TRAFFIC

REPORT

NOVEMBER 2016

REDUCED TO SKIN AND BONES RE-EXAMINED: FULL ANALYSIS

An analysis of Tiger seizures from 13 range countries from 2000-2015

Sarah Stoner, Kanitha Krishnasamy, Talia Wittmann, Steven Delean and Philip Cassey

TRAFFIC REPORT

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development. TRAFFIC is a strategic alliance of WWF and IUCN.

The designations of geographical entities in this publication, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of TRAFFIC or its supporting organizations concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The views of the authors expressed in this publication are those of the writers and do not necessarily reflect those of TRAFFIC, WWF or IUCN.

Published by TRAFFIC.
Southeast Asia Regional Office
Unit 3-2, 1st Floor, Jalan SS23/11
Taman SEA, 47400 Petaling Jaya
Selangor, Malaysia
Telephone : (603) 7880 3940
Fax : (603) 7882 0171

Suggested citation: Stoner, S., Krishnasamy, K., Wittmann, T., Delean, S. and Cassey, P. (2016). *Reduced to skin and bones re-examined: Full analysis. An analysis of Tiger seizures from 13 range countries from 2000-2015.* TRAFFIC, Southeast Asia Regional Office, Petaling Jaya, Selangor, Malaysia.

Front cover photograph: Male Bengal Tiger prowling in the winter sunshine.

Credit: Andybignellphoto /Dreamstime.com

REDUCED TO SKIN AND BONES RE-EXAMINED: FULL ANALYSIS

An analysis of Tiger seizures from 13 range countries from 2000-2015

Sarah Stoner, Kanitha Krishnasamy, Talia Wittmann, Steven Delean and Philip Cassey

Male Bengal Tiger prowling in the winter sunshine.

ACKNOWLEDGEMENTS

The authors would like to thank the governments of Bangladesh and Malaysia for supplying data in 2016, and Bhutan, India, Lao People's Democratic Republic, Myanmar and Thailand for supplying data in 2012, as referred to throughout this report. The Global Tiger Forum (GTF) is also thanked for their assistance in requesting for seizure data from Tiger range countries.

The following staff from TRAFFIC are thanked for their helpful comments and contributions: Chris R. Shepherd, Elizabeth John, James Compton, Tiau, Kiu Hwa, Karlina Indraswari, Xu Ling, Sabri Zain, Richard Thomas, Steven Broad and Shekhar Niraj. Mike Belecky, Heather Sohl and Khalid Pasha from WWF provided useful comments to earlier drafts of this report. Anita Akella, Loretta Ann Shepherd and Samia Saif are also thanked for reviewing this report.

The authors thank Aqeela Abdul Jalil and Elizabeth John for their continued support with the design and layout of the report, without which this report would not have been possible.

WWF as well as the Australia Zoo and the Zoo and Aquarium Association (ZAA) are thanked for their generous funding towards this activity.

ACRONYMS

ASEAN-WEN	Association of Southeast Asian Nations Wildlife Enforcement Network
CI	Confidence Interval
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoP	Conference of the Parties
ENV	Education for Nature Viet Nam
EIA	Environmental Investigation Agency
Lao PDR	Lao People's Democratic Republic
SAWEN	South Asia Wildlife Enforcement Network
SE	Standard Error
TRCs	Tiger Range Countries

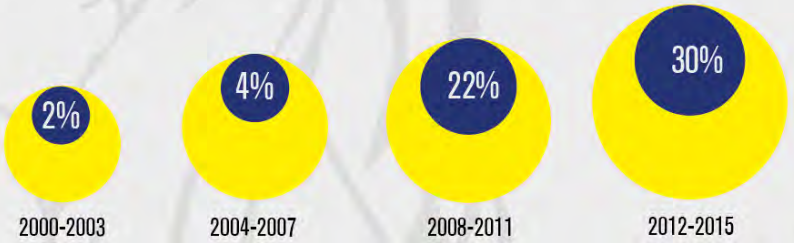
Tigers Reduced To Skin and Bones

An analysis of seizures from 2000-2015

3890
WORLD WILD TIGER POPULATION

1755
TIGERS SEIZED WORLDWIDE

ESTIMATED % OF TIGERS IN TRADE FROM CAPTIVE SOURCES



1755 TOTAL NUMBER OF TIGERS SEIZED
801 TOTAL NUMBER OF SEIZURES

TRAFFIC
the wildlife trade monitoring network

WWF

TX2

Table of Contents

EXECUTIVE SUMMARY

Illegal trade and the trafficking of Tiger *Panthera tigris*, as well as their parts, products and derivatives, and the poaching which supplies it, is the most immediate threat to the survival of wild Tigers. In April 2016, the WWF released a new minimum estimate of over 3 890 Tigers *Panthera tigris in the wild.* This figure is based on national Tiger surveys which employed more rigorous methods of sampling compared to previous surveys, as well as estimations at a national level. The information also shows that the known Tiger range has declined by 42% between 2006 and 2014, attributed to actual decline in Tigers as well as a reflection of better data collection methods and increase in Tiger survey efforts. While current knowledge on the range and number of Tigers has improved, the most immediate threat to the survival of wild Tigers persists. This is the continued persistence of illegal trade and trafficking in Tiger parts, products and derivatives, and the poaching which supplies this trade. Demand also shows no signs of abating, and the role of captive Tiger facilities has become a highly relevant factor.

In 2010 and 2013, TRAFFIC produced two systematic reports analysing Tiger seizures from 11 and 12 Tiger range countries (TRCs) respectively, which described the trafficking patterns. This current report presents an updated situational analysis which, assesses seizure information over a 16-year period from January 2000 to December 2015 for all 13 TRCs, using a combination of government acquired data and open source media reports. The data was analysed for overall trends for the full 16 years as well as for four quarterly periods during this duration: 2000-2003 (Q1), 2004-2007 (Q2), 2008-2011 (Q3) and 2012-2015 (Q4). The objective of this report is to summarize the current trade dynamics for Tigers at a global level, in addition to assessing trade characteristics for each country with selected key considerations at a country-specific level. Practical recommendations are also provided for the consideration of the TRCs, stakeholders and -other actors at international, regional and national levels.

Over the 16-year period between 2000 and 2015, a total of 801 Tiger seizures were reported across the 13 Tiger range countries, equivalent to an estimated minimum of 1 755 Tigers seized. On average, 50 seizures were reported annually, equivalent to a minimum of 110 Tigers. Compared to TRAFFIC's previous analysis in 2013 where 654 seizures were recorded from 2000-2012, representing 1 425 Tigers seized, the 2016 data shows an increase of 147 Tigers, which reflects an additional 330 Tigers seized. It needs to be mentioned that some of this increase can be ascribed to the inclusion of data from more countries in the 2012 and 2015 analyses. For example, Cambodia did not previously report seizure incidents for the year 2000, and therefore did not feature in TRAFFIC's analysis in 2010 or 2013.

While China, Indonesia and Thailand were observed to be the top three countries that demonstrated a consistent increase in seizures in each four-year period quarter of the 2000 to 2015 timeframe, only Indonesia and Thailand show an increasing number of Tigers seized each quarter. For instance, Thailand seized 166 Tigers from 2012-2015, compared to the 64 Tigers seized from 2008-2011; it must be noted that the seizure of 102 Tigers from the Tiger temple in 2015 is the reason behind this increase. Indeed, this analysis highlights the prominent role of Tiger seizures from captive facilities, including farms, zoos and tourist locations. At least 297 of the 1755 tigers (17%) are those that have been reportedly seized from or originated from captive facilities, crucially though this percentage rises to an estimated 30%

(or 154 Tigers) for the most recent quarter (2012-2015). Ten of the 13 TRCs reported seizures of live Tigers, totalling 263 live Tigers seized over the 16-year review period, with Thailand and Viet Nam seizing the highest numbers. Overall, the greatest number of seizures were reported by India, accounting for 44% (355) of all reported seizures. However, statistically analysis of its short-term data indicates that the relative proportion of seizures in India significantly declined over this time period. Moreover, there was no statistically significant change in the relative proportion of seizures for any of the other countries during 2000-2015.

Ten of the 13 TRCs reported seizures of live Tigers, totalling 263 live Tigers seized during the 16-year review period, with Thailand and Viet Nam reporting the highest numbers.

Overall, the highest number of seizures was reported by India, accounting for 44% (355) of all reported seizures. However, statistical analysis of its short-term data indicates that the relative proportion of seizures in India, compared to other TRCs, has significantly declined over this period. Moreover, there was no statistically significant change in the relative proportion of seizures for any of the other countries during 2000-2015.

In the analysis of Tiger commodity type in trade, the data show that skins – seized in complete parts, representing one Tiger – were the commodity most often seized, with a minimum of 758 skins seized during the 16-year period analysed. Statistical analysis of the combined trend for all TRCs, however, indicate a significant decrease in the seizure of skins. Notably, while the first quarter of the 2010-2015 timeframe saw 214 Tiger skins seized, this number declined in each subsequent quarter, with a minimum of 146 skins recorded seized in the most recent quarter of 2012-2015. This decline, however, could have been due to reporting issues rather than to an actual decline in Tiger skins being seized. For instance, India's reported seizures of skins have declined drastically since 2009. At a Tiger range level, seizures of bones in the most recent quarter (2012-2015), however, were significantly higher than in the preceding three quarters. Similarly, the amount of Tiger bone wine detected in trade – mostly seized in China and Viet Nam - was higher in the most recent quarter than in the preceding quarters. Alarmingly, more Tiger canines were seized in the 2012-2015 quarter than the three previous quarters combined, and this may signal a greater demand for these as items of jewellery.

The huge disparity in how each of the TRCs report seizures makes meaningful and accurate analysis exceedingly difficult, particularly regional level analysis. The lack of a systematic centralized reporting system underlies this problem. While the data shows both the number of seizures and number of Tigers seized across Asia increasing throughout the 2000-2015 review period, this is not consistent with national level trends, and may reflect changes in reporting practices rather than anything substantive.

Analysis of density estimation to determine significant 'hotspots' of activity shows prominent clusters on the India-Nepal border and the India-Bangladesh border. Given that almost half the seizures had been reported in India, there will inevitably be a greater prevalence of hotspots there. These clusters are evident in the data for all four quarters, which indicates that these areas should be a target for concentrated law enforcement activities and investigations aimed at

identifying and dismantling trade networks. Seizure information also points to other hotspots – for instance, northern Viet Nam around Ha Noi, and to a lesser extent Kuala Lumpur and surrounding areas in Malaysia. Analysis of Tiger trade routes, from point of origin to final destination, also highlighted some interesting findings – most notably relating to two seizures in 2015 that occurred in China and Cambodia of Tiger parts (as well as Rhino horn and ivory) originating in Africa.

COMMON THEMES AND RECOMMENDATIONS

The analysis of the seizure data reinforces the reality that current collective efforts at the global level are insufficient to stem the threats posed by trade. Furthermore, seizures very often represent only a proportion of the illegal trade, meaning that actual trade levels are suspected to be much higher. This assessment identifies the critical elements in national-level trade dynamics across several key Tiger range countries, such as the demand for skins for taxidermy purposes (trophy) and bones for traditional medicinal purposes. Each of the problems and issues described highlight an urgent need to address the enabling conditions that allow the Tiger trade to continue at such high levels.

The application of the seizure data analysis, contextualized with up-to-date information on the trade, will allow for the development of recommendations designed to solve this problem.

