (listed in Decree No. 70/PM (2008)) include those that can reproduce widely in nature and that are considered to be important for socio-economic development; their use is permitted provided such use does not adversely affect populations in the wild. According to Prime Minister Order No. 05 on *Strengthening Strictness of the Management and Inspection of Prohibited Wild Fauna and Flora*, issued on 8 May 2018 and after much of this survey was completed, enforcement concerning wildlife issues shall be tightened, specifically in terms of trapping (affecting species listed in Categories P and M of the LWAL) and trade, and the export of species protected in Lao PDR and those covered by CITES is prohibited (Thongloun Sisoulith, 2018). A new Penal Code No. 26/NA 17 May 2017 (effective 17 October 2018) broadens and increases penalties associated with wildlife violations.

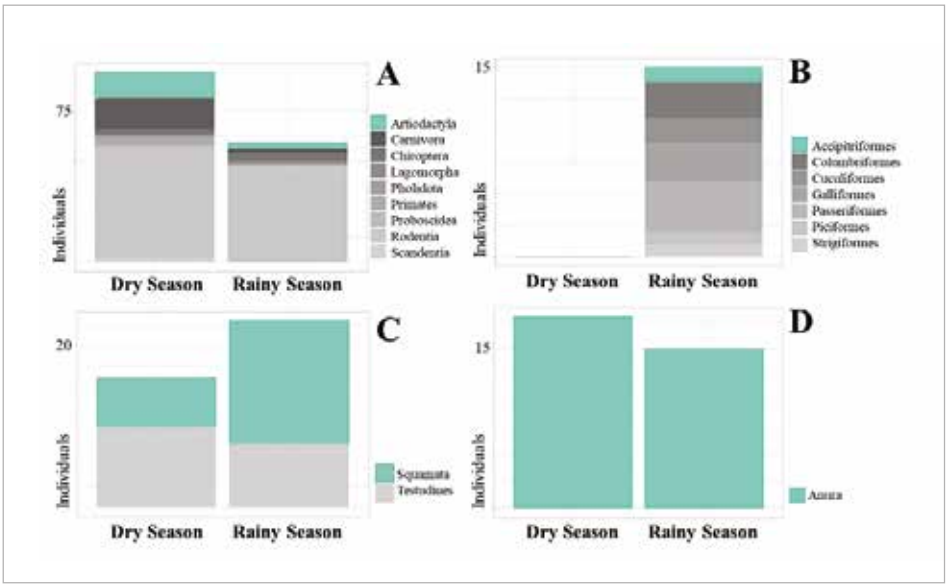

Fig. 2. Relative amounts of individuals observed (Y-axis) with stacked orders indicated.
The findings of the dry season (October to November 2017) and rainy season (June to July 2018) are compared (X-axis). There are significant differences in reptiles (frequencies of Squamata (Fisher's exact test, $p=5.99\times10^{-4}$)) and mammals (Fisher's exact test, $p=7.57\times10^{-3}$). As birds were not a focus in the first phase of the study, comparative data are lacking for all seasons. **A** Mammalia **B** Aves **C** Reptilia **D** Amphibia.

Results

A total of 3,276 individuals was recorded during the course of the surveys (12.3% mammals, 1.2% birds, 4.3% reptiles and 82.2% amphibians). Out of 66 species (38 mammals, seven birds, nine reptiles, 12 amphibians) that were identified to species level, 24.6% were considered at risk internationally (CITES Appendices I-III or at least categorised as Near Threatened by the IUCN Red List of Threatened Species™) and 38.5% are listed on the national LWAL. None of the amphibian species was considered at risk. An overview of documented species at risk is recorded in Table 1.

A comparison of individuals of four taxonomic classes offered in the dry and rainy seasons is illustrated in Fig. 2. As birds were not a focus in the first phase of the study, comparative data is lacking for all seasons. Amphibians observed were only represented by the order Anura (frogs), while reptiles consisted of various lizards, snakes and chelonians (testudines). There were significant seasonal differences in mammal (A, Fisher's exact test, $p=7.57x10^{-3}$) and reptile findings (C, in frequencies of Squamata (snakes and lizards), Fisher's exact test, $p=5.99x10^{-4}$).

◄ **Clouded Monitors *Varanus nebulosus***

It was apparent that larger quantities of mammals and amphibians were traded during the dry season. By contrast, greater numbers of reptiles were documented in the rainy season.

Discussion

The study confirms findings documented over recent decades (Nijman, 2010) that trade in numerous vertebrate species continues in Lao PDR, and includes some which are vulnerable and protected. The trade is not limited to certain periods but continues year-round. As observed by Johnson *et al.,* (2010), it appeared that hunting frequencies vary due to seasonal differences in agricultural labour, such as the planting or harvesting of rice.

Hunting down the body size

Snares were stated to be the most commonly used trap in the survey area as they are the predominant hunting method in South-east Asia (Gray *et al*., 2017). With multiple sales taking place each day, a shop owner described the most lucrative period to be during the main trapping season between November and December. Given the relatively small number of inhabitants of the village her shop was located in, and the large number of snares sold, a high level of engagement in trapping amongst the villagers must be assumed.

Due to the shape and size of the snares encountered during the surveys, they appeared to be suited to smaller-bodied animals. In this study, smaller terrestrial vertebrates such as Rodentia and Anura species were identified to be the most commonly traded species. These animals increasingly become victims of a phenomenon that was first observed 15 years ago in similar environments in Thailand: "hunting down the body size" (Tungittiplakorn and Dearden, 2002). They described how the demand for wildlife does not exclude any animal group. When it comes to choice, larger vertebrates are preferred as they are the most profitable both in trade terms and for their nutritional values. However, when larger animals become scarce, the focus shifts to the smaller, more abundant species (Ripple *et al*., 2016; Ripple *et al*., 2019; Bennett *et al.,* 2002). Therefore, overhunting over longer periods also leads to a decline in populations of smaller vertebrates that can even result in local extinctions (Wikramanayake *et al.,* 1998).

The fact that the majority of specimens recorded during these surveys comprised smaller animals could be a clear indicator that populations of larger animals have already declined to a large extent or are at least difficult to obtain. Studies in South-west China have already demonstrated a correlation between hunting preference for larger-bodied vertebrates, e.g. boars and muntjacs, and population declines, as well as species endangerment (Chang *et al.,* 2017). In light of this phenomenon, the conservation status of certain species might require revision.

Global connection

In addition to consumption of wild meat and wildlife-based products within Lao PDR, the increasing demand from neighbouring countries and an international market aggravate the issue. So far, Lao PDR remains at a trade-off between human development and conservation needs. During the Viet Nam War in the late

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◄ Clockwise, from top: market stalls selling freshly killed rats, disembowelled dried frogs, and slugs; Red-shanked Douc Langur *Pygathrix nemaeus*, Boualapha district; and Mekong Snail-eating Turtles *Malayemys subtrijuga*, all at locations in Khammouane Province.

20th century, Lao PDR suffered severe bombardments, forcing people to sustain themselves with wild food resources. With a dysfunctional economy that could not ensure a reliable food source (Duckworth *et al.,* 1999), the illegal use of wildlife was, and continues to be, high. With trade in many species taking place regardless of their conservation status or national orders in place to regulate such practices, the prospects for protecting the country's rich diversity of wildlife from unsustainable trade are poor.

At present, the large amount of steady trade activity provides evidence that measures in place to prevent illegal wildlife trade remain widely ineffective. Further attempts to regulate the trade also entail risks. Any trade bans could mean not just the loss of control in monitoring and preventing population declines but also of trade shifts. The prosecution of wildlife crimes alone in a broad context of trade drivers and frame conditions is likely to drive the trade underground.

Over the course of these studies, neighbouring China and Viet Nam were mentioned frequently as driving forces of the wildlife trade (see also Environmental Investigation Agency, 2015). This might be the reason why certain markets have developed as major trading points. The most active markets for wildlife were usually located in close proximity to a major road network. These provide the main transport route between Thailand, Lao PDR and Viet Nam, and play a pivotal role in facilitating the trade within South-east Asia.

Based on the literature, trade links to neighbouring countries are already apparent. The Lao Government itself has revealed that most wildlife trade is driven by foreign demand (Prime Minister's Office, 2005). Nooren and Claridge (2001) refer to Thailand, Viet Nam and China in this context. They also report exports with annual wholesale values of USD11.8 million being smuggled to China. With its booming economy, China has become the world's fastest growing market for wildlife (Butler, 2009). The increasing demand for wildlife requires strong border controls. Although this survey has been conducted exclusively within Khammouane Province, it is likely to be representative of the entire country and the South-east Asian region as a whole. With high levels of wildlife remaining and the country's position as a critical trading centre, Lao PDR is obligated to address more rigorously the issue of illegal wildlife trade.

If efforts to prevent illegal wildlife trade are to have any success, a more strategic and holistic approach is needed, together with improved dissemination of information about wildlife laws and more rigorous law enforcement.

Recommendations

Prosecution alone is an inadequate approach to combat wildlife crime and unlikely to lead to long-term success. As trade in wildlife has deep roots in society, social sciences must be integrated into the corresponding conservation efforts. It is important to understand why humans behave in certain ways regarding the environment and to recognise that wildlife contributes to the maintenance of food security and is essential in providing incomes, especially for rural populations. The authors endorse two key strategies to address these problems, namely policy and public awareness, including behaviour change communication (TRAFFIC, 2016; Singh, 2010). There are ways to combine the conservation of biodiversity and people's need for a sustainable income. Eco-tourism can take the form of community-based projects, provide job opportunities and promote and support an understanding that wildlife is more valuable alive. For instance, former hunters with excellent knowledge of wildlife habitats are suited to professions as wildlife tour guides. A similar approach in the northern Lao Nam Et-Phou Louey National Protected Area has already been established successfully and has created a link between wildlife protection and the wellbeing of local people (Butler, 2009).

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Laotian Rock Rat *Laonastes aenigmamus* at a market in Ban-kok, Khammouane Province.

The dissemination of comprehensible information about the legal status of trapping and the long-term consequences of overhunting needs improvement. Recognising people's personal interest in preserved ecosystems, rather than solely punishing them with fines and incarceration, might lead to better results.

Approval of the application for UNESCO World Heritage Site status will certainly provide the HNN NPA with greater motivation to improve conservation efforts. Such an upgrade is supposed to give the NPA a new and international identity and will help to generate further funds for wildlife protection activities. It could further ensure economic benefits, e.g., from ecotourism.

Further details of the surveys under discussion, including a socio-economic assessment of this study involving considerations of consumer behaviour and livelihood needs driving personal engagement in poaching are currently being analysed and will be published in due course.

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Body of a cobra *Naja* sp., Khammouane Province.

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LAGOS, NIGERIA:

A snapshot survey of the illegal ivory market

PHOTOGRAPHS: SONE NKOKE CHRISTOPHER / TRAFFIC

Report by Sone Nkoke Christopher

▲ Worked ivory items on sale at the Lekki ivory market, July 2018, Lagos, Nigeria.

Introduction

African elephants occur in a wide variety of habitats, from tropical swamp forests to deserts (Blanc *et al.*, 2007). According to Thouless *et al.,* (2016), West Africa's elephant populations are mostly small, fragmented and isolated. The estimated number of elephants in areas surveyed within the last 10 years in West Africa was 11,489 (± 2,582) at the time of the last survey of each area, with estimates showing a decline in Nigeria since 2006 (Thouless *et al.,* 2016). In fact, the African Elephant Status Report estimated Nigeria's total elephant population at only 94 animals and noted five sites as having "lost" elephant populations since the previous status report, but suggested that an additional 169–463 elephants may be in areas that were not surveyed (Thouless *et al.,* 2016). Indeed, the Yankari Game Reserve, with an estimated 350 individuals (Dunn and Nyanganji, 2011), is the largest surviving and only viable elephant population in the country; the Okomu National Park (ONP), and the Omo and Ifon (now Osse River Park) Forest Reserves (OFR) are also said to support only 33 and 28 elephants, respectively (Okekunle, 2016). The future is not bright as threats faced by these elephant populations include habitat destruction and poaching for the international ivory trade, according to J. Onoja of the Nigerian Conservation Foundation (pers. comm., 17 July 2018).