There are clear indications of a number of common themes that exist across most, if not all, TRCs that need to be tackled strategically to achieve meaningful impact. Every one of these themes has been highlighted in the past as requiring specific intervention by Parties of the Convention on the International Trade in Endangered Wild Fauna and Flora (CITES), particularly TRCs. However, of implementation of these measures has not yet achieved results sufficient to stem the poaching of and trade in Tigers. Addressing these issues requires that countries, particularly TRCs, make substantial efforts aimed at: **1)** improving law enforcement effectiveness, legislation and regulation; **2)** captive breeding; and **3)** reducing demand and consumption.

1. LAW ENFORCEMENT, LEGISLATION AND REGULATION

The persistently high number of seizures, involving an equally high number of whole Tigers in trade, is rooted in the lack of **intelligence-led law enforcement** efforts that can lead to successful convictions. Parties should utilize the results of seizure data analysis and mapping, such as the work done by TRAFFIC, to guide their law enforcement interventions, alongside their own intelligence and inter-agency efforts.

TRAFFIC urges TRCs to share **information and intelligence** on seizures and poaching incidences. They should also share information regarding Tiger skin seizures to enable the determination of Tiger provenance, as this can provide a better understanding of criminal networks and their trade patterns including for example, the routes used for Tiger trafficking. This recommendation is closely associated with the need for countries to establish a systematic and

standardized database to store forensic markers and photographic information, at minimum. This will aid investigations and law enforcement efforts, as endorsed by the 17th Conference of Parties (CoP) to CITES in October 2016.

Collaboration at the regional level is needed, particularly at hotspots and border areas identified in this report. The role of **bilateral co-operation** and multilateral law enforcement networks such as the South Asia Wildlife Enforcement Network (SAWEN) and the Association of Southeast Asian Nations Wildlife Enforcement Network (ASEAN-WEN), is extremely pertinent.

Collaboration with partners at the international level, including INTERPOL through the National Central Bureaus (NCBs), in co-ordinating and supporting investigations can strengthen efforts on this front, particularly in pursuing nominal information about the perpetrators. If the criminal activity involves businesses and / or corporations, investigations by TRCs and other CITES Parties should consider the possibility of money-laundering operations, and prosecutorial actions should be pursued under the relevant legislation. The 17th meeting of the Conference of the Parties to CITES also saw the adoption of CITES' first resolution on anti-corruption. Corruption is inherently difficult to quantify, monitor and prevent; direct links between this seizure analysis and corruption cannot be made. However, any effort to eliminate poaching and Tiger trafficking must consider anti-corruption measures that accompany intelligence-led investigations, prosecution and successful convictions. While many TRCs have laws to **address corruption**, they are seldom used to tackle wildlife crime. Such efforts must be considered in any law enforcement effort, perhaps in tandem with anti-money laundering investigations where such cases are present, without which organised criminal networks perpetuating this problem will not be eradicated.

While analysis of seizure information provides valuable insights into developments at the global level, efforts to evaluate the progress made by TRCs had been hampered by the non-systematic manner in which seizures are reported to CITES, compounded by the overall low rate of reporting. Pursuant to CITES CoP Decisions 16.68 to 16.70 on Asian big cats (Felidae spp.), all TRCs are required to "provide information on incidents of poaching of and illegal trade in all Asian big cat species, including their parts and derivatives, which will enable the compilation of a report for the law enforcement community" as well as "gather information on incidents of poaching of and illegal trade in all Asian big cats since the beginning of 2010, undertake an analysis of the information, and prepare a report for the law enforcement community to be circulated in a restricted fashion to relevant enforcement agencies and range States". This has however clearly not been implemented fully yet, given the paucity of feedback from TRCs to the CITES Secretariat based on Notification to the Parties No. 2013/037 regarding Implementation of Resolution 12.5 (Rev. CoP 16). The notification sent to Parties in 2016 regarding the New Annual Illegal Trade Report (No. 2016/007) provides a simple template for the Parties to report all information regarding illegal trade. Action taken by TRCs in a timely manner would aid efforts to better understand the levels of trade across TRCs, especially when assessed with a **standard reporting template**. This can be useful in assessing progress at the national, regional and international levels, including the identification of additional support for law enforcement efforts.

Law enforcement can only be effective if legal tools are in place to regulate and control the trade in Tigers. When legislation is weak or have gaps, for example if they do not protect non-native CITES-listed species, CITES becomes ineffective. Of the TRCs, seven – China, Cambodia, Indonesia, Malaysia, the Russian Federation, Thailand and Viet Nam - have Category I listing, meaning that their national legislation is deemed to meet CITES requirements. However, the legislation in some of these seven countries have significant gaps, such as those concerning the regulation of captive facilities, and the lack of protection on the use and trade in non-native species within the country. TRAFFIC therefore proposes a **comprehensive re-assessment of the effectiveness of CITES-implementing legislation for Indonesia, Lao PDR, Thailand and Viet Nam** as a matter of priority, including a re-examination of their categorization under the CITES National Legislation Project. These countries have been selected based on gaps and weaknesses in legislative provisions, such as low penalties and deterrents to illegal activity. This re-assessment should include at minimum, a reconsideration of the following areas: 1) protection against the hunting, use of and trade in all Tigers (including all sub-species) which effectively affords protection to wild Tigers across all TRCs and allows TRCs to fully and adequately implement CITES, 2) adequacy of penalties provided by law, 3) captive breeding regulation (for all Tiger species including at the sub-species level), 4) registration of privately-held stocks and the prevention of leakage into the market, and 5) control of products and medicines containing or claiming to contain Tigers. To stem the issue of laundering and leakage regarding captive-bred Tigers, countries that have captive breeding facilities operations should as a matter of urgency revise their legislation to include non-native Tigers (and other Asian big cats). It is also worth considering that the application of laws is as paramount as the legislation itself. The lengthening of custodial sentences and increased penalties will not be enough on its own. Extensive and thorough investigations are required for the legislation to be fully implemented.

Cybercrime involving Tigers is becoming more prevalent, as evidenced by seizures analysed in this dataset that show sellers attempting to offer items for sale on the internet. Social media and phone applications, especially those with restricted access features, facilitate communication between traders in a non-detectable way. In April 2016, WhatsApp (owned by Facebook) reported that the messaging service would be fully encrypted, creating greater challenges for law enforcement agencies in monitoring and detecting illegal activity. TRAFFIC urges commercial trading sites and social media enterprises to work closely with national governments to **shut down businesses and individuals found to be facilitating illegal trade in Tigers (and other endangered species) online.** The speed and volume in which cybercriminals operate necessitates collaborative action across agencies and national borders. Viable options for **self-policing** by internet service providers and social media networks, combined with mechanisms for reporting illegal trade, should be considered to enhance enforcement efforts. This should include the establishment of systems to prohibit or **suspend accounts** of repeat offenders. Parties are also encouraged to adopt approaches similar to China's "Zero Tolerance" of online advertising of Tigers which involves joint efforts by service providers, governments and non-governmental organizations. TRAFFIC also urges members of the public to **report suspected crime** directly to local law enforcement agencies. Options for reporting to TRAFFIC can also be made via the Wildlife Witness App, which can be downloaded from the App Store or Google Play for free.

If illegal activity is suspected to be taking place on Facebook, a direct report to Facebook itself is encouraged. Facebook's Community Standards are a strong affirmation of its policy against illegal activity including wildlife crime, and provides a procedure for direct reporting to Facebook (https://www.facebook.com/help/181495968648557?ref=communi%20ty_standards)

2. CAPTIVE BREEDING

The rise in unregulated **breeding farms and facilities,** and its relation to illegal Tiger trade, needs to be closely monitored. Seizures of suspected captive origin Tigers (both live animals and carcasses) have risen in three Southeast Asian countries – Lao PDR, Thailand and Viet Nam, in parallel with the growing number of captive Tigers in these countries. Years of requests from Parties for greater efforts to regulate and control the leakage of Tigers from captive facilities has not seen any meaningful progress on this matter. Reports are also being submitted in a non-standardized manner with varying levels information that often lacks the level of detail required to understand the full breadth of the issue and implications to wild Tigers. Given the involvement of, and allegations against, captive facilities, there needs to be further investigation into the true motives behind such operations to dispel the cloud of uncertainty surrounding the management, regulation and control of such facilities. This analysis shows that Tigers from these facilities have indeed leaked into and become part of the illegal trade chain. Based on this, TRAFFIC recommends that the following be implemented as immediate priorities by the CITES Secretariat, as contained in CITES CoP 17 Doc. 60.1 and the draft Decision on Asian big cats CoP17 Com. II. 10 that was accepted at the CoP17:

- Conduct a review of the number of Tiger breeding facilities maintained by Parties and the number of Tigers kept in these facilities;
- Request Parties with facilities where large numbers of Tigers are bred in captivity to welcome a mission from the Secretariat to visit such facilities with the purpose of gaining a better understanding of the operations and activities undertaken by them.

In addition, given the involvement of, and reported allegations, against captive facilities as well as suspicions about their true motives, affected countries particularly TRC should **investigate all breeding centres for involvement in illegal activity, and close them down if there is** evidence of such exists. Further analysis is also encouraged to better understand the implications of Tiger seizures from captive facilities for their impact on wild Tiger populations. For Lao PDR, the recommendations from the CITES Secretariat's mission in July 2016 point to some key priorities: "There is an urgent need for the adoption of **clear guidelines regarding the operation of Special Free Economic Zones** in relation to farming, consumption and trade in CITES-listed species, as well as clear guidance on how to proceed in cases of alleged illicit trafficking occurring in these zones. No standard procedure seems to be in place to act upon such information". Lao PDR's announcement at the 67th meeting of the CITES Standing Committee (SC67) regarding its intention to discuss

ways of phasing out Tiger farms is relevant in this context, including the enactment of regulations on wildlife trade within its Special Economic Zones.

DNA profiles and other markings (such as photographic evidence) should be taken from all Tigers held in captivity to monitor the numbers of Tigers being bred in captive facilities, and prevent more Tigers from being leaked into trade. These samples should be recorded and managed in a centralized database. Samples from seized Tigers can then be cross-referenced against the database, to corroborate or refute claims that Tiger breeding is supplying trade.

1.0 INTRODUCTION & BACKGROUND

Internationally, illegal wildlife trade currently attracts a greater level of political interest than it ever has. The call to action against illegal wildlife trade is now being observed globally, and no longer limited to markets in East Asia for example, which have long been cited as the primary attributer driving the demand for trade in endangered species (UNODC, 2007; TRAFFIC, 2008; UNODC, 2010; Lawson and Vines, 2014). As recently as June 2016, the United States Fish and Wildlife Services (USFWS) introduced new regulations to effectively prohibit domestic ivory trade. This measure demonstrates the United States' commitment to tackling the persistent poaching of elephants to feed the international demand for ivory (USFWS, 2016).

The status of wild Tigers *Panthera tigris* population continues to be of great concern. In April 2016, Tigers were declared officially extinct in Cambodia, followed closely by the contrasting news that after national assessments in several TRCs, the global Tiger population is likely to be over 3 800 individuals (Anon, 2016; Dockrill, 2016; Rohr, 2016) which is higher than the previous estimate of 3 200 in 2010 (CNN, 2010; The Hindu, 2014; WWF, 2016). While there has been some discourse around the methods used to determine the number of wild Tigers, there is no question that remaining Tiger populations, fragmented across Asia, are still seriously threatened by poaching and trafficking.