Over the centuries, elephant hunters have exterminated many elephant populations, particularly those in North Africa in the early Middle Ages, in South Africa in the eighteenth and nineteenth centuries (Douglas-Hamilton, 1979), in West Africa in the late nineteenth and early twentieth centuries, and in northern Somalia in the mid-1950s (Bourgoin, 1949). Successive reports of the Elephant Trade Information System (ETIS) for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) document that the illegal ivory trade has risen to the highest levels in two decades following a sharp upturn in seizures of large shipments of elephant tusks in recent years (Milliken *et al*., 2012; 2016; 2018). These reports indicate that 2011 and 2012 were the worst years on record, with "major surges" in the illegal trafficking of ivory, but some level of decline in the total weight of ivory in trade was noted in 2016 and 2017.

The movement of large-scale ivory shipments out of Africa is controlled by organised syndicates. According to Milliken (2014), it is believed that most of these syndicates currently function as Asian-run, African-based transnational operations. These criminal networks increasingly operate like global multinational businesses, connecting local resources to global markets through complex and interlinked networks, often in collusion with local business and political elites, even sometimes including those tasked with protecting wildlife (Nellemann *et al*., 2016). Another dimension of the trade has involved the presence of unregulated domestic ivory markets in African countries that openly offer ivory products to local and foreign buyers without government interference (Milliken *et al*., 2012). Nigeria is no exception, with ivory openly traded in Lagos and other parts of Nigeria.

Viewed against previous surveys, contemporary ivory markets in Nigeria are reportedly holding steady, with a thriving trade in ivory items. A 1989 survey found 1,081 kg of ivory items on display in Lagos, making up 70% by weight of ivory items seen in the country; another study undertaken in 1994 estimated that there were between 500 and 700 kg of ivory items openly for retail sale in Lagos (Martin and Vigne, 2013). A third, more detailed survey of the Lagos ivory market was carried out in 1999, with an estimated weight of 1,742 kg of worked ivory for retail sale from a count of 5,966 items in 40 outlets, and 3,681 ivory items were recorded at 16 outlets at the Lekki souvenir market (Martin and Stiles, 2000). A further study in 2002 counted 5,107 ivory items weighing 1,910 kg, mostly at the Lekki market (Courouble *et al.,* 2003), and another study in 2012 found 33 retail souvenir outlets with 14,200 ivory items (Martin and Vigne, 2013). A recent study in 2015 showed that ivory trade flourishes in some parts of Lagos State, with woodwork and beadwork being used as a cover, especially in hotels where such goods are easily accessible to foreign buyers (Akeredolu *et al*., 2016).

Methodology

A rapid survey was undertaken between 28 and 29 September 2017 to ascertain the contemporary dimensions of the existing ivory market in Lagos. A more detailed survey was carried out in Lagos from 15 to 20 July 2018 with a focus on the Lekki market, Eko Hotel and Suites, Murtala Mohammed International Airport, Oriental Hotel Federal Palace Hotel, and Airport Hotel as a comparative assessment to previous studies.

The methods used consisted mainly of physical visits by the author—an experienced ivory market surveyor—for direct observation and formal and informal discussions with vendors and other stakeholders (wildlife and other law enforcement authorities, NGOs, etc.), with recordings and photographs used as a means of cross-checking and verifying information, especially the number and types of ivory items. The language used during the survey was English. Some covert methods were employed given that some vendors and carvers were suspicious and reluctant to divulge information about their activities, and on other occasions, a Nigerian national was engaged to facilitate information exchange with certain vendors, acting as an interpreter for those whose main language was Hausa, a language spoken by about 80% of the vendors from Nigeria and other countries of West Africa. The number of stalls, the type and quantity of ivory on sale, prices, numbers of carvers, the profiles of buyers as observed and from information provided by the vendors were recorded. In some instances, the size and weight of items were estimated from experience.

The price of the items was generally recorded as Nigerian Naira (NGN), but later converted to US dollars for standardisation (USD1=NGN360, September 2018 rate: https://www.oanda.com/currency/converter/).

Discussions were held with a number of government law enforcement officials, as well as personnel from the CITES Management Authority and the focal person of the National Ivory Action Plan, the National Environmental Standards and Regulations Enforcement Agency (NESREA), the Nigerian Customs Services (NCS) and the non-government organisation Nigerian Conservation Foundation (NCF).

Legislation and Law Enforcement

Nigeria ratified CITES in 1974. At the national level, elephants are protected under the First Schedule of *The National Wildlife Species Protection Act* (NWSPA) which was signed by the President of the Federal Republic of Nigeria on 30 December 2016. This relatively new Act provides for the conservation and management of Nigeria's wildlife and the protection of species in danger of extinction as a result of overexploitation or habitat change, as required under CITES, the Convention on the Conservation of Migratory Species of Wild Animals (CMS), and the Convention on Biological Diversity (CBD), to which Nigeria is a signatory.

Section 1(1) of the NWSPA states that "*the hunting or capture of, or trade in, the animal and plant species specified in the First Schedule to this Act (being wild animal and plant species that are endemic to Nigeria or otherwise considered to be threatened with extinction) is prohibited*". Trade in specimens of species listed in the First Schedule may be conducted under exceptional circumstances. In Section 5(2) of the NWSPA it states that "*any person who, in contravention of the provisions of this Act, hunts, captures, possesses, trades or otherwise deals in a specimen of wild fauna and or flora without the appropriate permits shall be guilty of an offence and liable on conviction: (a) in respect of a specimen under the First Schedule, to a fine of five hundred thousand Naira (N500,000~USD1,400, at the rate of USD1.00 =NGN360, September 2018 average) or five (5) years imprisonment or both such fine and imprisonment*".

However, enforcement of this law is lacking. Akeredolu *et al*., (2016) states that the sale of ivory has been banned in Lagos since 2011, but corruption, a weak judicial system and light sentences undermine the effective application of this law.

The CITES Management Authority (MA) is in the Federal Ministry of Environment, Department of Forestry, and the National Environmental Standards and Regulations Enforcement Agency (NESREA) is charged with enforcement. Nosa Aigbedion, the Co-ordinator of the Lagos Office of NESREA stated that they are aware of the existing ivory markets and that there is an active ivory trade involving Chinese nationals (pers. comm., 27 September 2017). He also referred to two wildlife smuggling cases involving Chinese nationals arrested with ivory in 2014 and 2016, respectively. Some products seized by other State agencies such as the Nigerian Customs are handed over to NESREA; an example is the seizure of 71 ivory pieces (124 kg) on 22 July 2017 arriving at Lagos airport from Gabon (A. Abimbola, Cargo Department of Lagos International Airport, pers. comm., 27 September 2017).

In 2013, CITES Parties instituted a National Ivory Action Plan (NIAP) process under the direction of the Standing Committee in countries identified as being the most heavily affected by the illegal ivory trade and requiring strengthened controls to combat this trade. Parties are selected for attention from analysis of ivory seizure data held in ETIS (CITES, 2013). In Central and West Africa, Cameroon, Congo, Democratic Republic of the Congo, Gabon and Nigeria are all Category B Parties (formerly called "countries of secondary concern") and have been requested to develop NIAPs. The implementation of NIAPs by a number of countries in Central Africa is currently under way in accordance with recommendations adopted by the CITES Standing Committee in March 2013 (Nkoke *et al.*, 2016). Nigeria is also implementing its NIAP, but its effectiveness is questionable given the open ivory market in Lagos, for example. In fact, Nigeria together with Malaysia, Mozambique and Viet Nam are now regarded as priorities for consideration under Category A (formerly called a "country of primary concern") owing to their links to the greatest illegal ivory trade flows over the period under examination (Milliken *et al*., 2018). Nigeria's move from a Category B country in the CoP16 and CoP17 analyses to a Category A country shows its position has worsened since the last CoP.

Retail Outlets and Prices for Worked Ivory

Retail Outlets and Items

During the survey period in 2018, ivory items were observed mainly in the Lekki market (Lekki Peninsula) and in the curio market located at the Eko Hotel and Suites on Victoria Island. No items were seen in the other hotels visited or at the airport, as was also the case in Lagos during the 2012 survey (Martin and Vigne, 2013) and the 2015 survey (Akeredolu *et al.,* 2016).

Two out of 51 stalls at the Eko Hotel and Suites displayed six ivory items, four necklaces as well as two bracelets which were on sale for NGN35,000 (USD96) and NGN25,000 (USD69), respectively. One of the vendors said the market was seasonal with more items displayed during the months of December and January to coincide with holidays and the presence of tourists, mainly from Europe and Asia.

Place	No. of outlets	No. outlets with ivory	No of items
Eko Hotel/Suites curio centre	51	2	6
Lekki market	43	19	~13,752
Total	**94**	**21**	**~13,758**

Table 1. No. of ivory items in the Lekki market and Eko Hotel and Suites, Lagos, Nigeria, July 2018.

The Lekki market, by contrast, had more outlets and ivory items displayed. The market itself comprises several sections specialising in different items (clothes and footwear, food and vegetables), with the curio market (paintings, stuffed animals and other products, wood and ivory carvings) located in the centre. Of the 43 outlets selling souvenirs, 19 were selling ivory products ranging from rings to carved tusks. In total, approximately 13,752 ivory items were counted, with smaller items (<10 cm weighing <100 g) accounting for over 80% of the total. Many other items were hidden under the stalls, as indicated by the vendors and observed in some cases, and their numbers were not included in the total. The number of ivory items was therefore concentrated in fewer outlets, an average of 724 per outlet, compared to the 14,200 items spread over 33 outlets in 2013 (Martin and Vigne, 2013), giving an average of 430 items per outlet. Some outlets had fewer than 400 ivory items and others as many as 2,000 pieces. Tables 1 and 2 give a breakdown of the number of items seen in the different markets and the type of products at the Lekki market.

Prices of Ivory Items

Prices were generally given in Nigerian Naira (NGN) and varied according to the size of the item, the quality of carving, the nationality of the buyer (lower prices were asked of Nigerian nationals, and higher prices from foreigners, especially non-Africans), and the bargaining power of either the buyer or the vendor.

The prices ranged from as low as NGN1,000 (~USD3) for a ring to NGN540,000 (~USD1,500) for a two kilogrammes-carved tusk. Table 3 shows the buying prices of ivory items seen at the Lekki market in July 2018.

Ivory item	Approximate percentage
Necklaces	20
Bracelets	17
Pendants	15
Earrings	11
Rings	10
Chopsticks	7
Name Seals	6
Rosaries (Muslim and Christian)	5
Animal figurines	3
Human figurines	3
Whole tusks (carved and polished)	2
Others (cigarette holders, combs, etc.)	1
Total	**100**

Table 2. A breakdown of the different types of ivory items in the Lekki market, Lagos, Nigeria, July 2018.

Ivory item	Size/Description	Av. price (NGN)	Av. price (USD)
Necklace	small beads	14,000	39
	large beads	33,000	92
Bracelet	~1 cm width	12,500	35
	>1 cm width	25,000	70
Pendant	3–5 cm	25,000	70
Earring	pair	9,000	25
Ring	5–10 g	3,000	8
Cigarette holder	3–5 cm	25,000	70
Chopstick	pair	30,000	83
Name seal	round base (personal): 2x7 cm	60,000	167
	square base (business): 3x7 cm	90,000	250
Rosary	Muslim+Christian	20,000	56
Animal figurine	1–10 cm, ~200 g	83,000	230
	10–30 cm, ~700 g	160,000	445
	>30 cm, ~ 1 kg	215,000	600
Human figurine	1–10 cm, ~200 g	145,000	402
	10–30 cm, ~700 g	250,000	690
	>30 cm, ~1 kg	390,000	1,080
Carved tusk	<2 kg	325,000	900
	>2 kg	540,000	1,500
Polished tusk	<2 kg	252,000	700
	>2 kg	430,000	1,200
Carved tusk base	<1 kg	290,000	805
Polished tusk base	<1 kg	180,000	500
Polished tusk tip	~300 g	160,000	450
Comb	10–20 cm	18,000	50
Key holder	2–5 cm	20,000	56

Table 3. Prices of ivory items in the Lekki ivory market, Lagos, Nigeria, September 2018. *Exchange rate: USD1=NGN360*

Compared to the 2012 survey (Martin and Vigne, 2013), prices have increased over time. Some vendors used a mix of bones and wood with ivory, while others were made wholly of animal bone and sold as ivory, though in very small quantities.

Association of Ivory Sellers

A number of outlets had posted on their glass cabinets the by-laws of an association of ivory sellers known as the African Art Dealers' Association. Upon discussion with some vendors, it became apparent that this association, which was specific to Lagos, was created roughly ten years earlier (before the 2016 law made trading ivory explicitly illegal), but was not functional, and as of July 2018, most vendors (about 95%) were unaware of its existence nor did they adhere to the by-laws. According to one of the few vendors who knew about the association, there was a register for membership but given that adherence was not mandatory, they found no interest in being part of the association and membership had declined as a result.