1.1 Global Wild Tiger Population

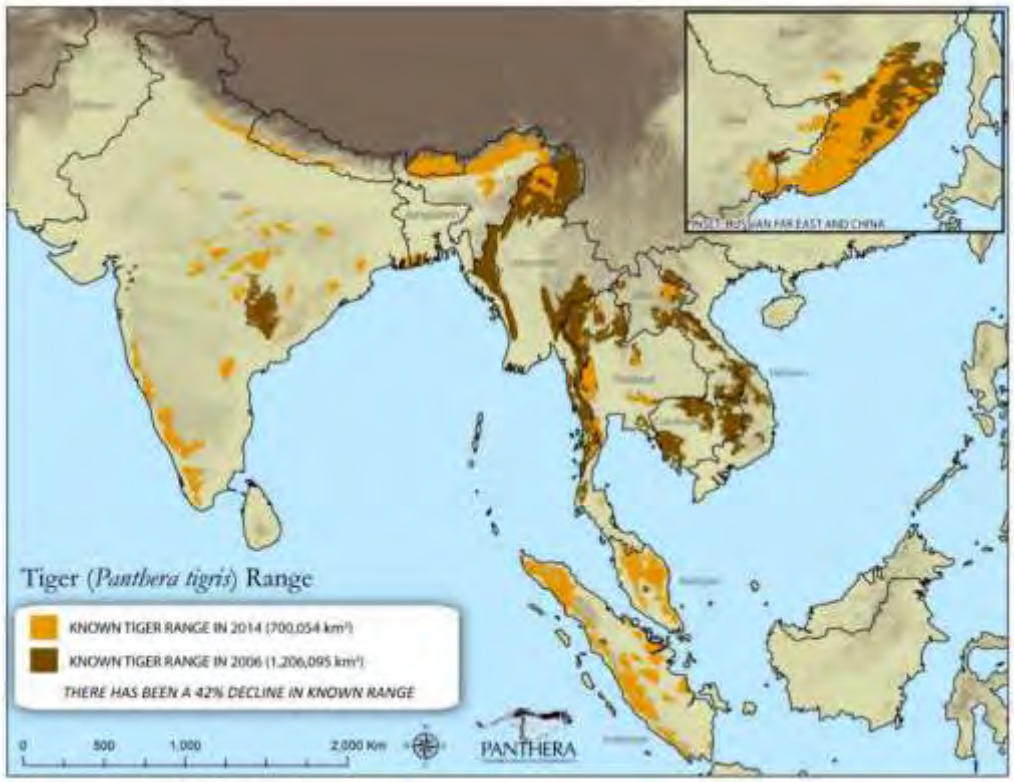
During the 3rd Asia Ministerial Conference on Tiger Conservation in 2014, the governments of TRCs pledged to announce a new global wild Tiger estimate by 2016 based on full, systematic national surveys. Today, not all countries have completed or published these survey findings. The new minimum estimate of over 3 800 wild Tigers (Table 1) is based on the IUCN Red List of Threatened Species count for Tigers in Cambodia, China, Lao PDR, Nepal and Viet Nam, and has been updated for Bangladesh, Bhutan, Indonesia, Malaysia, Russia and Thailand where national Tiger surveys and estimation have taken place since the IUCN assessment (Chndawat *et. al.,* 2011; Kawanishi, 2015; Lynam and Nowell, 2011; The Hindu, 2016). Bhutan and India recorded increases in their populations, whereas Malaysia (Kawanishi, 2015), Indonesia and Thailand recorded decreases (Goodrich *et al*, 2015). Previous estimates were unavailable in Bangladesh or Russia in 2014 but both have since undertaken national surveys. Myanmar has yet to do so. Tiger population numbers are disproportionate with almost 60% of the wild Tigers living in India (Table 1). Cambodia (denoted as greyed out in Table 1) announced in April 2016 that Tigers were functionally extinct, with no breeding populations left in the country (AFP, 2016). Each country's domestic population status is examined in more detail in the country profiles in this report.

Table 1: Wild Tiger Population Per Tiger Range Country[1]

Tiger Range Country	Latest Count	Percentage of Total
India	2226	57%
Russia	433	11%
Indonesia	371	10%
Malaysia	250	6%
Nepal	198	5%
Thailand	189	5%
Bangladesh	106	3%
Bhutan	103	3%
China	>7	0%
Viet Nam	<5	0%
Lao PDR	2	0%
Cambodia	0	0%
Myanmar	-	-
Total	**3890**	**100%**

The known Tiger range has declined by 42% between 2006 and 2014 (Map 1). While the change reflects real decline in part, it also reflects better data resulting from a large increase in survey effort following the 2006 mapping effort (Goodrich *et al*, 2015).

Map 1: Tiger Range Decline (2006-2014)



[1] Source: http://wwf.panda.org/

Today, only six of the original nine sub-species of Tigers persist, with three now confirmed extinct: the Balinese Tiger *P. t. balica*, extinct in 1937, Caspian Tiger *P. t. virgata*, extinct in the 1950s, and Javan Tiger *P. t. sondaica*, extinct in 1979. The six remaining sub-species are listed in Table 2 along with their previous and current IUCN status and geographical range.

Table 2: Status of the six extant sub-species of Tigers in 2016

Species Name	Common Name	Previous IUCN Red List Status (year assessed)	Current IUCN Red List Status (year assessed)	Confirmed Range
Panthera tigris altaica	Amur Tiger	Endangered (2008)	Endangered (2010)	Russia
Panthera tigris amoyensis	South China Tiger	Critically Endangered (1996)	Critically Endangered (Possibly Extinct in the Wild) (2008)	China
Panthera tigris corbetii	Indochinese Tiger	Endangered (2008)	Endangered (2010)	Myanmar, Thailand, Lao PDR, Viet Nam, Cambodia and southwestern China
Panthera tigris jacksonii	Malayan Tiger	Endangered (2008)	Critically Endangered (2015)	Peninsular Malaysia
Panthera tigris sumatrae	Sumatran Tiger	Critically Endangered (1996)	Critically Endangered (2008)	Sumatra (Indonesia)
Panthera tigris tigris	Bengal Tiger	Endangered (2010)	Endangered (2011)	India, Nepal, Bhutan and Bangladesh

Over the last decade, TRAFFIC, together with the WWF Tigers Alive programme, has published three milestone reports tracking the status of illegal Tiger trade across all range countries, based on reported seizures. In 2010 and 2013, TRAFFIC produced '*Reduced to Skin and Bones: An Analysis of Tiger Seizures from 11 Tiger Range Countries (2000-2010)'* and '*Reduced to Skin and Bones Revisited: An Updated Analysis of Tiger Seizures from 12 Tiger Range Countries (2000-2012)'* (Verheij *et al.,* 2010; Stoner and Pervushina, 2013). Following this, and to service the 65th meeting of the CITES Standing Committee in Geneva in July 2014, IUCN and TRAFFIC with the support of the CITES Secretariat and WWF, published an analysis that also reviewed the trade in Tigers and other Asian big cats '*Review of implementation of Resolution Conf. 12.5 (Rev. CoP16) on Conservation and trade in Tigers and other Appendix-I Asian big cat species'* (Nowell and Pervushina, 2014). Each publication reported a consistent, year-on-year increase in the number of Tigers detected in trade. Building on these previous analyses, this fourth report evaluates the current trade picture in light of the constantly evolving pressures including the impact of online trade and increasing prevalence of Tiger farming.

1.1 Review of the implementation of Resolution Conference 12.5 (Rev CoP 16) on Asian big cats

Over the years, the CITES Secretariat has issued numerous notifications to the Parties (CITES, 2011; CITES, 2012; CITES, 2013; CITES, 2014a; CITES, 2015b: Table 2), requesting each to report on the progress of their activities to address Resolution Conf. 12.5 on *Conservation of and trade in Tigers and other Appendix-I Asian big cat species* which was last revised at the 16th Meeting of the Conference of the Parties to CITES [Resolution Conf. 12.5 (Rev. CoP16)]. Questionnaires were also developed by the CITES Secretariat to facilitate the reporting process by Parties.

Table 2: Summary of recent Notifications to The Parties to report on the implementation of Resolution Conf. 12.5

Year	Notification Number
2011	No. 2011/014
2012	No. 2012/054
2013	No. 2013/037
2015	No. 2015/006

The 65th CITES Standing Committee meeting (SC65) also established the intersessional Working Group on Asian Big Cats, chaired by China and the membership of which included Parties (both TRCs and non TRCs), as well as NGOs, including TRAFFIC and WWF. The most recent notification was issued in January 2015 (No. 2015/006 of 30 January 2015) to communicate the recommendations on Asian big cats which were endorsed at SC65 to Parties (CITES, 2015a). To guide and facilitate the reporting process, the Standing Committee's inter-sessional Working Group on Asian Big Cats, with the assistance of the CITES Secretariat, prepared a questionnaire (CITES, 2015b) inviting Parties to report on the progress of their implementation of the five main areas covered in Resolution Conf. 12.5 (Rev.CoP16) by August 2015. Twelve Parties responded to this call, which included only six TRCs: Cambodia, China, Malaysia, Nepal, Thailand and Viet Nam. The Working Group conducted a number of rounds of discussions and consensus was achieved on some of the five main areas; a summary of the relevant responses from the reports of both the CITES (SC66 Doc. 44.1) and the Intersessional Working Group (SC66 Doc. 44.2) is provided below:

1. Concerning legislative and regulatory measures

The reports noted that legislative improvements are required in some countries. However, much of this is focused on the issue of captive breeding without specifying other crucial aspects such as penalties. The Working Group also noted the legislative limitations in some countries which had laws that only applied to native species and sub-species of Asian big cats, without considering non-native species and sub-species. This clearly presents an obstacle to law enforcement, particularly as CITES is meant to govern international trade in species, in addition to stonewalling investigations, seizures and convictions.

2. Concerning national law enforcement

It is clear that illegal activity continues in many countries, and improvements in law enforcement, monitoring and control are required to overcome this problem. The reports note that gaps in legislation impede effective law enforcement

including seizures, arrests, investigations and prosecution. In addition, inadequate and low rates of reporting obstruct efforts to evaluate the progress made by Parties. The issue of internet trade is closely associated with both law enforcement and demand reduction. Some Parties such as China, have initiated engagement with e-commerce trading sites to address concerns regarding internet-based trade.

3. Concerning demand reduction, education and awareness

Some level of demand reduction programmes for Tigers do exist but there does not appear to be a dedicated effort, compared to those for elephant ivory and rhino horn for example. Where they do exist, they do not appear to be conducted in a systematic and comprehensive manner that would allow for the identification of drivers, factors and key consumer groups.

4. Concerning the prevention of illegal trade in parts and derivatives from breeding facilities and 5: Concerning the management of national and privately-held stocks of parts and derivatives

These two issues are closely connected and are discussed jointly. These were also the more prominent issue that remained unresolved, notably on CITES Decision 14.69 stating "Parties with intensive operations breeding tigers on a commercial scale shall implement measures to restrict the captive population to a level supportive only to conserving wild tigers; tigers should not be bred for trade in their parts and derivatives". This appears to be a common recurrence at CITES deliberations, despite the various progress reports being requested from Parties through time. The Asian big cat Working Group notes that measures taken by some countries to prevent leakage of the products from captive breeding facilities into internal markets are unclear. It was also reported that some Working Group members were keen on recommending time-bound implementation, though the Chair felt some Parties would face difficulties during implementation due to various reasons, including a lack of definitions and terminologies in Decision 14.69. In its report to the 66th meeting of the Standing Committee, the CITES Secretariat noted that "*any further requests to Parties to report on their implementation of Decision 14.69 may be of limited value. Such requests for reporting have not proven to be successful since CoP14, and it is likely that this will continue to be the case until an agreed way forward has been reached, one which allows for unity and clarity in the Convention's approach to Asian big cat issues*". Additionally, little and non-comprehensive information exists about the volume of national or privately held stockpiles of captive-bred or confiscated Asian big cat body parts and derivatives. No Party, with the exception of Nepal, reported on the volume of their stockpile.