Fines set out by the association for violating any article of the by-laws range from between NGN10,000 and NGN20,000 (~USD27–56)—less than the price of a pendant. Some of the articles cover the sale of fake rhino horns and other fake products, as well as the sale of ivory items by non-members. Further discussions with some NCF and NESREA personnel, and the NIAP Focal Person (CITES MA) however, showed that the association was not known within government circles. According to a CITES MA spokesperson (pers. comm., 17 September 2018), "*the Association is not documented and registered by the Federal Government therefore it does not exist … and none of the vendors had a permit from the CITES MA or any other authority to trade in ivory items nationally or internationally*". Hence, vendors are clearly contravening Article 2, Sub-section 3 (a) of the *National Wildlife Species Protection Act* of 2016, which states that such trade is permitted only in exceptional circumstances, accompanied by valid permits. All vendors in the Lekki market are consequently operating illegally, however many of the vendors interviewed were aware of the illegality of the trade but did not seem to be concerned.

Carving workshops

No carving workshop was observed in the curio market of Eko Hotel and Suites. By contrast, 11 out of the 43 outlets selling souvenirs in Lekki market had carvers working mostly with wood and animal bone, and one was seen working on an ivory piece (a carving of an elephant). The outlet belonged to a Malian national and the carver was also from Mali. Two other workshops located behind the vegetable section were seen processing ivory pieces, bracelets and rosaries; the first had two carvers reportedly from Guinea; the two carvers at the second workshop were reportedly Nigerian. Not many pieces were displayed but discussions with an informant revealed that some pieces were kept in metal boxes behind the carvers. Unfortunately, it was not possible from discussions and observations to ascertain the proportion of ivory items that were carved locally and those imported from elsewhere, but it was clear that carving activities were being carried out in the Lekki market.

Recent studies in Central Africa that focused on Cameroon, Central African Republic, Congo, the Democratic Republic of the Congo and Gabon found that most worked ivory markets with ivory pieces targeting the Asian market had declined substantially (Nkoke *et al.*, 2017). However, in Lagos there is still a high degree of targeted processing of ivory destined for the Asian market, as was apparent from the quantity of chopsticks, name seals and other products for sale in the Lekki market during the present survey. This follows the same pattern seen in the 1999 study (Martin and Stiles, 2000), where declines of worked ivory targeting Asian markets were evident in other countries while a marginal rise was observed in Lagos from 1989.

Fig. 1. Principal source countries (grey) for ivory entering Nigeria.

Profile of actors in the trade

The profile of the ivory trade actors varies across the trade chain and related activities. About 85% of vendors and other middlemen in the Lekki market were Nigerians, with a mixture of other African nationals, including individuals from Mali, Senegal and Guinea.

According to Martin and Stiles (2000), most of the buyers were Nigerian traders, but, on occasion, some Chinese railway repair workers came to buy products. During the 2018 survey, however, many buyers observed were East Asian nationals, including 13 buyers seen in the market (nine males and four females), 10 Chinese and three Japanese nationals (all females), which is a significant shift from earlier surveys. This is not a surprising development given that China is the main ivory market globally and the number of Chinese immigrants in Africa has risen sevenfold over less than two decades, with the African continent said to be home to more than 1.1 million Chinese immigrants in 2012, compared with fewer than 160,000 in 1996 (Zhou, 2017). It is believed that Chinese nationals are running ivory processing operations in Nigeria and exporting the worked products by courier to Asia. According to EIA (2017), increased enforcement effort and the high-profile arrests and prosecutions of Chinese nationals involved in ivory trafficking in one of their former sourcing areas of Tanzania, was one of the reasons for their move to Nigeria because of purported lax enforcement and corruption in that country. In an assessment of ETIS data, Nigeria ranked first amongst 25 African nations that had been identified as countries of origin or export for commercial consignments of worked ivory products moving from Africa to Asia; in total, 51 out of 214 seizures (24%) of ivory products (ca. one tonne), involved Nigeria (CITES, 2017).

Akeredolu *et al.,* (2016) reports that most of the customers encountered during the 2015 survey were Chinese nationals who came to Nigeria to buy ivory with the intention of reselling items at higher prices in other countries, in Asia in particular, where there is a ready market for ivory products. It was reported that communication between the local traders and their Chinese customers was mainly in Pidgin English, with a few of the traders speaking Chinese with their Asian customers.

In the open markets, Chinese buyers tend to prefer smaller objects, especially jewellery, name seals and chopsticks that can be easily transported back to China in their personal luggage (Martin and Vigne, 2013).

The source and movement of raw ivory

With so few elephants found in Nigeria, given the quantity of ivory on sale and seizure information linked to Nigeria, it is highly unlikely that Nigeria itself is a viable source of raw elephant tusks. In fact, illegal exports of raw ivory from Lagos to Hong Kong were forensically examined and found to comprise ivory from Congo, Gabon, Central African Republic and Cameroon (Wasser *et al*., 2015). The ETIS report to CITES CoP16 reported that "*Nigeria was the destination for nearly one tonne of ivory seized in Cameroon in 2009 and 1.3 tonnes of ivory seized in Kenya in 2011*" (Milliken *et al*., 2012), and Nigeria continues to depend on ivory from other parts of Africa, especially neighbouring Central African countries.

According to the vendors, other sources of ivory were the Central African countries of Central African Republic, Congo, the Democratic Republic of the Congo (DRC) and Gabon, and Togo in West Africa. The MIKE (Monitoring the Illegal Killing of Elephants) report on poaching for CoP18 shows that both Central and West Africa mark another year with unsustainable levels of poaching well above the 5% mark where population decline characterises the situation in the two sub-regions that supply most of the ivory to Nigeria's ivory trade (T. Milliken, *in litt.,* 20 February 2019).

Unadjusted prices for raw ivory in Lagos during a previous study were found to range from NGN3,200–4,800/kg (USD24–36/kg), depending on the size and quality of the piece, with USD30/kg regarded as the average benchmark price (Courouble *et al.*, 2003). In Cameroon, there has been a consistent increase in the price of raw ivory for every weight class in successive surveys, with a five-fold price increase between 2007 and 2015 for small tusks (<5 kg) ranging from between USD52–73 in 2007 and USD262–284 in 2015 in Yaounde and Douala, respectively (Nkoke *et al.,* 2017).

During the 2018 survey, a pair of raw tusks of <5 kg was found in the outlet of the aforementioned Malian. The source of the ivory was reported to be Cameroon and the going price was NGN230,000 (~USD640) per kg, a price which seems to be untypical. Apart from Cameroon, other Central African source countries were also reported in the 2012 survey (Martin and Vigne, 2013). The regional movement of ivory has not changed much during the last decades, with traffickers using the same traditional routes, roads, coastal zones and rivers, with two basic scenarios prevailing: one involves

Cameroon and Gabon, with constant movements of poached ivory across the border of northern Gabon into southern Cameroon, and then westward by road to coastal ports in Cameroon and Nigeria (Nkoke *et al*., 2017). Some seizure information such as that reported by the Nigerian Customs, e.g. 71 ivory pieces (124 kg) arriving from Gabon and seized on 22 July 2017 at Lagos airport, confirm such routes. Another route is from north-west Congo, south-west Central African Republic (CAR) and north-east Cameroon, all going either to Yaounde or Douala or into Nigeria (D. Stiles, *in litt.,* 13 January 2019). Another highly probable source of raw tusks is leakage from government-held stocks in West and Central Africa given the poor security and management of seized ivory.

According to TRAFFIC's wildlife trade information database consulted in September 2018 and covering the period between 12 March 2017 and 1 August 2018, over 8.2 t of tusks or raw ivory pieces were seized in Nigeria or in other places with the consignments linked to Nigeria in terms of the known trade chains. Some of the places cited include Cameroon and Côte d'Ivoire in Africa, and Hong Kong SAR, Malaysia, Singapore, Thailand and Viet Nam in Asia, clearly showing Nigeria as a major exit point and a crucial link between Africa and Asia.

Government-held ivory stocks

Similar to the law enforcement structure in Nigeria, the management of government-held ivory stocks is an overlapping and conflicting responsibility between NESREA and the Nigerian CITES MA. According to a spokesperson from the CITES MA for Nigeria (pers. comm, 28 September 2017), NESREA has the remit to store seized wildlife products, but there are no clear links to the CITES MA and this is a source of confusion for the management of wildlife products, particularly ivory. The spokesperson went further to say that ETIS forms in Nigeria are not filled out at the point of seizure, but centrally at the federal level by NESREA. The impact of this approach on traceability and leakage is obvious, especially if one considers that ivory is also not marked, and is a breach of CITES recommendations as set out in Resolution Conf. 10.10 (Rev. CoP17).

A spokesperson from NESREA in Lagos (pers. comm., 27 September 2017) affirmed that although NESREA is responsible for wildlife law enforcement and for the collation and management of national ivory stockpiles in Nigeria, he had never heard about ETIS as an official CITES system for tracking illegal trade in ivory nor had he heard of the NIAP.

Other law enforcement agencies do transfer seized wildlife products to NESREA, but there are no clear mechanisms for doing so. For example, seizures carried out by Customs at Lagos airport were transferred to NESREA using simple "Handing-over Forms" registered at the level of the Customs but not tracked at the level of NESREA to check for consistency and to ensure that the wildlife products handed over are registered correctly. Such "Handing-over Forms" are also used by NESREA in Lagos to transfer ivory and other wildlife products to the national stockpile in Abuja.

As stated in the Nigeria NIAP Report to CITES in April 2016 (Anon, 2016), an audit of the national stockpile in Abuja was carried out in 2016 covering the period March 2010 to January 2016, and it is estimated that there were about 3,318 ivory specimens (raw tusks, semi-processed and processed ivory items), weighing about 1,173 kg being held in a government store in Abuja. The weight for all the specimens was not reported, hence the total weight reported here is not exact, but it gives a general picture of the ivory stockpile in Nigeria. According to the CITES MA for Nigeria, there has been a net increase in the quantity of ivory in the national stock given that several seizures were carried out in Nigeria in 2017 and 2018 (pers. comm., 16 September 2018) but no inventory has been undertaken to get the exact quantity.

Conclusions

In line with previous market surveys, the ivory market in Lagos, Nigeria, is still thriving, with the Lekki market the main sales point. This market has been operating illegally and with impunity for decades with the full knowledge of the law enforcement authorities.

This survey provides a snapshot of the estimated quantity and weight of ivory items observed when compared to the comprehensive survey of 2012 by Martin and Vigne (2013), and the level of trade is not conclusive. The fact that there is a robust market for worked ivory items, however, and considering the seizure information with links to Nigeria, and Lagos in particular, the country not only plays a role as one of the major sources of worked ivory in Africa, but is also an important hub for raw tusks from at least two African sub-regions, notably Central and West Africa, and sometimes even as far away as East Africa. The ramifications are thus far reaching, negatively impacting elephant populations in those sub-regions and by inference, in Africa as a whole. China is pointed to as one, if not the major destination for both worked ivory products and raw elephant tusks, with large-scale exports of mainly raw ivory by Lagos-based high-level operatives (mainly Chinese) and worked ivory transported from Lekki and other markets by small-scale courier traders, including via mail/courier parcels (D. Stiles, *in litt.,* 13 January 2019). It will be interesting to see how the closure of the China's domestic markets announced on the last day of December 2017 impacts the direct trade between the two countries.

Increased law enforcement pressure was cited as one of the principal reasons for the documented decline in the quantity of ivory on open display in most Central African markets (Nkoke *et al*., 2017), the others being an increase in raw ivory prices, and a decline in elephant populations. Chinese nationals are buying up most of the tusks at prices that local carvers cannot compete with, (D. Stiles, *in litt.,* 13 January 2019). It is important for the Nigerian government to exert more law enforcement effort to discourage open trade in ivory items. It is also imperative for the Nigerian government to implement fully the CITES NIAP in order to check the illegal ivory trade in the country.

Recommendations

The following recommendations are proposed to address the continued and thriving ivory market in Lagos:

i. The Nigerian government and other stakeholders need to implement fully the provisions of the *National Wildlife Species Protection Act* of 2016, which bans and criminalises the illegal trade of elephant products in that country.
ii. Action needs to be taken to close down the Lekki ivory market completely through a strategic approach including education targeting vendors and potential buyers from Nigeria and China through awareness campaigns, behaviour change communication and other communication strategies; scaled up and sustained law enforcement efforts; and promotion of alternatives, especially animal bone and wood for the production of artefacts. CITES Parties may wish to consider the option of introducing trade sanctions in the case of Nigeria's failure to close down its ivory market.
iii. As a priority, efforts should be made to build the capacity of wildlife and other law enforcement authorities, amongst others, in relation to the conservation of elephants, CITES processes, law enforcement procedures, identification of products and other related tools.
iv. Promotion at the national level in Nigeria of inter-agency co-operation, collaboration and communication, especially between the CITES MA and NESREA as well as other law enforcement agencies (Customs, police, airport/port authorities, coast guards, prosecution services, etc.), clearly defining their different roles and responsibilities and monitoring implementation.
v. At the regional level, Nigeria and its CITES MA, as a member of ECOWAS (Economic Community of West African States) should seek collaboration both within ECOWAS and its recently agreed law enforcement action plan, and with its eastern neighbours of Central Africa, and collaborate regionally with COMIFAC (Central African Forest Commission) on their strategy to combat wildlife crime as a whole.
vi. The Nigerian government should work more closely with key airlines known to be used in the transportation of wildlife products including ivory.
vii. Greater collaboration with Cameroon is needed to establish joint coastguard/border patrols at land and sea points of entry to target illegal wildlife trade.
viii. In view of the apparent key role and involvement of Chinese nationals in illegal buying and trading of ivory in and from Nigeria, the governments of Nigeria and China should consider closer bilateral collaboration to implement the agreements pertaining to illegal wildlife trade reached in Beijing in September 2018 under the Forum on China-Africa Cooperation (FOCAC) Beijing Action Plan (FOCAC, 2018). Such bilateral collaboration should include joint training of government law enforcement agencies (see TRAFFIC, 2019) as well as consider working towards a mutual legal assistance treaty (MLAT) between both countries.
ix. Effectively implement the NIAP as requested by CITES, broadly covering legislation, prosecution, intelligence and investigation actions, co-operation at the national and international levels, law enforcement and operation actions, communication etc. In addition to the NIAP implementation, the Nigerian authorities also need to increase reporting of ivory seizure cases to ETIS for a better analysis of their law enforcement actions.
x. Put in place an effective ivory stockpile management system according to CITES Resolution Conf. 10.10 (Rev. CoP17, https://www.cites.org/sites/default/files/document/E-Res-10-10-R17.pdf).
xi. The minimum standards developed by TRAFFIC must be applied to help guide ivory stockpile management. These include information on the source of ivory, how to measure and mark each piece of ivory in the stockpile, centralisation of the ivory in a national government stockpile, security issues, and procedures for audits and periodic verification (Ringuet and Lagrot, 2013).

Forest elephant *Loxodonta africana cyclotis*, lone male in early morning mist, Dzanga Bai, Dzanga-Ndoki National Park, Central African Republic, one of the source countries of ivory reported by the vendors in Lekki market, Lagos.

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A rapid assessment of the trade in Saiga Antelope horn in Peninsular Malaysia

Report by Lalita Gomez and Kanitha Krishnasamy

Introduction

Saiga Antelopes *Saiga tatarica* are facing a perilous future as their numbers in the wild continue to decline. The taxonomy of the Saiga Antelope has been subject to several changes over the years and in the past populations were split into two distinct species i.e. *S. tatarica* and *S. borealis*. However, based on the current IUCN Red List of Threatened Species, the Saiga Antelope treated as a single species is now split into two sub-species: fragmented populations of *S.t. tatarica* occurring in Kalmykia in Russia and Kazakhstan, and *S.t. mongolica* (equivalent to *S. borealis*) occuring in western Mongolia (IUCN SSC Antelope Specialist Group, 2018). Their original range has greatly reduced, with populations in Ukraine and China now extinct; in Russia, they occur in the steppes north-west of the Caspian Sea in Kalmykia and in parts of the Astrakhan Region; in Kazakhstan, they can be found in the Ural region, Betpak-dala and Ustyurt; migrating populations are no longer seen in Turkmenistan and those reaching Uzbekistan have declined; and in Mongolia, populations are found only on the Shargiin Gobi and Huisiin Gobi, the Mankhan area and Dorgon steppe (IUCN SSC Antelope Specialist Group, 2018).

With herds historically numbering in the millions, the global population of the Saiga Antelope is said to have declined by over 95% since the early 1990s due to hunting and exploitation for trade (Milner-Gulland *et al.*, 2001; Mallon, 2008; IUCN SSC Antelope Specialist Group, 2018). Although the species could recover its numbers rapidly, in more recent times, Saiga Antelope populations, particularly in Kazakhstan and Mongolia, also plummeted due to disease outbreaks (Frankfurt Zoological Society *et al.*, 2016; Saiga Conservation Alliance, 2017). The dramatic decline in wild populations resulted in the species being assessed as Critically Endangered by the IUCN Red List of Threatened Species in 2002 (Mallon, 2008). As of January 2018, the global population of Saiga Antelopes was estimated at 164,600–165,600 (IUCN SSC Antelope Specialist Group, 2018).

The Saiga Antelope is coveted for its horns which are used in traditional Asian medicine and its meat is consumed for food (Milner-Gulland *et al.,* 2001; Lishu *et al*., 2007; Mallon, 2008; Theng *et al.,* 2017; Lam, 2018). As the horns are an exclusive (and permanent) feature of the male Saiga, selective hunting to supply this demand has skewed the sex ratio among wild populations, making breeding and ultimately species survival more difficult. If unmanaged, the trade in Saiga Antelopes could contribute to the extinction of an already imperilled species. In South-east Asia, this trade is most prevalent in Malaysia and Singapore, where Saiga Antelope horn is promoted in medicine for its "cooling effect" despite limited evidence of its efficacy (Chan, 1995; Theng and Krishnasamy, 2017). During the 1990s in particular, large quantities of Saiga horn were imported to Malaysia and Singapore (S. Broad, pers. comm, April 2019).

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Saiga Antelopes *Saiga tatarica*.

During a survey on the availability of bear bile products in traditional Chinese medicine (TCM) outlets across Peninsular Malaysia in 2018, incidental observations of Saiga Antelope horn products were noted. It appeared to be one of the most common medicinal products derived from wildlife to be observed in trade, alongside bear bile pills and porcupine bezoar. This paper presents findings from the survey on Saiga Antelope horn availability in Peninsular Malaysia and provides an insight into its current open trade.

Background

International governance

In 1995, the Saiga Antelope was listed in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to ensure strict regulation of the international trade in Saiga parts and derivatives. Continued declines however led to a hunting ban in all range States, implemented during different periods between 1999 and 2014 (Theng and Krishnasamy, 2017). This effectively means that no legal horn export has been permitted from range countries since then. Trade however is permitted by some non-range States from stocks acquired prior to these bans, with a valid permit. In December 2018, Mongolia submitted a proposal for consideration by CITES Parties at the 18th meeting of the Conference of the Parties, to transfer *Saiga tatarica* from CITES Appendix II to Appendix I to prohibit all international commercial trade. The proponents of the proposal explain that this is intended to help ensure that international commercial trade will not contribute to further declines, and to help range, transit and importing CITES Parties to combat any illegal trade where newly hunted Saiga Antelope products may be laundered through stockpiles (CITES, 2019).

The Saiga Antelope is also listed in Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS, or the Bonn Convention). A CMS Appendix I- and II-listing obligates Parties to, *inter alia*, prohibit the taking of Appendix I species (unless in exceptional cases) and conclude international agreements which would benefit Appendix II species. To this end, a Memorandum of Understanding (MoU) concerning the conservation, restoration, sustainable use of Saiga

Antelope *Saiga* spp. was adopted in September 2010 (CMS, 2010). Although not a Party to CMS, Malaysia periodically provides reports to the Convention, which contributes to the Medium-Term International Work Programme (MTIWP) for the Saiga Antelope.

Legislation and regulation in Peninsular Malaysia

In Peninsular Malaysia, trade in Saiga Antelope is regulated under the *Wildlife Conservation Act 2010* (WCA), which permits trade through a licensing system, regulated by the Department of Wildlife and National Parks Peninsular Malaysia (DWNP). The DWNP also controls the management and distribution of stocks that are permitted for trade. Any violations can incur a minimum fine of MYR20,000 (USD5,000) or a maximum fine of MYR50,000 (USD12,500), or imprisonment of not more than one year, or both. Any import and export violations are also covered under the country's CITES implementing legislation, the *International Trade in Endangered Species Act 2008* (INTESA). Anyone found guilty of importing or exporting Saiga Antelope parts or products without a valid licence is liable to a maximum fine of MYR1million (USD250,000), or imprisonment to a term not more than seven years, or both. If the violation involves a corporate body, fines can reach MYR2million (USD500,000).

The trade in traditional medicine (TM) is further governed in Malaysia by at least three other laws. The *Traditional and Complementary Medicine Act 2016* regulates all traditional and complementary medicine practitioners and services. The Traditional and Complementary Medicine Council is the leading body governing the implementation, regulation and enforcement of the Act. Anyone found guilty of violating the Act can be liable to a fine of MYR30,000 (USD7,500) or two years' imprisonment for the first offence. Those found not legally registered as a practitioner can also be fined MYR50,000 (USD12,500), or imprisoned for up to three years, or both, and may also be prohibited from registering as a practitioner for a period of two years upon conviction. The *Sale of Drugs Act 1952 (Control of Drugs and Cosmetics Regulation 1984)*, requires compulsory registration of all pharmaceutical products, including TM products containing wildlife derivatives. Products must have adequate records and labels; applicants must trace all steps of production and distribution and keep these records for one year beyond the expiry date. The general penalty for offending individuals is a maximum fine of MYR25,000 (USD6,250) and/or imprisonment for up to three years for the first offence, and a maximum fine of MYR50,000 (USD12,500) and/or five years' imprisonment for subsequent offences. Offending companies are liable to a fine of up to MYR50,000 (USD12,500) for the first offence, and MYR100,000 (USD25,000) for subsequent offences.

Methods

Incidental observations of Saiga horn products were noted during a bear bile survey across outlets in Peninsular Malaysia between April and May 2018. Open availability was recorded and information such as prices and stock were gathered opportunistically through conversations with traders, though the actual volumes in trade were difficult to record. All observations of trade claimed to be of, or to contain Saiga horn derivatives, were assumed to be genuine. This is in accordance with the WCA, which states in Section 3: "part or derivative means any

States	No. of Shops	Types of Products	Price (whole horn) MYR	Price (whole horn) USD
Johor	30	horns (whole), shavings, powders	2.67–12.00/g	0.65–2.93/g
		bottled Saiga water, bottled Saiga tea	-	-
Kedah	11	horns (whole), shavings, powder (capsule)	8.00–18.67/g	1.95–4.55/g
Kelantan	11	shavings, powder	-	-
Melaka	28	horns (whole), shavings, powder	85.33/g	20.81/g
			20.00–40.00/g	4.88–9.76/g
Negeri Sembilan	9	horns (whole), shavings, powder	0.56/g	0.14 g
			120.00/g	29.27/g
Pahang	13	shavings, powder	-	-
Penang	12	horns (whole), shavings	6.67-8.00/g	1.63-1.95/g
			208.00-224.00/g	50.73-54.63
Perak	33	horns (whole), shavings, powder, powder mixed with pearl powder (capsule), concoction	4.00–9.00/g	0.98-2.20/g
Perlis	3	shavings, concoction	-	-
Terengganu	4	shavings, powder	-	-

Table 1. TCM outlets with Saiga Antelope horn products for sale by State in Peninsular Malaysia, April–May 2018. *- = prices not recorded; Note: observations from the State of Selangor and Federal Territory of Kuala Lumpur are not included here as trade information was not recorded in a consistent or standardised manner, and therefore not included for analysis. Saiga horns have however been recorded in trade in these two location in previous surveys of TCM outlets in 2006, and rapid checks on selected shops in 2018 confirms this. Some outlets may have more than one form of Saiga horn product available. Price information is denoted based on offers by traditional medicine stores.*

Source	INTERNATIONAL TRADE TO MALAYSIA Importer MY (kg)	Exporter (kg)	INTERNATIONAL TRADE FROM MALAYSIA Exporter (MY) (kg)	Importer (kg)
Pre-Convention				
horns	1,582.09	2,904.24	608.12	717.12
Pre-Convention, wild				
horns	112.60	140.85	338.60	1284.30
Wild				
horns		80.10	374.34	374.34
derivatives		0.90		
Wild/Pre-Convention				
horns	50.00	59.00		
Seized				
derivatives				120.05
horns				0.02
Unknown				
horns	302.60	30.00	948.40	
Total	2,047.29	3,215.09	2,269.46	2,495.83

Table 2. Summary of import/exports of Saiga Antelope horns traded with Malaysia (MY), 1995–2017. *Source: CITES Trade Database.*

substantially complete or part or derivative of wildlife, in natural form, stuffed, chilled, preserved, dried, processed or otherwise treated or prepared, which may or may not be contained in preparations, and includes anything which is claimed by any person, or which appears from an accompanying document, the packaging, a label or mark or from any other circumstances, to contain any part or derivative of wildlife". Records of trade data extracted from the CITES Trade Database are also included here to provide records of international trade of Saiga Antelope horns involving Malaysia. Results presented also include comparison with information gathered during a TRAFFIC survey of TCM outlets in Malaysia in 2006 (von Meibom *et al.,* 2010).