Recommendations from the work of the Working Group formed the bases of a draft Decision on Asian big cats that was adopted at CITES CoP17 (CoP17 Com. II. 10: https://cites.org/sites/default/files/eng/cop/17/Com_II/E-CoP17-Com-II-10.pdf)

2.0 METHODOLOGY

2.1 Data Source and Parameters

Reported seizure data was compiled for the 16-year period, from January 2000 until December 2015 for all TRC. Data parameters included all reported seizures within each TRC, and did not consider seizures that took place outside of TRC (including, for example, seizures that originated from or were destined for a TRC). However, where relevant, we also highlight relevant Tiger criminality outside of this geographical focus.

From May to June 2016, TRAFFIC, with the assistance of the Global Tiger Forum (GTF), had formally requested seizure data for incidents occurring between January 2012 and 2015, from government departments responsible for gathering seizure data on illegal wildlife trade within each TRC. Only government data from Bangladesh and Malaysia were supplied. The governments in India, Thailand, Myanmar, Bhutan and Lao PDR had previously supplied data to TRAFFIC for prior Tiger trade analyses (Verheij *et al*, 2010, Stoner and Pervushina, 2013). However, the majority of this dataset comprises Tiger seizures that were reported in the media or from openly available sources, such as Tigernet in India. Any duplicate incidents were removed. Online research was also conducted to document internet trading.

This report analyses Tiger seizures reported between 2000 and 2015 to assess both the long-term and current trade picture. Previous TRAFFIC reports (Verheij *et al*, 2010, Stoner and Pervushina, 2013) are also referred to, as a comparison through time. To this end, temporal analysis was also categorized into quarterly periods: (1) 2000-2003; (2) 2004-2007; (3) 2008-2011, and (4) 2012-2015 to allow for the identification of persistent, chronic problems, as well those emerging in trade during the most recent quarter (2012-2015). To identify changes in the trade of Tiger commodities over time, commodity types were consolidated into five categories for analysis (Table 3).

Table 3: Broader categories of Tiger commodity types used in analysis

Abbreviation	Category	Commodity Type
PAR	Body Parts	Body part NES (not elsewhere specified), paw, claw, tail, head
BON	Bones	Skull, skeleton, bone
SKI	Skins	Skin, skin pieces, wallets
MIS	Miscellaneous	Wine, whiskers, teeth, genitalia, gall bladder, canine, meat, meat/part pieces, unknown
WHO	Whole Specimen	Body, dead specimen, live specimen, whole specimen, carcass

2.2 Analysis

To ensure consistency, and to render seizure data comparable with earlier TRAFFIC reports (Verheij *et al*, 2010, Stoner and Pervushina, 2013), the same counting method was used to estimate the number of individuals found in trade. Records of seized items were tallied as units that could be used to calculate the number of Tigers involved in each seizure.

Quantities of body parts equivalent to one or more Tigers: counted in seizures involving claws, canine teeth, heads, ribs, legs, penises, skulls and jaw bones. When seizure records were identified as involving "teeth", these records were assumed to represent canine teeth, as these are the most common Tiger teeth observed in trade. For each seizure, the minimum number of whole Tigers that could yield the items present was calculated. For example, between one and 18 claws in a seizure were deemed to equate to a single Tiger because Tigers have 18 claws. Likewise, four claws, one head, and two ribs were also deemed to equate to a single Tiger because the parts involved amounted to no more than those present in one animal.

To avoid disproportionate reporting of Tiger numbers in trade, the minimum and maximum calculation were considered the same for weight specifications or "pieces". Theoretically, 33 skin pieces could originate from one Tiger (minimum) or from 33 (maximum), and a kilogramme of parts could be derived from one Tiger to an unknown number of Tigers. The same methodology to estimate minimum numbers was also applied in the case of item amounts given in kilogrammes or as numbers of "pieces". Hence in the example of the 33 skin pieces, both calculations would yield one Tiger.

Table 4: Examples of calculation used to determine the number of individuals based on Tiger body parts found in trade

Tiger Body Part	Number / Weight	Minimum	Maximum
Bone	2 / 10kg	1	2
Canine	8	2	8
Claw	10	1	10
Paw	5	2	5
Meat	22kg	3	3
Piece of Skin	11	1	11
Bottle of Wine	40	1	1
Total Number of Tigers		**11**	**40**

Complete pieces that represented whole Tigers: counted in seizures involving tanned skins, full skeletons, complete carcasses, taxidermy mounts and live animals. Such instances required no minimum or maximum as the pieces, for example a skull or a whole skin could not have represented anything but a single Tiger.

Quantities of Tiger parts and derivatives: counted in seizures of meat and processed products, like medicines, or wine are the most difficult to quantify. The calculation is based on the general premise that 10 kg of bones are determined to

be equivalent to one Tiger. This extrapolation is based on interviews with representatives of the Chinese medicine industry who noted that the annual removal of Tigers from the wild peaked in the 1960s at approximately 300 animals, yielding approximately three metric tonnes of Tiger bone (Jenkins, 2006; Nowell and Xu, 2007). In many cases, the exact dimensions of "skin pieces" and "bone pieces" were not recorded. Hence, seizures containing several skin or bone pieces (with or without other parts) were conservatively considered to represent one Tiger.

2.3 Geographical Analysis

Two different methods were used to analyse location data, where this information was available for reported Tiger seizures. The density estimation mapping technique in ArcGIS was applied to determine any statistically significant clustering in the spatial pattern of the specific location of Tiger seizures. Conversely, the origin, transit and destination points at a country level of Tiger seizures (where available) were analysed using Trademapper.[2] This allows for the identification of countries that play prominent roles in the overall Tiger trade chain.

2.4 Statistical Analysis

Multinomial logit regression models were used to model the categorical response of the nominal outcome variables (countries and commodities) through time (using R package 'nnet'; Venables and Ripley, 2002). Bootstrapped predictions (B = 1000) of temporal trends were calculated for each response category and were used to calculate 95% confidence intervals for the predictions (based on temporal block bootstrap resampling; block length = 3 years). Generalised linear regression models were fitted to test for a change (e.g., increase) in the estimated maximum and minimum number of tigers seized through time (Poisson variance), and the number of incidents through time. A linear regression model was used to test for a change in the number of live specimens traded through time. All data analyses were conducted in the R software environment (version 3.3.1) for statistical and graphical computing (R Core Team, 2016).

2.5 Data Limitations

As noted earlier, only seven of the 13 TRC governments responded with information on Tiger seizures, therefore limiting any comprehensive analysis of scenarios occurring at a national level. While supplementary information (peer-reviewed research, for example) has been used to contextualize the reported illegal Tiger trade picture, the analysis is derived from reported seizures. Given the inconsistent manner in which seizures are recorded and reported across each range country, the data is unlikely to be a complete set. Underwood *et al* (2013) found that the analysis of seizure data alone can be limited due to biases in the seizure and reporting rates. More effort should be made to address this ongoing caveat, in light of the rapidly declining wild Tiger population. This could be remedied by regular and consistent reporting at a Tiger range level and improvements in law enforcement effectiveness. It will be discussed further in this report.

Law enforcement and reporting efforts also differ greatly across each range country and therefore, results should be interpreted with caution. Their respective efforts are greatly influenced by different designated crime priorities and

[2] TradeMapper is an interactive tool originally developed by TRAFFIC and WWF to visualize trade data: https://trademapper.aptivate.org/

strategies within each TRC, consequently this determines the level of resources dedicated to a given problem. To overcome this, this report examines the problem based on (i) the current picture and known information, (ii) contributing factors at a national level for each range country, and seeks to formulate realistic solutions based on these identified findings. Moreover, while TRAFFIC endeavours to adopt a consistent counting method as used in previous years (Verheij *et al*, 2010, Stoner and Pervushina, 2013) to determine the number of Tigers found in trade, it should be noted that this count only represents an estimation.

3.0 RESULTS

3.1 Statistical Analysis at a Tiger range level

During the 16-year period under review from January 1, 2000 to December 2015, a total of 801 Tiger seizures incidents were reported across 13 TRCs. On average, this represents 50 seizures annually. The greatest number of seizures were reported during quarter three (2008-2011), and decreased by 30% (83 seizures) in the most recent quarter (2012-2015) (Table 5).

Table 5: Total Number of Seizures Reported by TRC Broken into Four Quarters (2000-2015)

Country	Q1 2000 - 2003		Q2 2004 - 2007		Q3 2008 – 2011		Q4 2012 – 2015		Total	
Bangladesh	2	1%	1	1%	6	2%	11	6%	20	2%
Bhutan	1	1%	1	1%	1	0%	3	2%	6	1%
Cambodia	3	2%	0	0%	0	0%	1	1%	4	0%
China	11	7%	19	11%	22	8%	26	13%	78	10%
India	116	75%	89	50%	110	40%	40	21%	355	44%
Indonesia	0	0%	13	7%	21	8%	36	18%	70	9%
Lao PDR	0	0%	4	2%	4	1%	1	1%	9	1%
Malaysia	7	5%	5	3%	21	8%	7	4%	40	5%
Myanmar	0	0%	0	0%	1	0%	2	1%	3	0%
Nepal	9	6%	25	14%	36	13%	14	7%	84	10%
Russia	4	3%	6	3%	8	3%	12	6%	30	4%
Thailand	1	1%	6	3%	17	6%	17	9%	41	5%
Viet Nam	0	0%	8	5%	29	11%	24	12%	61	8%
Total	**154**	**100%**	**177**	**100%**	**277**	**100%**	**194**	**100%**	**801**	**100%**

Overall, the highest number of seizures was reported by India, accounting for 44% (355) of all reported seizures. Statistically, the relative proportion of seizure incidents that occurred in India significantly declined through time (slope = -0.04, 95% CI = -0.05, -0.02). There was no statistically significant change in the relative proportion of seizure incidents for any of the other countries through time (Figure 1).