Results

Market survey

Of 228 TCM outlets surveyed in 10 States across Peninsular Malaysia, 154 (67.5%) were found to be openly selling Saiga Antelope horn products (Table 1). Horn shavings were the most common Saiga Antelope product observed in trade, sometimes packaged with herbs. Whole horns were available in some States, although a couple of traders reported that genuine Saiga Antelope horn is hard to come by and that some TCM traders use the horns of goat, cow or buffalo as substitutes. Bottled water, a "tea" reported to contain Saiga Antelope horn, and a bottled concoction reported to consist of Saiga Antelope horn and pearl liquid were also offered for sale.

TRAFFIC's survey of 111 TCM outlets in five locations across Peninsular Malaysia in 2006 found 109 outlets (98%) with Saiga Antelope horn products or derivatives for sale (von Meibom *et al.,* 2010). Shavings were the most common product available then (recorded in all 109 TCM outlets) followed by horns (whole)—over 800 horns were recorded in 68 outlets.

The price for Saiga Antelope horn during the present survey varied quite considerably in each State. The highest price was recorded in Penang with the maximum value quoted at ~MYR224/g (USD55/g), followed by Negeri Sembilan with ~MYR120/g (USD30/g). Negeri Sembilan also had the lowest price recorded with MYR280/500 g (~MYR0.56/g), followed by Johor with ~MYR2.7/g. The large differences in price could be an indication of the authenticity of the product (with lower prices indicating the substitution of other animal horns). In comparison, prices recorded in 2006 ranged from a minimum of MYR1.6–8/g (USD0.40–2/g), indicating a significant increase over the 12-year period.

CITES trade data analysis

According to the CITES Trade Database, between 1995 and 2017 Malaysia imported an average of 2,631 kg of Saiga horn and exported 2,382 kg (Table 2). Countries and territories that reported importing Saiga horns from Malaysia were China, Hong Kong Special Administrative Region (SAR), New Zealand, Singapore and the USA, while countries and territories that reported exporting Saiga horns to Malaysia were China, Hong Kong SAR and Singapore.

No trade records were reported after 2015, and in the last decade since 2005, Malaysia's imports were generally low, accounting for about 16% of its total imports. Imports were mainly of horns from Singapore and Hong Kong SAR, which were reported as pre-Convention specimens. During this time, Malaysia also (re)exported horns to Hong Kong SAR and Singapore and derivatives to New Zealand and the USA.

Information from the CITES Trade Database also suggests that at least 10 shipments of Saiga Antelope horns and derivatives between 1998 and 2010 could have been seized in the USA and New Zealand, reported to have been exported from Malaysia. In two of these records at least, the origin of the item was reported to be China. These transactions are assumed to be seizures upon import, as the source of the trade is indicated by the Source Code "I", i.e "confiscated or seized specimens".

Discussion and Conclusions

Although Malaysia is not party to CMS, which monitors conservation (including trade) in migratory species such as the Saiga Antelope, in its report to the Convention in 2015, the DWNP reported that 119.45 kg of horns were imported from Kazakhstan, Singapore and Hong Kong SAR that were declared as pre-Convention stocks (CMS, 2015). A further 10.8 kg of shavings and 365.5 kg in the form of powder/slices was also reportedly imported. The period of this import was unreported.

The DWNP maintains a database of registered dealers through its licensing system. However, the number of dealers permitted to trade in Saiga and the volume/stockpile of Saiga horns and derivatives is unknown. Permitted trade volumes are based on a trader's application for a dealer's licence, and all sales must be recorded in the dealer's stock book (DWNP pers. comm. to K. Krishnasamy, October 2018). It is not clear how stocks are regulated or if stocks may have originated from illegal imports. At the 66th meeting of the CITES Standing Committee (SC66 Doc. 52) (CITES, 2016), it was reported that one seizure of unknown origin took place in Malaysia in 2012 consisting of horn cuttings

and medicinal products, and resulted in the prosecution of three individuals. CITES trade data reveal a further 10 records that might be seizures implicating Malaysia as a transit country in the international trafficking of Saiga-related products, with the majority of those occurring from 2006–2010. A 2016 study of Singapore's international trade in Saiga revealed that the legal import of horns had declined by 99% over the previous decade, yet vast quantities of horns, reportedly from stockpiles, were still being exported to Hong Kong SAR, China and Malaysia (Theng *et al.,* 2017). CITES trade data from 1995–2015 revealed that Singapore was the world's largest (re)exporter of Saiga horns, surpassing those from Saiga range countries from where horns were also imported by Malaysia (Theng and Krishnasamy, 2017). Von Meibom *et al*. (2010) further concluded that Saiga horns were illegally being exported from Malaysia although the volume and significance of this trade was unknown.

This study confirms an active trade in Saiga Antelope horns and derivatives in Peninsular Malaysia. While trade is permitted, it is unclear what proportion of this trade is occurring in accordance with regulations, or otherwise, or indeed whether the products are always genuine. The discrepancies in trade data and the lack of information on stocks in the country—either quantities held by traders, those maintained in government custody and those privately-held, if any—make it impossible to ascertain current legal stocks permitted for trade. More comprehensive reporting to CITES and CMS would facilitate this. A detailed study on the stocks and consumption of Saiga Antelope horns in Malaysia would also provide better and more accurate insights into current consumption and demand patterns, to guide awareness raising and demand reduction-related activities, as appropriate. These efforts should be undertaken collaboratively between governments, NGOs and, importantly, with the traditional Chinese medicine dealers and practitioners in the country.

Shavings purported to be from Saiga Antelope horn, on sale in a traditional medicine outlet in Peninsular Malaysia in 2018.

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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 following section features a selection of seizures and prosecutions reported between October 2018 and mid-April 2019. Sources are cited at the end of each country/territory section. Readers are referred to the TRAFFIC website (https://www.traffic.org/news/) for regular updates on cases reported from around the world.

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 instrument 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.

BIG CATS

INDONESIA: On 27 February 2019, Falalini Halawa was sentenced to three years in prison and fined IDR100 million (USD7,000) for poaching a Tiger *Panthera tigris* (CITES I). The pregnant animal had been caught in a wire mesh, close to Bukit Rimbang Wildlife Reserve Bukit Batu (Rimbang Baling), an important habitat for Sumatran tigers.

Mongabay: https://bit.ly/2VnvDbE, 29 September 2018

NAMIBIA: On 14 March 2019, at Katima Mulilo Magistrates' Court, Tobolo Luwaile and Sindiiwe Manyando, both Zambian nationals, were each sentenced to three years in prison for possession of a Leopard *Panthera pardus* (CITES I) skin.

AllAfrica: https://bit.ly/2vj8tVi, 20 March 2019

SOUTH AFRICA: On 25 November 2018, police officers in North-West province intercepted vehicles transporting six Vietnamese nationals, two South African nationals and a haul of Lion *Panthera leo* (CITES II) bones and meat, Tiger *P. tigris* (CITES I) skins, and equipment suspected to be used for making lion and tiger bone glue. More lion and tiger carcasses and processing equipment were recovered from a farm where, it is reported, some 40 lions had been killed. A ninth person surrendered to the police.

Baomoi.com: https://bit.ly/2UvYJRG, 29 November 2018

ZAMBIA: On 15 November 2018, at Lundazi Subordinate Court, Derrick Nyirenda was sentenced to five years' imprisonment with hard labour after being found in possession of the skin of a Leopard *Panthera pardus* (CITES I).

On 19 February 2019, it was reported that James Zulu, Harrison Chongo and Mathias Muwowo had each been sentenced at Kalulushi Subordinate Court to five years' imprisonment with hard labour for the unlawful possession of a Leopard skin (CITES I).

Lusaka Times: https://bit.ly/2GvDxWY, 16 November 2018; https://bit.ly/2UQicBC, 19 February 2019

BIRDS

INDONESIA: In November 2018, 2,140 birds were seized at Merak port, Java; a consignment of 4,851 birds arriving from Lampung, Sumatra, bound for Java, was seized in Kota Serang; Sumatra; ca. 1,500 birds stuffed into plastic crates in the luggage compartment of a bus at Bakauheni Port, Sumatra, was confiscated.

On 3 December 2018, authorities seized over 8,000 birds during three incidents over a 10-day period. All the birds had originated from Sumatra, Indonesia, and were destined for sale in Java.

On 10 December 2018, over 3,000 birds were seized from two vehicles at Bakauheni, Lampung, including Sumatran Laughingthrush *Garrulax bicolor*, Crested Jay *Platylophus galericulatus*, Maroon-bellied Sunbird *Cinnyris lotenius*, Javan Myna *Acridotheres javanicus*, Greater Green Leafbird *Chloropsis sonnerati*, white-eyes Zosteropidae, prinias *Prinia* spp. and tailorbirds *Orthotomus* spp. The requisite documentation was missing.

All surviving specimens have since been released in Sumatran forests.

TRAFFIC: https://bit.ly/2XEXH7B, 3 December 2018

TURKEY: In January 2019, it was reported that Customs officials at Atatürk Airport, Istanbul, had seized more than 300 Grey Parrots *Psittacus erithacus* (CITES I) smuggled from the Democratic Republic of the Congo, en route to Iraq. Ten birds had perished, the surviving specimens were taken to a rehabilitation centre in Bursa province.

Anadolu Agency: https://bit.ly/2UzNyam, 9 January 2019

UK: On 10 January 2019, at Snaresbrook Crown Court, Jeffrey Lendrum was sentenced to imprisonment for three years. He was arrested in June 2018 by Border Force officials at Heathrow Airport as he attempted to enter the country from South Africa with 19 eggs of CITES-listed birds strapped to his chest. Lendrum has served time in prison for previous egg smuggling offences (see *TRAFFIC Bulletin* 23(1):30; 28(1):29).

Gov.uk: https://bit.ly/2Cehbak, 10 January 2019; BBC, https://bbc.in/2URuv0d, 10 January 2019

ELEPHANTS

The African Elephant *Loxodonta africana* is listed in CITES Appendix I, except the populations of Botswana, Namibia, South Africa and Zimbabwe, which are included in Appendix II; the Asian Elephant *Elephas maximus* is listed in Appendix I.

CAMBODIA: On 13 December 2018, at Phnom Penh Autonomous Port, authorities acting on information from the US embassy seized more than 1,026 tusks (3.2 t) hidden amongst marble in a container that had arrived from Mozambique and was unclaimed.

The Independent: https://bit.ly/2GvEPkM, 16 December 2018

CHINA: On 30 March 2019, Huangpu Anti-smuggling Bureau seized 2748 tusks (7.48 t) in a single enforcement action that comprised separate shipments seized from around the country and which involved some 20 suspects who had purchased the tusks in Nigeria and other African countries. The ivory had been misreported as timber.

China Daily: https://bit.ly/2J4CDDE, 15 April 2018

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◄ Almost 8 t of elephant ivory, a consolidation of separate shipments from around the country, was confiscated in a single enforcement action by Huangpu Anti-smuggling Bureau in March 2019.

CONGO: On 22 November 2018, at a court in Brazzaville, Leonard Beckou, Levi Bonaventure Lognangue, and Bienvenu Nsimbizoina from Democratic Republic of the Congo, and Farvin Abegou from Congo, were each sentenced to five years in prison and fined CFA5 million (USD8,500)—the highest sentences that can be imposed for wildlife crime in Congo.

The group was apprehended after being pursued over three days by tracking specialists after poaching four elephants to the south of Nouabalé-Ndoki National Park; reportedly they were planning to pursue their hunting activities claiming the tusks of the elephants they had killed were too small to cover the costs of the operation and to compensate for the risks they had undertaken.

In February 2019, at the Court of Ouésso, Jouanin Andoula and Michel Anoumzock were each sentenced to three years' in prison and fined CFA2 million (USD3,400) for killing an elephant. Andoula admitted that he had been hunting elephants for several years and had offered his services to shoot elephants to obtain ivory. Anoumzock owned the weapon used to poach the elephant; an elephant trunk and tail were recovered from his bags.

On 28 March 2019, at the High Court of Oyo, Cuvette, Congolese national Blandain Mefouta was sentenced to five years' imprisonment and fined CFA10 million (USD17,000) after being found in possession of four elephant tusks. He had reportedly activated a ring of poachers and provided them with ammunition, which resulted in elephants being poached in Odzala-Kokoua National Park.

On 4 April 2019, at the High Court of Owando, Cuvette, Congolese nationals Evoura Vianney and Ngoua Issoko Justin, and Kolon Koumaré from Mali, were each sentenced to three years in prison and fined CFA2 million (USD3,400) for possession of ammunition and six elephant tusks. Vianney was also ordered to pay CFA200,000 (USD340). The three were arrested in Odzala-Kokoua National Park.

Environment News Service: https://bit.ly/2GsAUVF, 30 November 2018; Agence d'Information d'Afrique Centrale: https://bit.ly/2DsGlU3, 19 February 2019; Eagle Network: https://bit.ly/2VjGB1S, March 2019; Groupe Congo Medias: https://bit.ly/2PrdoN0, 29 March 2019; First Mediac: https://bit.ly/2Du8U3s, 8 April 2019

INDONESIA: On 20 December 2018, Amiruddin Wansyah and Alidin Jalaluddin were sentenced to four years in prison for the killing of an Asian Elephant *Elephas maximus sumatranus* in East Aceh, Sumatra, and fined IDR100 m (USD6,900). Two others are sought.

Laboratory tests carried out on the elephant, found dead in June 2018 near Serbajadi Conservation Response Unit, indicated that the animal had been poisoned. The elephant was one of four tame elephants trained by forest rangers in Aceh to ward off wild elephant herds encroaching on farms and villages. The suspects confessed that they had given the animal fruit covered with poison, having initially intended to target another elephant with larger tusks.

Waspada medan.com: https://bit.ly/2Dw09FU; Mongabay: https://bit.ly/2Ppo2DS, 8 July 2018

NAMIBIA: On 9 April 2019, at Tsumeb Magistrates' Court, Johannes Bokoma Nashikaku, was fined NAD30 000 (USD2,000) or alternatively sentenced to three years' imprisonment. He was arrested in March in possession of two elephant tusks; the ivory and a vehicle were forfeited.

New Era: https://bit.ly/2DvHTwr, 11 April 2019

TANZANIA: On 19 February 2019, at Kisutu Court, Chinese national Yang Fenglan, together with two Tanzanian accomplices, was sentenced to 15 years in prison. Fenglan had been in custody since the three were arrested in 2015 on charges of ivory smuggling. Labelled the "Ivory Queen" she was charged with smuggling nearly 2 t of ivory, and for orchestrating an ivory smuggling racket.

Tuko: https://bit.ly/2ZrGEYy; Al Jazeera News: https://bit.ly/2Sbn5io, 20 February 2019

USA: Jewellery shop owner Victor Cohen, and salesperson, Sheldon Kupersmith, have been fined a combined USD210,000—the largest fine in California's history for the illegal sale of ivory. Some 300 pieces of elephant ivory were discovered at Carlton Gallery, in La Jolla, California, and at a warehouse. The duo was placed on probation for three years which, if violated, will result in a year in custody and an additional fine of USD100,000; they were also ordered to complete 200 hours of community service at San Diego Zoo.

NBC Universal: https://bit.ly/2DdL3Eh, 5 February 2019

VIET NAM: On 26 March 2019, Customs officials at Tien Sa Port, Da Nang, seized over 9 t of elephant tusks hidden in timber containers. Preliminary investigations indicated that the consignment was imported from Congo via Singapore and registered for a business in neighbouring Quang Nam Province. This is reported to be the largest-ever seizure of ivory on record (see also Other / multi seizures).

VN Express International: https://bit.ly/2VXIGxy, 28 March 2019

ZAMBIA: In February 2018, it was reported that Lubinda Lay had been sentenced at Lundazi Subordinate Court to six years' imprisonment with hard labour for the unlawful possession of three pairs of ivory tusks (and six months for the illegal possession of a firearm).

The Solwezi Subordinate Court recently sentenced Esther Malata to five years' imprisonment with hard labour for the unlawful possession of ivory (17 kg).

News Diggers Media Ltd: https://bit.ly/2URvHkx, 6 February 2019; Lusaka Times: https://bit.ly/2UQicBC, 19 February 2019

MARINE

CHINA: Authorities in Guangdong province are reported to have charged 11 people for smuggling 20,000 swim bladders of Totoaba *Totaaba macdonaldi* from the Gulf of California in Mexico and selling them in China where they are an ingredient in traditional medicine. The species is classified by IUCN as Critically Endangered.

BBC News: https://bbc.in/2GzfExt, 7 March 2019

CROATIA: On 6 February 2019, at Zagreb International Airport, two people were caught with suitcases containing tens of thousands of juvenile European Eels *Anguilla anguilla* (CITES II) or "glass eels". The specimens were placed in the care of a zoo.

South China Morning Post: https://bit.ly/2USMC6e, 8 February 2019

GERMANY: On 28 November 2018, authorities at Frankfurt Airport seized a consignment of 5000 juvenile European Eels *Anguilla anguilla* (CITES II) in luggage belonging to a Malaysian passenger who had boarded her flight to Viet Nam and evaded arrest. The eels were later released in the river Rhine.

On 2 February 2019, Customs officials acting on information seized 210,000 live juvenile eels from a former Chinese restaurant in Liederbach, Frankfurt am Main; the animals were recovered from one of several large water-filled basins; investigators also found packing material for the transport of the animals as well as thousands of dead juvenile eels. A rental vehicle, registered in a neighbouring country, belonged to a group under investigation for suspected involvement in juvenile eel smuggling. Three people—two Malaysian nationals and one Chinese national—were arrested. The seized live specimens were released in the river Rhine.

DW Akademie: https://bit.ly/2ViOPY1, 4 December 2018; Zoll: https://bit.ly/2DxYMqn, 5 February 2019

INDIA: On 6 March 2019, at Mumbai International Airport, a man bound for Kuala Lumpur was detained after 30 kg of dried seahorses *Hippocampus* spp. (CITES II) wrapped in plastic were found in his bag. The species are protected under Schedule I of the *Wildlife Protection Act 1972*.

DNA India: https://bit.ly/2Zvj0u3, 8 March 2019

MALAYSIA: In October 2018, three Philippines nationals were sentenced in Tawau Sessions Court for possession of Green Turtle *Chelonia mydas* (CITES I) parts. Junaidi Umarati was imprisoned for three years and fined MYR50,000 (USD12,000) in default of a year's imprisonment after being found with 92 kg of turtle shell, scales and tails in Sisipan waters off Semporna district, Sabah, in August 2018. Tambisan Pagal and Tambulang Tambisan were sentenced to prison for three years and each fined MYR100,000 (USD24,000) for hunting and killing Green Turtles. They were ordered to serve another year in prison if they failed to pay the fine.

On 18 February 2019, a further three Philippines nationals were each sentenced to two years in prison and fined MYR60,000 (USD14,500) for possessing six Green Turtle shells from specimens seized in waters off Ligitan Island. The trio will spend another year in prison if they fail to pay the fine.

The Star: https://bit.ly/2GDJ1A8, 3 October 2018; https://bit.ly/2KZ3kvZ, 29 October 2018; https://bit.ly/2vguzaN, 18 February 2019

NEW ZEALAND: On 5 December 2018, at Porirua District Court, Ruteru Sufia was sentenced to 18 months' imprisonment after pleading guilty to taking 366 abalones *Haliotis* spp. from Makara beach, including undersized specimens. The daily limit in the area is 10 per person and the minimum legal size is 125 mm. His vehicle and gear were forfeited, and he was banned from fishing for three years.

Newsie (New Zealand): https://bit.ly/2GtiFQ0, 6 December 2018

NORTH MACEDONIA: On 11 April 2019, police detained four men, including two Chinese nationals, who were transporting 60 kg of juvenile or glass European Eels *Anguilla anguilla* (CITES II) to Skopje's International Airport; the live cargo was bound for Kuala Lumpur. The suspects had allegedly purchased the eels in Bulgaria for a buyer in Malaysia. A Customs official is accused of granting the men a free pass into the country from Bulgaria.

Star Tribune: http://strib.mn/2GxPGdI, 11 April 2019

SOUTH AFRICA: On 14 November 2018, authorities seized over 4,000 dried and frozen abalones from 10 chest freezers in a house in Welgemoed, Western Cape, and arrested a foreign national.

On 14 February 2019, at the Western Cape High Court, André Johannes Minnaar and sons Rudolf and Marthinus were each sentenced to five years' imprisonment, suspended for five years on strict conditions; André and Rudolf were also fined R100 000 (USD7,000) or eight years' imprisonment for abalone poaching and money laundering, of which half the sentence was suspended for five years. Marthinus was additionally sentenced to a further eight years' imprisonment for abalone poaching, which was wholly suspended for five years, again with stringent conditions. Seven others earlier pleaded guilty to all charges for which they were sentenced in December 2018.

The group was linked to a syndicate that carried out illegal abalone operations at various premises in the Western Cape and Gauteng, where wet abalone was delivered, stored, dried and packaged.

On 28 February 2019, at Strand Magistrates' Court, Constable Frederico Franke was sentenced to 5 years' imprisonment for the illegal possession and transport of circa 1.5 t of abalones *Haliotis midae*. In May 2016, Franke and another police officer hatched a plan with two suspects (awaiting trial) to apprehend their vehicle carrying abalones from Hermanus to Kleinmond, seize the abalone, keeping some for themselves to sell at a later date and submitting the remainder for investigation, while allowing the suspects to flee. The case against the co-accused is pending.

In February 2019, at Port Elizabeth High Court, Julian Brown was sentenced to 18 years in prison for running an illegal abalone poaching enterprise (and three years for poaching). Both sentences will run concurrently. Brown, along with Eugene Victor and Brandon Turner, was convicted on charges of racketeering and contravening the *Marine Living Resources Act*. Victor was also convicted on additional charges, including forgery and fraud. Victor and Turner were each sentenced to an effective 15 years behind bars.

On 29 March 2019, at Port Elizabeth High Court, Marshelle Blignault was sentenced to imprisonment for 12 years for her role in running an illegal abalone enterprise (her ex-husband Morne Blignault was convicted in September 2018 of racketeering and abalone poaching and sentenced to 20 years in prison (see *TRAFFIC Bulletin* 30(2):75)).

Jacob Naumann, Frederick Nance, Petrus Smit and Willie Nance were convicted on related charges and received sentences ranging from five to 12 years, while Nance Snr received the option of a ZAR20,000 (USD1,430) fine or 18 months in prison. He was convicted on charges of contravening the *Marine Living Resources Act* after he was caught assisting his son, Frederick, with transporting processed abalone from a farm outside Port Elizabeth where the Blignaults' illegal operations were conducted. Naumann received two 12-year sentences for racketeering as well as one four-year sentence and two three-year sentences for contravening the *Marine Living Resources Act*. His sentences will run concurrently.

South African Police Service press release: https://bit.ly/2vgHSI7, 14 November 2018; News24: https://bit.ly/2KXHpFF, 15 February 2019; South Africa National Prosecuting Authority: https://bit.ly/2ICttPu, 1 March 2019; *Herald Live: https://bit.ly/2Gu9DCw, 2 March 2019; Herald Live: https://bit.ly/2UeNdOx, 30 March 2019*

SWITZERLAND: In mid-January 2019, at airports in Geneva and Zurich, authorities seized some 250,000 juvenile European Eels *Anguilla anguilla* (CITES II), many of which were later released in Lake Murten.

vaaju.com: https://bit.ly/2Du6bXz, 9 February 2019

TAIWAN: On 28 December 2018, Customs and Excise Department seized more than 80,000 young eels *Anguilla* spp. in a shipment declared to contain tropical fish.