Figure 1: The relative proportion of seizures reported by each TRC through time (average proportion ± 95% CI) from bootstrapped multinomial logit models

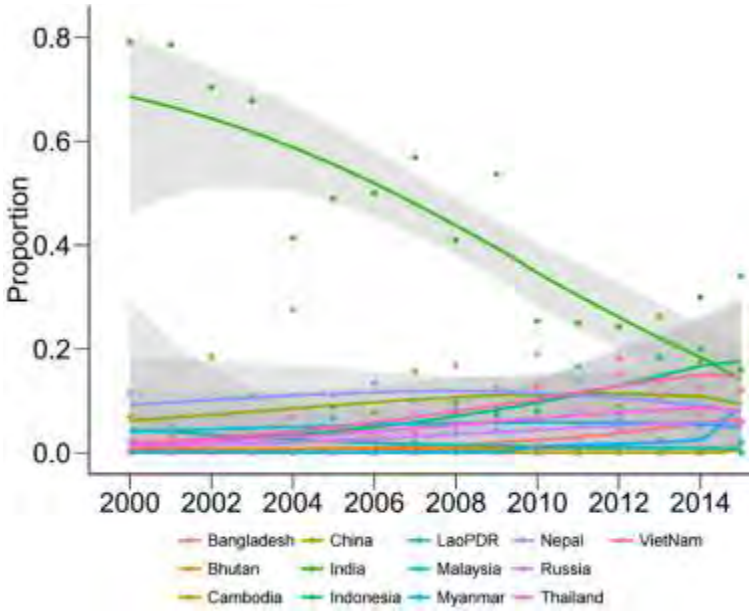
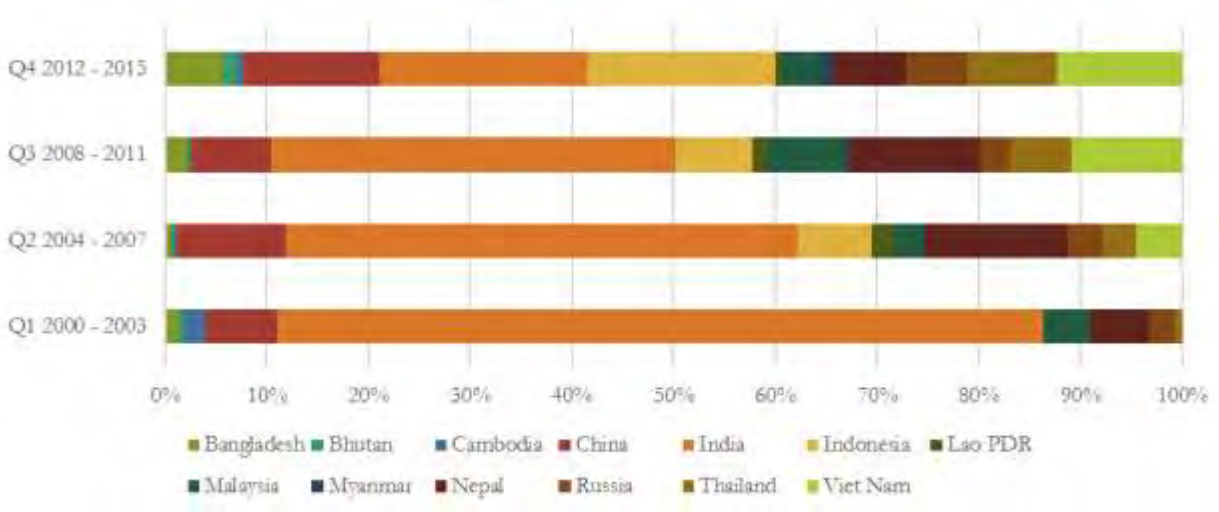


Figure 2 illustrates the proportion of seizures by TRCs across all four quarters. The reduction in India's seizure figures by quarterly period, from 76% (116) of all seizures between 2000 and 2003, to only 21% (40) during quarter four (2012-2015) is evident here. China, Indonesia and Russia, on the other hand, have experienced increases in the number of seizures reported between quarters. Malaysia, Nepal and Viet Nam have not reported a consistent number of seizures and therefore, it is difficult to identify any trends in their data.

Figure 2 The proportion of seizures in each TRC, by quarter



During the period under review, a minimum of 1 755 and maximum of 2 011 Tigers were estimated to have been seized based upon the 801 reported seizures. On average, a minimum of 110 Tigers were seized annually. From this point forward, only the minimum number of Tigers seized will be discussed. As is consistent with the number of reported seizures, the highest number of Tigers were seized during the third quarter (2008-2011), as shown in Table 6.

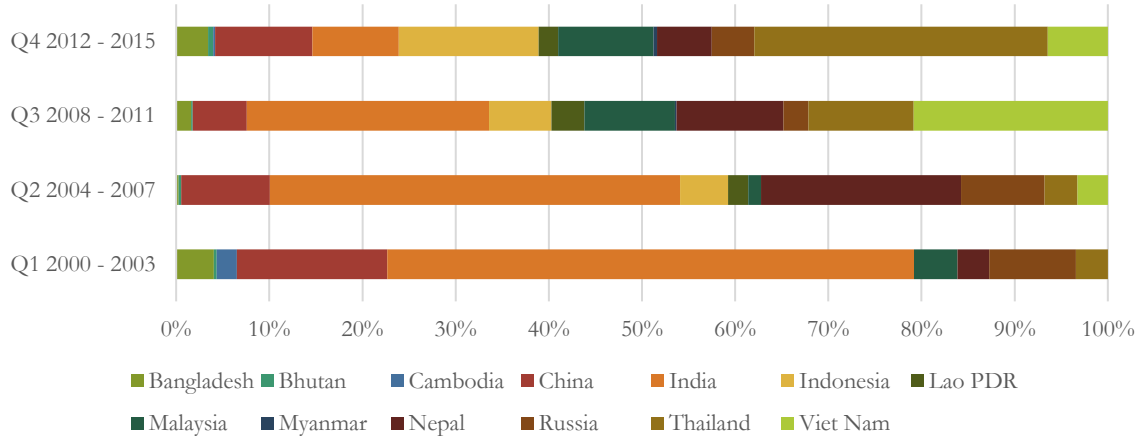
Table 6: Total minimum Number of Tigers Seized Reported by TRC Broken into Four Quarters (2000-2015)

Country	Q1 2000 - 2003		Q2 2004 - 2007		Q3 2008 - 2011		Q4 2012 - 2015		Total	
Bangladesh	13	4%	1	0%	9	2%	18	4%	41	2%
Bhutan	1	0%	1	0%	1	0%	3	1%	6	0%
Cambodia	7	2%	0	0%	0	0%	1	0%	8	0%
China	52	16%	35	10%	33	6%	55	11%	175	10%
India	182	57%	162	44%	147	26%	49	10%	540	31%
Indonesia	0	0%	19	5%	38	7%	79	16%	136	8%
Lao PDR	0	0%	8	2%	20	4%	11	2%	39	2%
Malaysia	15	5%	5	1%	55	10%	28	6%	103	7%
Myanmar	0	0%	0	0%	1	0%	2	0%	3	0%
Nepal	11	3%	79	21%	65	11%	31	5%	186	11%
Russia	30	9%	33	9%	15	3%	24	5%	102	7%
Thailand	11	3%	13	4%	64	11%	166	33%	254	14%
Viet Nam	0	0%	12	3%	116	21%	34	7%	162	9%
Total	**322**	**100%**	**368**	**100%**	**564**	**100%**	**501**	**100%**	**1755**	**100%**

The number of Tigers seized in each incident varies widely, and does not appear to indicate any consistency with the number of seizures being reported for some countries. For example, some countries with the lowest number of seizures may contribute quite a high percentage towards the number of Tigers seized for a particular quarter. In quarter four,

Thailand reported 9% (17) of the seizures, yet accounted for 33% (166) of the Tigers seized. The number of Tigers seized in Thailand and Indonesia had increased through the quarters, but declined significantly in India (Figure 3).

Figure 3: The proportion of Tigers seized each TRC accounts for, by quarter



3.2 Temporal Analysis

During the 16-year period, the total number of reported seizures increased through time (estimate ± SE = 0.97 ± 1.05, t = 0.93, P = 0.37) (Figure 4). Consistent with the longer-term trends of seizures, both the estimated maximum and minimum number of whole Tigers traded per year also increased through time (min: 0.03 ± 0.02; max: 0.03 ± 0.02) (Figure 5).

Figure 4: The generalized linear regression for the number of reported seizures across all TRC (2000-2015)

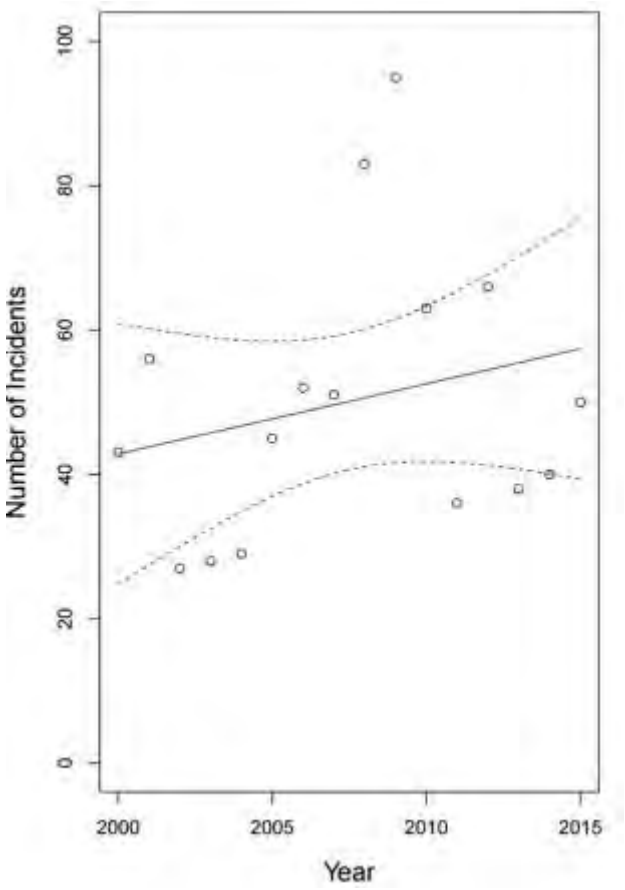
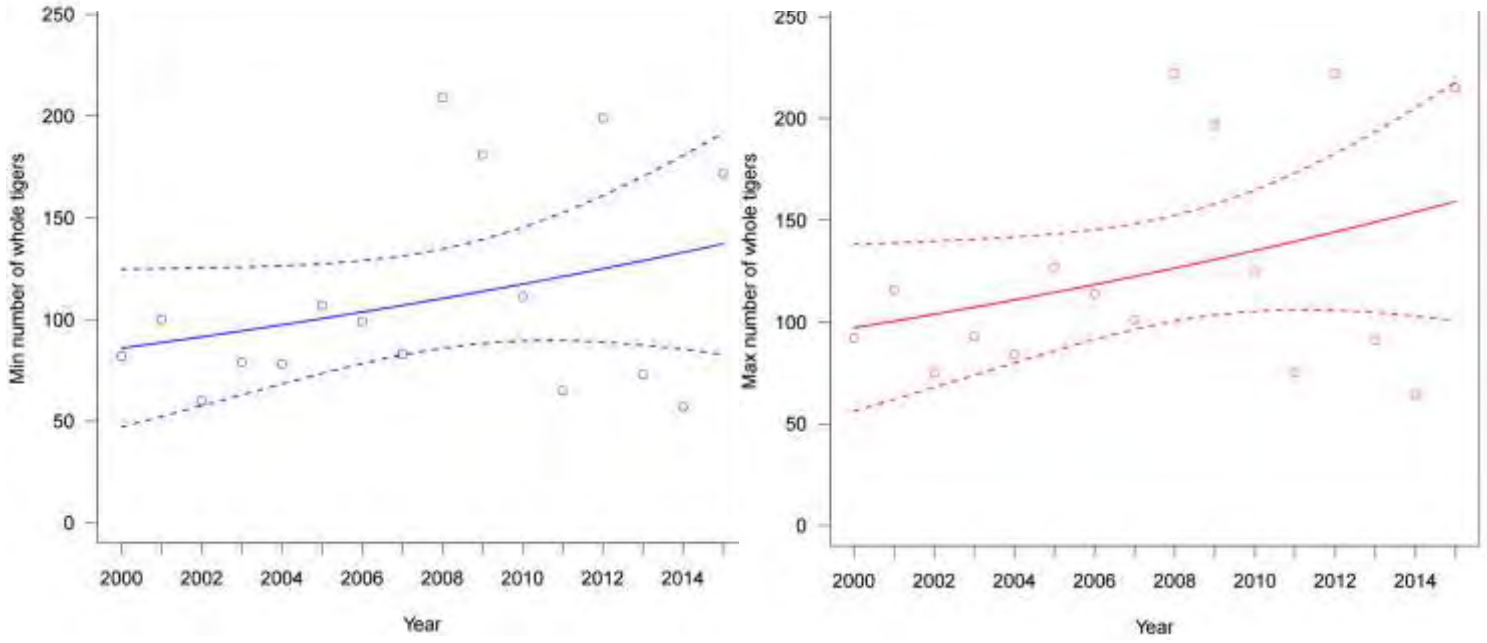
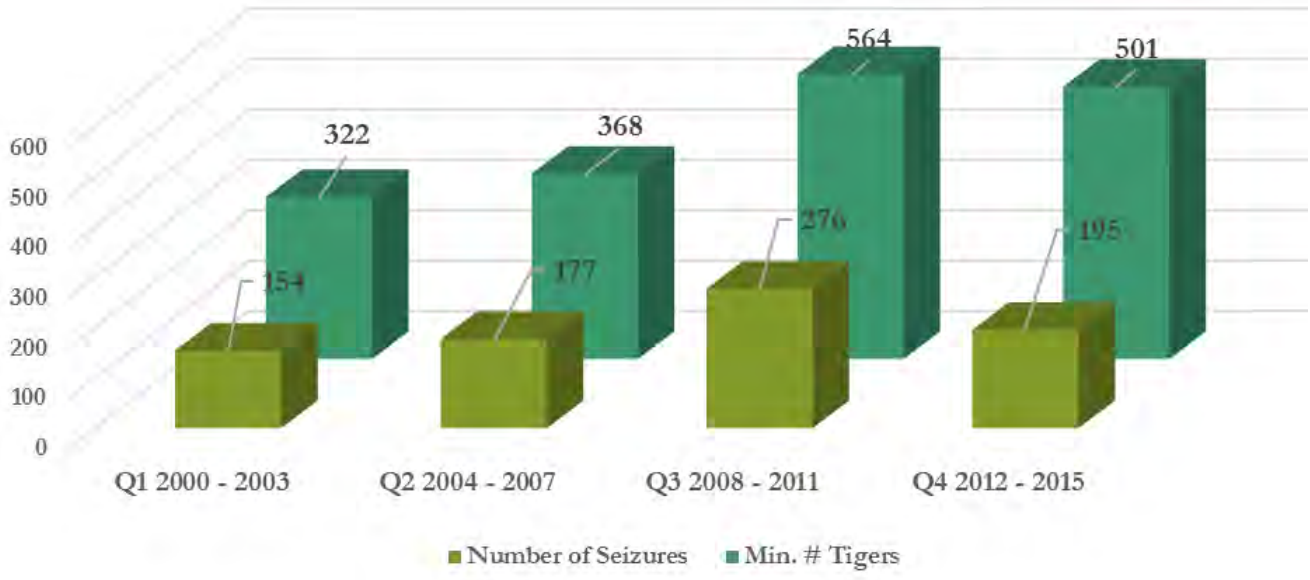