Liberty Times Net, 28 December 2018

TANZANIA: In January 2019, the Taiwanese Captain of a Malaysian long liner, Han Ming Chuan, along with the owner, Dato Seri Lee Yee Jiat, and agent, Abubakar Salum Hassan, were sentenced to 20 years' imprisonment or a fine of TZS1 billion (USD435,000). Their vessel was intercepted in January 2018; on board over 90 kg of shark fin [species not reported] was discovered, in violation of Tanzanian law and international regulations.

Stop Illegal Fishing: https://bit.ly/2vhe3au, 15 January 2019

THAILAND: On 19 December, officials at Suvarnabhumi Airport seized two shipments of juvenile European Eels *Anguilla anguilla* (CITES II) declared as shrimps. The first (357 kg) came from Romania; provenance of the second shipment (352 kg) was not reported.

The Nation: https://bit.ly/2IPDhEV, 21 December 2018

USA: On 11 December 2018, the owner and officers of a Japanese-flagged fishing vessel were charged in a federal court with aiding and abetting the trafficking and smuggling of 962 shark fins into and out of Hawaii on 7 November 2018. Their vessel had been engaged in longline tuna fishing in the southern Pacific Ocean for a year. During the voyage, fins were harvested from approximately 300 sharks, in some instances while the fish were stunned but still alive, and the finless bodies were discarded overboard.

All fins derived from specimens of CITES-II species: Oceanic Whitetip Shark *Carcharhinus longimanus*, Silky Sharks *Carcharhinus falciformis* and Bigeye Thresher Sharks *Alopias superciliosus*.

US Department of Justice media release: https://bit.ly/2KX0WWI, 11 December 2018.

PANGOLINS

All eight species of pangolins *Manis* spp. are listed in CITES Appendix I, effective 2 January 2017

HONG KONG SAR: In January 2019, authorities seized over 8 t of pangolin scales en route to Viet Nam from Nigeria.

TRAFFIC: https://bit.ly/2UuqY32, 16 February 2019

MALAYSIA: On 7 February 2019, authorities in Kota Kinabalu, Sabah, seized a record 30 t of pangolins and pangolin scales and uncovered the workings of a syndicate that has reportedly been operating for seven years. At a factory and warehouse, they seized from refrigerated containers some 1,800 boxes of frozen pangolins, 572 frozen pangolins in separate freezers, 61 live pangolins and 360 kg of pangolin scales. A Malaysian national and owner of the factory was detained; he had reportedly purchased the pangolins from local hunters for distribution locally and in neighbouring Sarawak.

TRAFFIC: https://bit.ly/2UBb3Qu, 11 February 2019

Customs officers ► in Sabah, Malaysia, in February 2019 examining part of a consignment that included a record-breaking 30 t of pangolins and pangolin scales.

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SINGAPORE: On 3 April 2019, at Pasir Panjang Export Inspection Station, authorities seized 12.9 t of pangolin scales. Just days later, on 8 April, a further 12.7 t were seized; both shipments were on their way from Nigeria to Viet Nam.

The latest haul was hidden in a container declared to contain cassia seeds. On inspection, officers discovered the pangolin scales, estimated to have been taken from some 21,000 pangolins, packed in 474 bags.

The scales seized in the first shipment derive from the White-bellied Tree Pangolin *Manis tricuspis* and the Giant Ground Pangolin *M. gigantea*; those from the second include scales from these species and from the Black-bellied Tree Pangolin *M. tetradactyla* and Temminck's Ground Pangolin *Manis temminckii*.

Today online: https://bit.ly/2W0WE1C, 10 April 2019

SOUTH AFRICA: On 2 November 2018, at Tzaneen Regional Court, Limpopo Province, Golden Khumalo and Sjabuliso Mpofu were sentenced to seven years' imprisonment for the unlawful possession of a pangolin. During the trial, the court heard how the accused would hunt this species to sell to an underground market of locals and foreigners around Tzaneen.

On 22 February 2019, at Middleburg Regional Magistrates' Court, Mpumalunga, Zimbabwean national Senior Mabena was sentenced to six years in prison after being found in possession of a live pangolin. He was also sentenced to three months' imprisonment for being in South Africa illegally.

National Prosecuting Authority media statement: https://bit.ly/2IQI5de; 2 November 2018; The Citizen: https://bit.ly/2Pv8X3S, 22 February 2019

THAILAND: On 28 February 2019, a Malaysian policeman was detained for allegedly trying to smuggle 47 pangolins into the country from Malaysia. He had arrived by car at Sadao Customs House; officers found a number of sacks containing live pangolins hidden under the bonnet. He admitted that the pangolins had been procured in Alor Setar, Kedah, and were to be sold in Sadao town for export to China.

On 2 March 2019, a man was arrested at a police checkpoint near Sam Roi Yot Police Station in Prachuap Khiri Khan province after police found 76 pangolins in 18 sacks in the back of his vehicle. He reportedly confessed that it was his third run trafficking the animals, which came from Indonesia, and for which he had been paid.

https://bit.ly/2EEiL7S, 28 February 2019; Khaosod English: https://bit.ly/2C84RsL, 5 March 2019

ZAMBIA: On 17 October 2018, Charles Simulambo was sentenced to five years' imprisonment with labour for selling a live pangolin in Livingstone.

On 19 February 2019 it was reported that Mangani Phiri had been sentenced at the High Court in Chipata to five years' imprisonment for the unlawful possession of a live pangolin.

Daily Mail: https://bit.ly/2IRrRR4, 27 October 2018; Lusaka Times: https://bit.ly/2UQicBC, 19 February 2019

ZIMBABWE: On 18 October 2018, at Hwange Magistrates' Court, Zanu PF Matabeleland North Deputy provincial secretary Robert John Khumalo and traditional healer Sithembiso Tshuma, were each sentenced to the mandatory nine years in prison for the illegal possession of a pangolin skin. Khumalo was arrested while seated in a car in Hwange negotiating a price for the animal's scales with Tshuma. The pangolin skin with scales was found in the boot of the car.

On 19 October 2018, at Matabeleland North Magistrates' Court, three people were each sentenced to nine years in prison for an offence involving a pangolin: Tama Muleya and brothers Ernest and Clive Komonde, from Kalamenda, were found in possession of two pangolin skins (2.7 kg/2 kg) in September. They claimed they had been hired to transport the animals in exchange for beer but were unaware of the contents of the vehicle. The skins were forfeited to the State.

News Day: https://bit.ly/2UxCniK, 19 October 2018; Chronicle: https://bit.ly/2KYTtX7, 27 October 2018

REPTILES

INDIA: On 25 March 2019, Customs officials at Chennai International Airport arrested a passenger arriving from Bangkok, Thailand, who was found with a number of reptiles contained in plastic containers and boxes of confectionery in his luggage. Upon inspection by the Wildlife Crime Control Bureau, the specimens were identified as 22 specimens of the critically endangered Kleinmann's Tortoise *Testudo kleinmanni* (CITES I), two Rhinoceros Iguanas *Cyclura cornuta* (CITES I), rock iguanas *Cyclura* spp., four Blue-tongued Lizards *Tiliqua* spp. and a horned pit viper Crotalinae. The animals were to be returned to Bangkok.

Authorities at the airport had been placed on high alert following intelligence that wildlife was likely to be smuggled from Thailand following the seizure in February of a Leopard *Panthera pardus* (CITES I) cub arriving on a flight from Bangkok.

Deccan Chronicle: http://bit.ly/2VTAZve, 26 March 2019

MADAGASCAR: On 24 October 2018, authorities in Madagascar confiscated 7,347 Radiated Tortoises *Astrochelys radiata* (CITES I) from wildlife traffickers. Some 200 tortoises had perished by the end of October and the remaining specimens were being cared for by staff of the Turtle Survival Alliance.

On 4 March 2019, a Chinese national was arrested at a hotel in Ankazomanga after being found in possession of drugs and 24 live Radiated Tortoises.

Mongabay: https://bit.ly/2KURKCd, 31 October 2018; LINFO.re: https://bit.ly/2GrWs4U, 7 March 2019

MALAYSIA: On 30 October 2018, ex-Customs officers Abdul Razak Abdul Shukor and Mohd Hazwan Musa'Almudin were sentenced to five years in prison and fined for illegal possession of 31 Black Spotted Turtles *Geoclemys hamiltonii* (CITES I). The men were arrested in May 2016 at Kuala Lumpur International Airport where they were serving Customs officers at the time of the arrest; they were apprehended after lifting two bags off a carousel which were found to contain six adult, six immature and 19 female turtles. The men were each given the maximum sentence for the first charge—possession of a totally protected species without a special permit, which is three years in prison and a fine of MYR100,000 (USD23,949). On the second charge of illegal possession of an immature animal, they were each sentenced to one year in prison and fined MYR80,000 (USD19,159) and one year

in prison for the illegal possession of female wildlife, plus a fine of MYR50,000 (USD11,974). The prison terms are to run concurrently from the date of arrest but a stay of execution on the prison terms was allowed, pending an appeal.

TRAFFIC: https://bit.ly/2zhqnJC, 30 October 2018

PHILIPPINES: On 3 March 2019, authorities at Ninoy Aquino International Airport seized 1,529 tortoises from unclaimed luggage arriving on a flight from Hong Kong. The species, none native to Hong Kong, included Star Tortoises *Geochelone elegans*, African Spurred Tortoises *Centrochelys sulcata*, Red-footed Tortoises *Chelonoidis carbonarius* and Hermann's Tortoises *Testudo hermanni* (all CITES II species), plus several other tortoise and freshwater turtle species.

In October 2018, authorities seized 250 live geckos Gekkonidae shipped from Hong Kong to a cargo warehouse near Ninoy Aquino International Airport.

TRAFFIC: https://bit.ly/2UuUF45, 5 March 2019

RHINOCEROSES

All species of Rhinocerotidae are listed in CITES Appendix I except the South African and Swaziland populations of *Ceratotherium simum*, which are listed in Appendix II.

HONG KONG SAR: On 14 February 2019, authorities at Hong Kong International Airport seized some 40 kg of rhino horns from two men in transit from Johannesburg, South Africa, bound for Ho Chi Minh City, Viet Nam.

On 5 April 2019, Customs officials at Hong Kong International Airport seized 82.5 kg of rhino horn/cut pieces. The consignment from South Africa, bound for Malaysia, was declared as "auto parts" and was detected following x-ray screening.

The Government of the Hong Kong SAR media release: https://bit.ly/2vi3l3t, 14 February 2019; Channel News Asia: https://bit.ly/2KYwwn2, 6 April 2019

MOZAMBIQUE: On 16 October 2018, police at Maputo International Airport detained a Vietnamese citizen bound for Viet Nam with 10 rhino horns (11.9 kg) in his luggage, in boxes labelled as industrial machinery.

The previous week, a Chinese citizen was detained in possession of nine rhino horns (see *TRAFFIC Bulletin* 30(2):76).

Club of Mozambique: https://bit.ly/2IQLf0A; AllAfrica: https://bit.ly/2P4KfcM, 17 October 2018

NAMIBIA: On 8 February 2019, at Opuwo Magistrates' Court, Ruteni Muharukua of the Kunene region was fined NAD25,000 (USD1,770) (or five years in prison). He was also sentenced to two years' imprisonment, suspended for five years, on the same count on condition he is not convicted of committing a similar offence during the period of suspension.

Ruteni was arrested in October 2017 in Etosha National Park after attempting to poach a rhino; another person accompanying him was killed. Although the duo did not shoot the rhino, Muharukua was still considered guilty of the offence of hunting specially protected game.

On 12 April 2019, at Windhoek High Court, an appeal being heard against a conviction handed down to four Chinese citizens in March 2014 on charges of attempting to export rhino horns was not only dismissed but their sentences were increased. Wang Hui, Pu Xuexin, Li Zhibing and Li Xiaoliang were found guilty in 2014 of attempting to export 14 rhino horns and a Leopard *Panthera pardus* (CITES I) skin. Their original trial ended with all four being sentenced to between 11 and 14 years' imprisonment.

The appeal court decreed that the defendants should also have been found guilty of unlawfully acquiring, possessing, using or taking out of Namibia the proceeds of unlawful activities. Their sentences were replaced with one of 20 years' imprisonment, of which five years were conditionally suspended, resulting in an effective term for each of 15 years in prison, backdated to September 2016.