Figure 5: Estimated maximum (a) and minimum (b) number of whole tigers seized (2000-2015)



An examination of both the number of seizures and minimum number of Tigers seized by quarterly period indicates that the greatest number of seizures and Tigers seized were recorded in quarter three (2008-2011) (Figure 6).

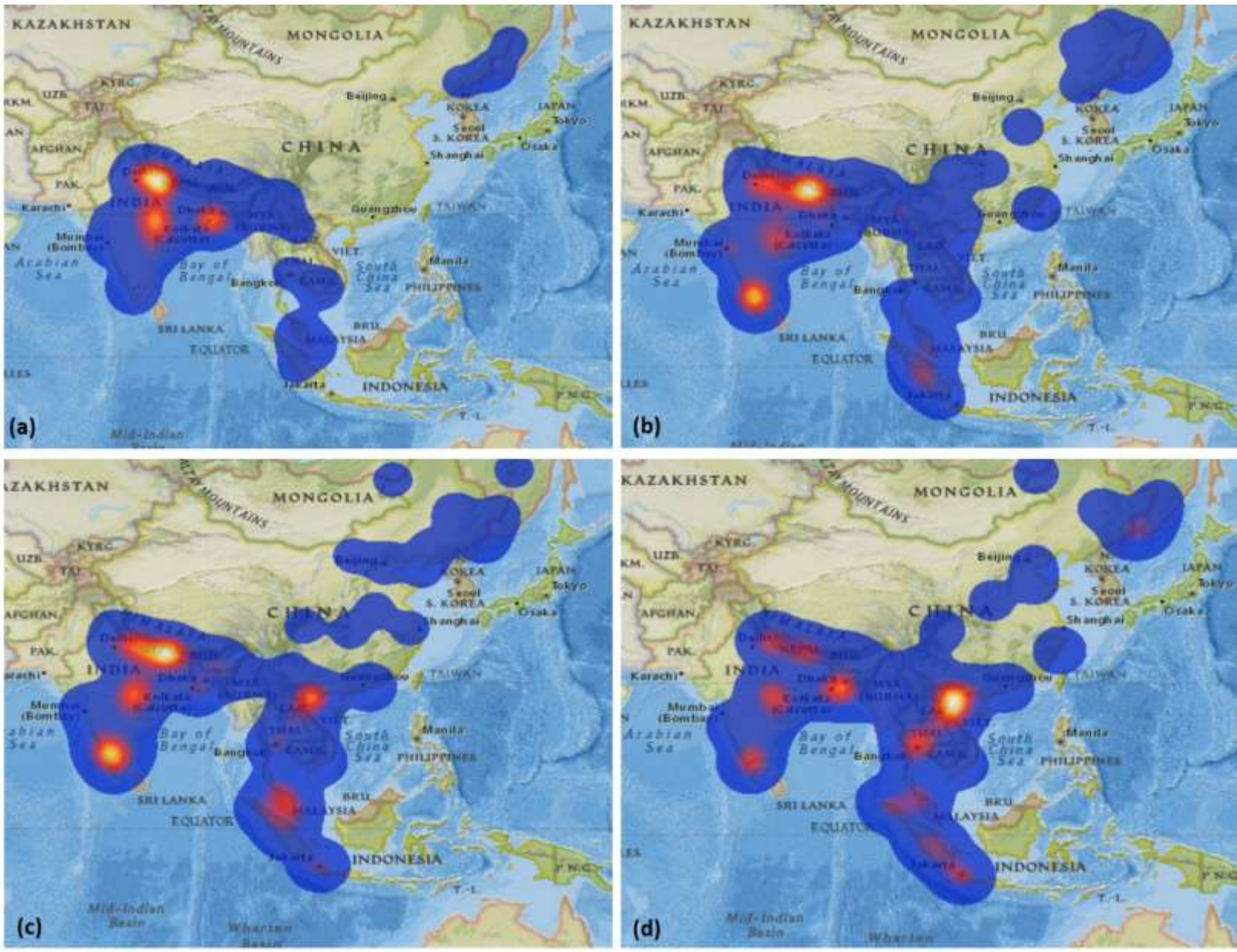
Figure 6: The number of reported seizures and number of Tigers seized by quarter (2000-2015)



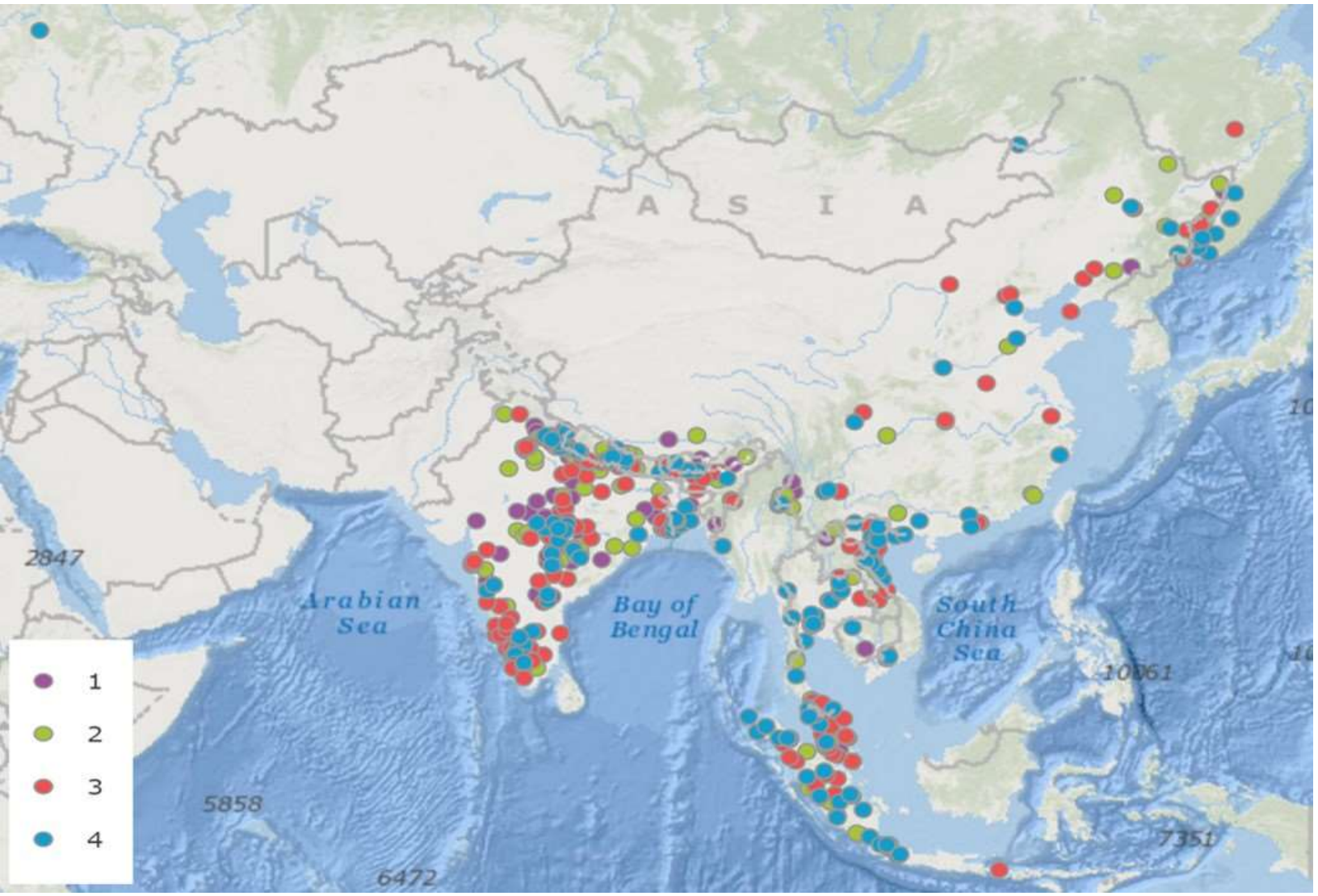
3.3 Geographical Analysis

Where available, the locations of seizures across all TRCs reported during the 16-year period have been mapped. To understand whether geographical clusters of activity have shifted over time, a density estimation technique has been applied to each quarterly period to illustrate persistent as well as emerging hotspots (Map 2). Given that almost half of all seizures have been reported in India, inevitably a greater prevalence of hotspots is present there, as demonstrated by hotspots throughout each quarter. The situation in India is examined in closer detail in the India country profile below.