The Namibian: https://www.namibian.com.na/75528/read/Etosha-poacher-gets-fines-or-eight-years-in-jail, 11 February 2019; AllAfrica: https://bit.ly/2vkCfbY, 15 April 2019

SOUTH AFRICA: In November 2018, at Skukuza Regional Court, Patrick Nkuna of Mozambique was sentenced to 33 years and three months' imprisonment for trespassing, rhino poaching, possession of an illegal firearm and attempted murder.

On 19 November 2015, the accused illegally entered the Pretoriuskop area of Kruger National Park and shot and killed a Black Rhinoceros *Diceros bicornis* and shot at, and damaged, a helicopter after being spotted by rangers.

On 28 November 2018, Jetro Moyagabo Malema, George Itumeleng Thutlwa and Joseph Kgosietsile Tsiepe who were arrested in Madikwe Game Reserve, North West Province, after attempting to kill a rhino in June 2017, were given prison terms of up to 10 years (some sentences suspended) and a range of fines. The rhino was injured.

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Rhino horns (82 kg) from South Africa, bound for Malaysia, and seized at Hong Kong International Airport in April 2019.

On 9 January 2019, at O.R. Tambo International Airport, Johannesburg, Customs officials intercepted a consignment declared as "decoration items" that were found to contain 36 rhino horns (116 kg) after being discovered by a detector dog. The goods were destined for Dubai and had been concealed under laminated wooden sheets in boxes that were otherwise filled with doormats and decorative items.

On 3 April 2019, at Grahamstown High Court, Forget Ndlovu, George Jabulani Ndlovu, and Skhumbuzo Ndlovu (not related) were each sentenced to 25 years in prison after being found guilty on 50 charges related to rhino poaching in the Eastern Cape. The men, two of whom are Zimbabwe nationals, are believed to have been involved in some 13 cases of rhino poaching in the Eastern Cape over a period of five years. They were arrested in June 2016 at Makana Resort, in Makhanda, with the freshly-harvested horn of a White Rhinoceros *Ceratotherium simum* in their possession. Reportedly, they also had a darting rifle, drugs to dart animals, darts, saws and knives, camping gear, cars and mobile phones. The investigation took three years and the group had twice been released on bail.

Mpumalanga News: https://bit.ly/2DvHBpp, 12 November 2018; https://bit.ly/2VnN0ZU, 30 November 2018; South African Revenue Service (SARS) media release: https://bit.ly/2ZxlEzs, 10 January 2019; RNews: https://bit.ly/2DtOMhQ, 3 April 2019

THAILAND: On 30 January 2019 it was reported that Bach Mai, aka "Boonchai", arrested at Suvarnabhumi Airport in December 2018 for attempting to smuggle 14 rhino horns into the country and who was subsequently sentenced to two and a half years in prison, had his sentence quashed after a key witness recanted his testimony in court.

Boonchai and members of his family are reportedly key players in one of Asia's biggest animal trafficking networks, allegedly responsible for exporting wildlife through Lao PDR to Viet Nam and China.

Bangkok Post: https://bit.ly/2KYzMii; BBC: https://bbc.in/2VoPmYn, 20 January 2018; The Guardian: https://bit.ly/2cwnnvu, 26 September 2016

TURKEY: On 8 December 2018, security forces at Atatürk Airport, Istanbul, seized 34 kg of rhino horns from luggage belonging to a Vietnamese national travelling from Mozambique to Ho Chi Minh City, Viet Nam. Authorities were alerted by previous trips taken by the passenger, which prompted security forces to detain the suspect on landing.

On 8 February 2019, it was reported that security forces at Atatürk Airport had seized 21 rhino horns which were detected following x-ray screening of luggage belonging to two Vietnamese passengers in transit from South Africa to Viet Nam.

Daily Sabah (Turkey): https://bit.ly/2PrSPjx, 9 December 2018; AA Anadolu Agency: https://bit.ly/2tkrLs1, 8 February 2019

FLORA

CÔTE D'IVOIRE: On 7 April 2019, two containers of African Rosewood *Pterocarpus erinaceus* (CITES II), reportedly the equivalent of 200 trees, were seized in Anougblé-Kouadiokro.

Journal du Cameroun: https://bit.ly/2KYwpI9, 8 April 2019

GABON: On 3 December 2018, a Gabonese national and a Chinese national were arrested near Lambaréné following information received by authorities of a convoy of six logging vehicles that had travelled the previous night along the Lambaréné-Fougamou axis. The team immobilised the vehicles at Ndzemba village, on one of the sites of a logging company in the province of Ngounié. Some 13 rosewood *Guibourtia* spp. (Bubinga/Kevazingo) (CITES II) trees had been felled and were reportedly due to be transported to Ndzemba and on to Nkok; the corresponding logs and the vehicles were seized.

In March 2019, about 1,000 m^3 of *Guibourtia* spp. (Bubinga/Kevazingo), equivalent to some 30 large container-loads, were confiscated from a warehouse at Owendo timber port on the Libreville peninsula. The head of the Chinese business that owned the warehouse and two other employees were arrested and taken into custody.

Gabon has banned exploitation of Kevazingo trees as illegal felling had reportedly reached alarming proportions. Forest dwellers in equatorial Africa consider the tree to be sacred.

Gabon News: https://bit.ly/2PyLsHf 13 December 2018; *Phys.org: https://bit.ly/2INQSMS, 6 March 2019;*

HONG KONG: On 8 February 2019, two defendants were sentenced to 16 months' imprisonment in the District Court for smuggling into the country some 24 kg and 17 kg of agarwood *Aquilaria* spp. (CITES II), respectively.

The Government of the Hong Kong Special SAR press release: https://bit.ly/2vi3l3t, 14 February 2019

OTHER / MULTI-SEIZURES

CAMEROON: In March 2019, four members of a syndicate allegedly operating across Africa, were arrested in Douala in possession of 73 (300 kg) elephant (CITES I) tusks and 1.7 t of pangolin *Manis* spp. (CITES I) scales. One of the suspects used his telephone shop as a cover for the illegal trade, and allegedly made regular trips to China; a second person concealed ivory and pangolin scales inside bags of pepper and spices. The contraband was stored at a house in Douala, reportedly for onward transport to Asia via Nigeria.

The Eagle Network: https://bit.ly/2VjGB1S, March 2019

CONGO: On 14 December 2018, at Impfondo District Court, Likouala, Didier Wilibona and Richard Ngombe of Central African Republic, were sentenced to three years' imprisonment, and fined CFA200,000 (USD345) and CFA1 million in damages after being found guilty of possessing and attempting to sell the meat of Gorilla *Gorilla gorilla* (CITES I).

VOX: https://bit.ly/2GBC0zU, 20 December 2018

HONG KONG SAR: On 16 January 2019, Hong Kong Customs mounted a joint operation with mainland Customs to combat cross-boundary wildlife smuggling activities. A shipping container arriving at Kwai Chung Customs House Cargo Examination Compound from Nigeria, bound for Viet Nam, and said to be carrying frozen beef, was found to be holding over 8 t of pangolin scales and over 2 t of ivory. It took four hours to crack open the consignment; the contraband was found beneath frozen meat and a thick layer of ice, reportedly the first time that officers had come across this method of concealment. This is the largest seizure ever made of pangolin scales in Hong Kong. Two people were arrested and the case is under investigation.

BBC: https://bbc.in/2E8p3fO, 1 February 2019; The Government of the Hong Kong Special Administrative Region press release. https://bit.ly/2vjagJZ, 1 February 2019; Rthk.hk news: https://bit.ly/2ZrbT5X, 1 February 2019

KAZAKHSTAN: On 10 April 2019, it is reported that an Uzbek citizen was detained by border guards of the Syryi Auto branch of the Ural Frontier Detachment for attempting to smuggle into Russia by bus 148 fresh Saiga Antelope *Saiga tatarica* (CITES II) horns in a suitcase.

TAG news: https://bit.ly/2ITieRR, 10 April 2019

MALAYSIA: On 11 March 2019, at Raub Sessions Court, Pahang, Vietnamese national Ho Van Kien was sentenced to six years in prison (on separate charges to be served concurrently) and fined MYR400,000 (USD100,000) for the illegal possession of one Tiger *Panthera tigris* (CITES I) skin, a partial tiger skin, claws of a Leopard *P. pardus* (CITES I) and Sun Bear *Helarctos malayanus* (CITES I), as well as 150 g of tiger meat and 20 kg of Wild Pig *Sus scrofa* meat. He was arrested in July 2018 in Kuala Lipis, Pahang State, along with five other Vietnamese nationals (whose cases were acquitted). Ho was sentenced to a year in prison, and fined MYR100,000 (USD25,000) for each of the four charges of illegal possession of Totally Protected species. He will also serve a year in prison for each fine he fails to pay.

On 13 March 2019, at Kuala Kangsar Sessions Court, Vietnamese national Tran Van Sang was sentenced to 19 years in prison after being caught in August 2017 in northern Peninsular Malaysia in possession of 273 animal body parts, including those of Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, and Sun Bear *Helarctos malayanus*, all CITES-I listed species and Totally Protected under national legislation.

TRAFFIC: https://bit.ly/2XTAoY1, 13 March 2019

PHILIPPINES: On 8 April 2019, authorities seized a consignment that included hundreds of birds, and dozens of reptiles and a Critically Endangered and rarely seen Western Long-beaked Echidna *Zaglossus bruijni* from premises in Mati City, Davao Oriental province.

The majority of the birds, many threatened species, came from Indonesian Papua and Papua New Guinea, including 24 Red-and-Blue Lories *Eos histrio* and 20 Palm Cockatoos *Probosciger aterrimus* (both CITES I) and the following Appendix II-listed Pesquet's Parrot *Psittrichas fulgidus*, Eclectus Parrot *Eclectus roratus* and Black-capped Lory *Lorius lory*. The animals will be assessed to determine their potential for rehabilitation. Two people were arrested.

TRAFFIC: https://www.traffic.org/news/echidna-among-wildlife-menagerie-seized-in-philippines/, 9 April 2019

TANZANIA: On 12 December 2018, in Singida Municipality in Manyoni district, four people were sentenced to prison for up to 20 years and received hefty fines for firearms possession and for illegally dealing in government trophies, namely 28 African Elephant *Loxodonta africana* (CITES I) tusks, the skin of one Lion *Panthera leo* (CITES II) and four lion claws, the skin of a Greater Kudu *Tragelaphus strepsiceros* and Eland *Taurotragus oryx* meat.

L. Clifford, TRAFFIC, in litt., *12 December 2018*

UGANDA: On 31 January 2019, authorities seized 750 pieces of elephant ivory (over 3 t) and 424 kg of pangolin *Manis* spp. scales (both CITES I) being smuggled from neighbouring South Sudan inside pieces of timber. The containers had been sealed with thick wax which required the use of chainsaws to break open. This is reportedly one of the largest seizures of wildlife contraband in the country. Four Vietnamese nationals are in custody.

Uganda Revenue Authority: https://bit.ly/2GB32qU, undated; Aljazeera: https://bit.ly/2GbXVOg, 31 January 2019

VIET NAM: On 2 November 2018, authorities Tan Vu Port, Hai Phong, recovered 800 kg of scales of the White-bellied Pangolin *Manis tricuspis* (CITES I), 93 mammal claws, 129 Lion *Panthera leo* (CITES II) teeth and pelts of three Leopards *P. pardus* (CITES I), from containers containing timber imported from Cameroon.

On 25 January 2019, at Hai Phong Customs Department, Danang port, an inspection uncovered ca 1 t of pangolin *Manis* spp. (CITES I) scales and 500 kg of ivory (CITES I) that had arrived at Lach Huyen port, Hai Phong, from the port of Apapa, Nigeria, in a container declared as wood. The items were discovered in crates wrapped in chains and concealed under layers of logs. The importer is an import/export company in Ha Noi.

Tuoi Tre News: https://bit.ly/2GEmP9c, 2 November 2018; ANTV: https://bit.ly/2II20fl, 3 November 2018; Customs News, Viet Nam: https://bit.ly/2ZqbEIB, 28 January 2019

ZIMBABWE: On 4 February 2019 it was reported that Shake Mafuka of Mushumbi had been sentence to imprisonment for 18 years after being found guilty of the illegal possession of Lion *Panthera leo* (CITES II) claws and pangolin *Manis* spp. (CITES I) scales.

Bulawayo 24 News: https://bit.ly/2DyMMF2, 4 February 2019

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Distribution and Status. Information relating to a description of the species under discussion.

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Recommendations. These should be linked to the discussion/conclusions in the report. Try to make these as specific as possible, stating who should take action, where possible.

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