Map 2: (a) Quarter One (2000-2003); (b) Quarter Two (2004-2007); (c) Quarter Three (2008-2011); (d) Quarter Four (2012-2015)



Map 3: Tiger seizures across TRCs (2000-2015)



Map 3 illustrates all known seizures and has been color-coded according to the quarterly period in which they occurred. At a TRC level, there are prominent clusters on the India-Nepal border and the India-Bangladesh border for all four quarters, which further identifies these areas as targets for law enforcement and investigations. Other clusters of seizures are also identified in Viet Nam (in the north around Ha Noi) and to a lesser extent, in Malaysia, concentrated on Kuala Lumpur and the surrounding area.

3.3 Trade Routes

In addition to plotting the locations of reported seizures, analysis had also been conducted on the routes that Tiger shipments take, from origin to point of final destination, using Trademapper[3]. While route information is not comprehensive and does not comprise a complete dataset, it does highlight some interesting findings, particularly in reference to the seizures occurring in Asia and those that had originated from Africa (Map 4). Tiger farming in Africa is explored in closer detail in the Discussion section. Information on the destination of seizures was available for 99 seizures (13% of the total). Of these, China was identified as the most commonly occurring destination of seizures, or where Chinese suspects were implicated, and accounted for 57% of this total.

Map 4: Extended routes of Tiger seizures by origin, transit and destination points

[3] Trademapper is an interactive tool originally developed by TRAFFIC and WWF to visualize trade data: https://trademapper.aptivate.org/

3.4 Tiger Trade by Commodity Type

The variety of Tiger specimen types and their parts found in trade was examined across the four quarterly periods (Table 7). For complete parts, there has been a marked increase in the seizure of live Tigers in the last two quarters, while the number of whole skins and skin pieces has decreased. More Tiger canines were seized during the last quarter than the three previous quarters combined. Bone, claws, and meat have been recorded in high numbers across all quarters. During the most recent quarter, six gall bladders were seized, compared to none during all the other quarters. Conversely, Tiger genitalia was only observed during the first quarter and not since.

Table 7: Total number of Tiger items seized by quarter

	Q1 2000 - 2003	Q2 2004 - 2007	Q3 2008 - 2011	Q4 2012 - 2015	Total
Complete Parts					
Dead Specimen	17	52	146	50	265
Live Specimen	17	3	64	179	263
Skeleton	34	18	18	5	75
Whole Skin (includes skin pieces)	214	207	191	146	758
Quantities					
Body		1	22		23
Body Part NES (not elsewhere specified)	4	1	9		14
Bone	23	264	256	404	947
Canine / Teeth	26	38	41	227	332
Claw	245	506	267	114	1132
Gall Bladder				6	6
Genitalia	5				5
Head	1		1	5	7
Paw	5	10	18	31	64
Skin Pieces		105	212	13	330
Skull	27	11	27	30	95
Tail			1	9	10
Whiskers				18	18
Kilogrammes					
Bone	417.58	424.67	526.6	324.89	1693.74
Meat	23.7	40		100	163.7
Other					
Unknown				1	1
Wallets				13	13
Wine			10	60	70

Figure 7: Estimated proportional abundances of Commodity Types (2000-2015)

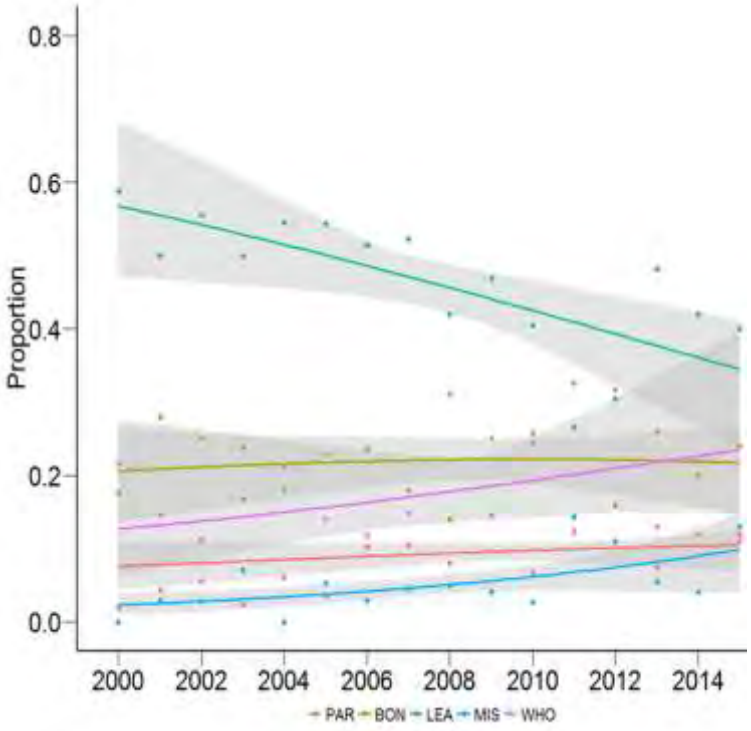


Figure 7 demonstrates the trends through time in relation to the seizure of Tiger commodity types[4], by broader definitions (average proportion ± 95% CI) from bootstrapped multinominal logit models. The seizure of skins has significantly decreased (slope = -0.02, 95% CI = -0.03, -0.01), whilst the seizure of whole bodies (both live and dead) has increased. When assessing the types of commodity seized per country, it is apparent that some TRCs have seized a greater proportion of skins (India and Indonesia) and whole dead specimens (Lao PDR, Thailand and Viet Nam). Figure 8 highlights the prevalence of whole Tigers being seized in parts of the Greater Mekong region including Cambodia, Lao PDR, Thailand and Viet Nam, which barely exists in other TRCs.

Figure 8: Broad commodity type by Tiger range country

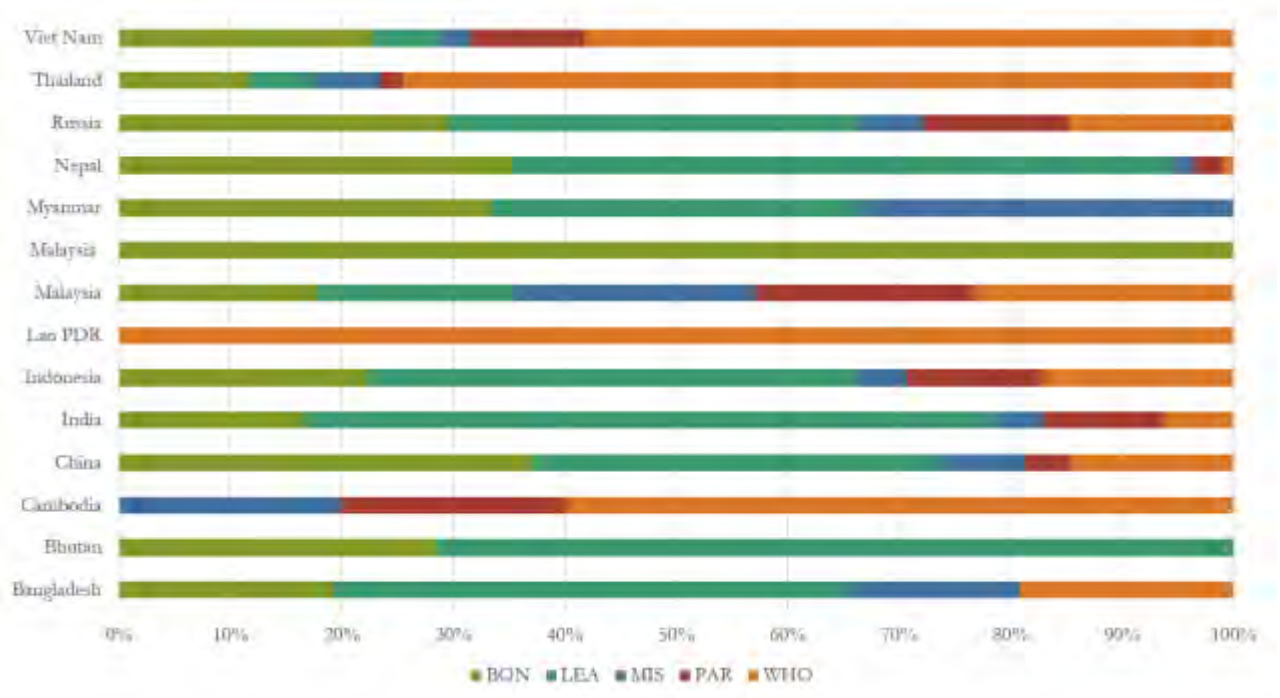
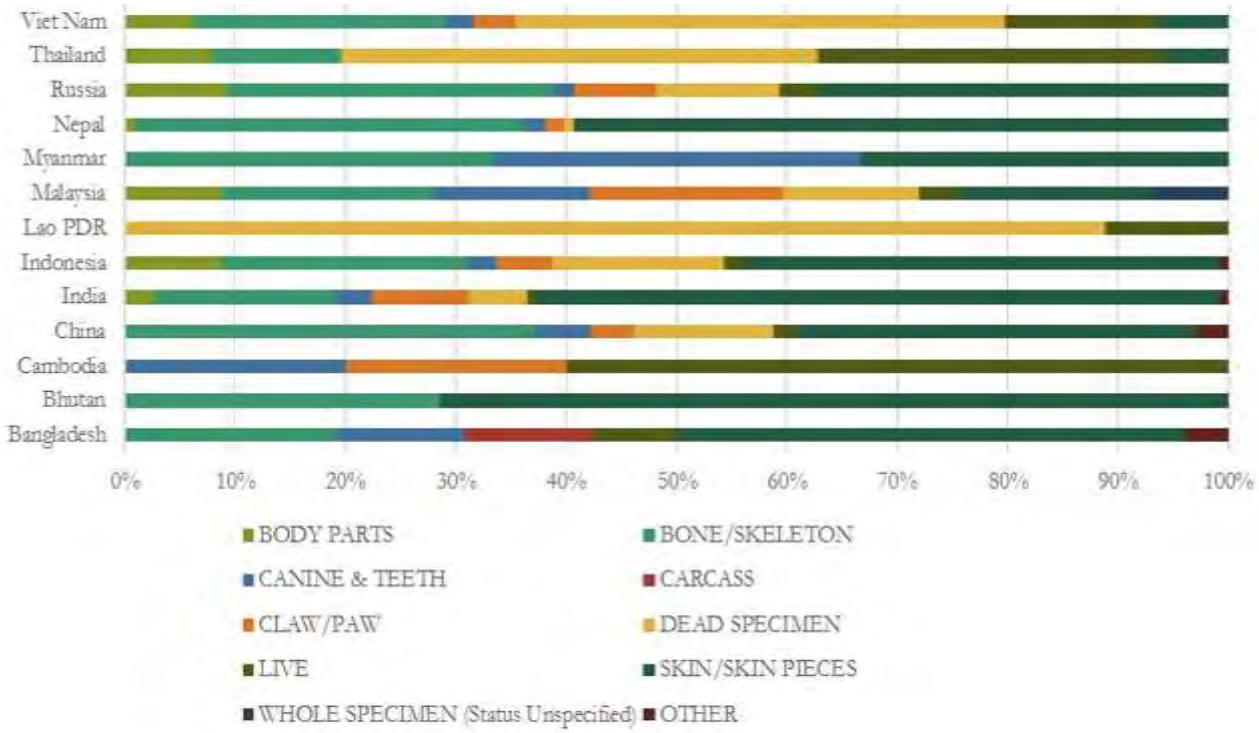


Figure 9 specifies the breakdown of seized commodity type in greater detail per Tiger range country and highlights locations where live Tigers are most commonly seized.

[4] PAR = Parts, BON = Bones, LEA = Skins, MIS = Miscellaneous, and WHO = Whole Tigers

Figure 9: All Commodity Types Seized Per TRC



3.5 Rapid Growth in the Trade in Live Tigers

The increase in prevalence of live Tigers in seizure incidents has been rapid over the 16 years of the captured data. Figure 10 and 11 demonstrates the rate of increase based on the number of incidents and number of live specimens. The generalized linear regression (estimate ± SE = 0.97 ± 1.05, t = 0.93, P = 0.37) for total seizures during the period under review (Figure 10), and the linear regression (estimate ± SE = 0.23 ± 0.14, t = 1.67, P = 0.12) for the number of live specimens (Figure 11) is provided below.

Figure 10: Total Number of Seizures (2000-2015)

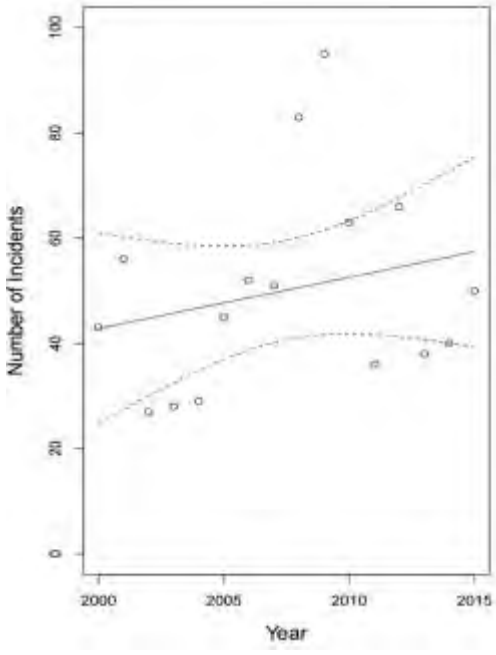
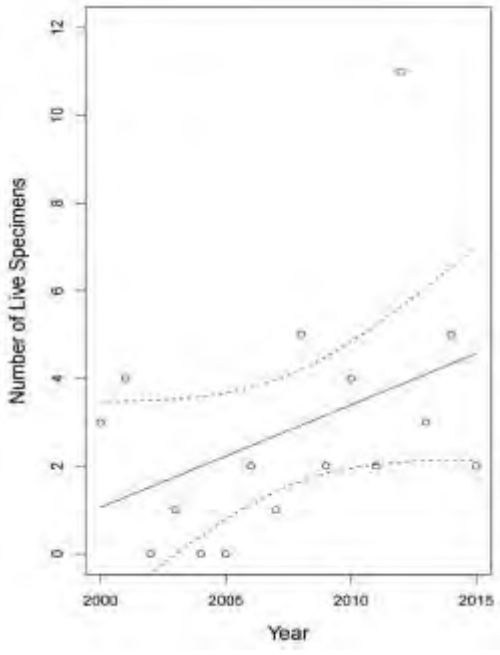


Figure 11: Total Number of Live Tigers Seized (2000-2015)

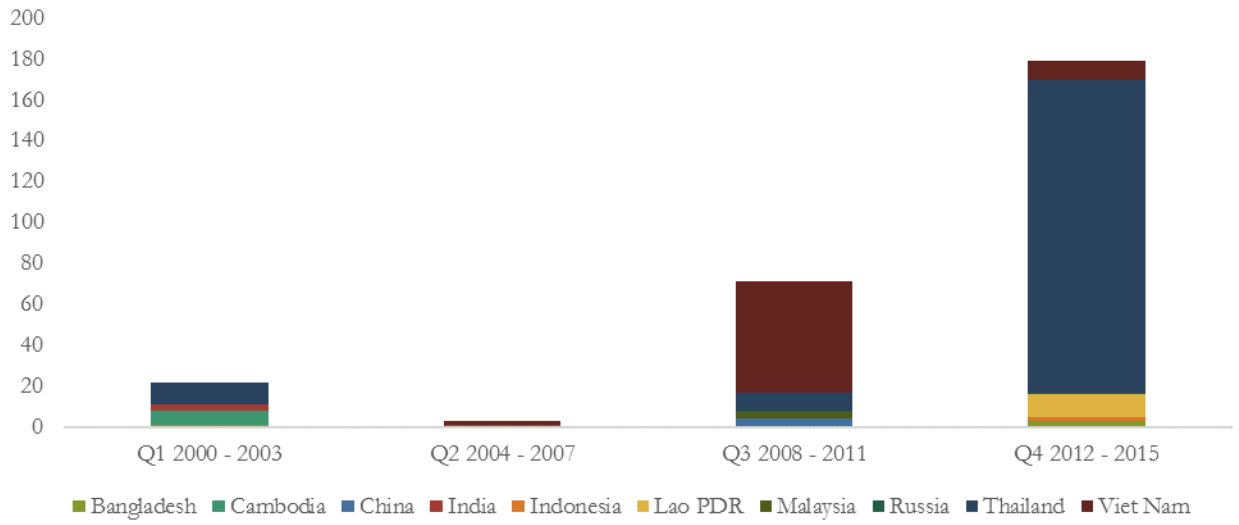


The total number of live Tigers seized by TRCs is provided in Table 8. During the first half of the period under review, from 2000 to 2007, only 17 (6%) live Tigers were seized. This increased to 64 (24%) between 2008 and 2011. During the final quarter, a further 186 (50%) Tigers were seized, but this result is greatly skewed by one incident at the Tiger Temple in Thailand in 2015 when 100 Tigers were impounded. This is examined in closer detail in the Thailand country profile (page 74). Of the 13 TRCs, 10 have reported seizures of live Tigers, while seven of those have reported only single figures, ranging from two to seven live Tigers seized. The countries which have reported a significant number are Thailand and Viet Nam, as illustrated by Figure 12. The analysis of the data highlights a steep increase in the occurrence of live Tiger seizures during the most recent quarter (2012-2015).

Table 8: Total number of live Tigers seized by TRC and quarterly period

Country	Qtr 1 (2000 – 2003)	Qtr 2 (2004 – 2007)	Qtr 3 (2008 – 2011)	Qtr 4 (2012 – 2015)	TOTAL
Bangladesh	1	0	0	3	4
Cambodia	7	0	0	0	7
China	0	0	4	0	4
India	3	1	0	0	4
Indonesia	0	0	0	1	1
Lao PDR	0	0	0	11	11
Malaysia	0	0	3	0	3
Russia	0	0	1	1	2
Thailand	6	0	9	153	168
Viet Nam	0	2	47	10	59
TOTAL	**17**	**3**	**64**	**179**	**263**

Figure 12: Total Number of Live Tigers Seized by Country by quarter



4.0 DISCUSSION

A number of issues, ranging from poor law enforcement co-ordination to inadequate data management, persists in relation to the illegal trade in Tigers. Such challenges are likely to impede the success of realistic solutions towards combating trade unless these complications are fully addressed. Some of the key challenges are discussed in more detail below.

4.1 Lack of Cross-Border Co-ordination

In Nepal, concerted efforts to protect native wildlife have achieved two consecutive years of zero Rhino poaching of rhinos. Clearly this achievement at a national level is recognized as a best practice. Despite this achievement, Tiger poaching continues, particularly in areas close to the border with India which has seen an increase of seizures during 2015. This is deemed to be partially caused by stronger law enforcement efforts in India which has displaced the problem over the border into Nepal (The Kathmandu Post, 2016). Closer collaboration with India in the form of contingency planning may have prevented this displacement. Better co-ordination and information exchange concerning the movements of known poachers as well as alerts when poaching takes place should have been in operation. The South Asian Wildlife Enforcement Network (SAWEN) was established in 2011 as a central mechanism to redress cross-border wildlife trade across its eight member States[5]. However, following its formation, governments have failed to engage in the network and formally ratify the statute, resulting in little cross-border action (SAWEN, 2015). By September 2016, only two Tiger range countries have ratified the statute - India and Nepal, with the total membership standing at four countries (including Sri Lanka and Pakistan), half of the desired eight. More countries must participate in order for the network to be effective. Bangladesh and Bhutan are reported to be considering the proposal at a ministerial level (The Kathmandu Post, 2016).

In Southeast Asia, a previously identified trade route Thailand-Lao PDR-Viet Nam is suspected to be as relevant today as per previous TRAFFIC findings (Stoner and Pervushina, 2013). Some of the seizures reported in Thailand and Viet Nam cite Lao PDR as the source or transit of Tigers. Reports from Viet Nam claimed the Tigers seized had originated from Lao PDR, while some within Thailand state that the Tigers were on route to Lao PDR. For example, in 2013, 16 Tiger cubs were seized at the Thai-Lao border. Incidentally, no seizures were reported within Lao PDR during the most recent quarter (2012-2015), and is likely to be due to low enforcement effort. The 65th meeting of the CITES Standing committee adopted a recommendation requesting these three countries (and Myanmar) review their implementation of *Resolution Conf. 12.5 (Rev. CoP16),* and in particular to *"introduce innovative enforcement methods and, as a matter of priority, strengthen enforcement efforts in key border regions, and develop or improve implementation of regional enforcement networks*" (CITES, 2016b).

[5] Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka

4.2 The Impact of Corruption

The UNODC World Wildlife Crime Report (2016) discusses the influence of corruption on many facets of international wildlife trade and states that "corruption is essential to many contraband flows, and seizures are not made where the relevant officials are complicit". Given the nature of corruption, and the difficulty in illustrating its tangible impact on illegal trade, corruption should remain on the agenda, along with meaningful solutions to address its ongoing presence.

Transparency International (TI) publishes the Corruption Perceptions Index (CPI) on an annual basis, ranking countries "by their perceived levels of corruption, as determined by expert assessments and opinion surveys" and provides each country with a score. A total 168 countries are ranked, with number one being the most corrupt[6]. Six TRCs fall within the top 30 of the most corrupt countries in 2015 (Bangladesh, Cambodia, Lao PDR, Myanmar, Nepal and Russia) (Transparency International, 2016). While some improvements have been made in the scores of TRCs in 2012, most notably in Myanmar whose score has moved from 15 to 22 (meaning a reducing perception of corruption), other countries have seen a worsening score during the same period. Cambodia, China, Bangladesh, and Lao PDR's CPI Index score had worsened in 2015 from their score in 2012 (meaning a rising perception of corruption) (Table 9). In this regard, it is also encouraging that for the first time, the issue of corruption has been raised at a CITES CoP17 (CITES CoP17 Doc.28)[7]

Table 9: TRCs Corruption Perception Index Scores (2012 and 2015)

		Score	Rank	Score in 2012	Trend
1	Cambodia	21	150/168	22	DOWN
2	Myanmar	22	147/168	15	UP
3	Bangladesh	25	139/168	26	DOWN
3	Lao PDR	25	139/168	31	DOWN
4	Nepal	27	130/168	27	NO MOVEMENT
5	Russia	29	119/168	28	UP
6	Viet Nam	31	112/168	31	NO MOVEMENT
7	Indonesia	36	88/168	32	UP
8	China	37	83/168	39	DOWN
9	India	38	83/168	36	UP
9	Thailand	38	76/168	37	UP
10	Malaysia	50	54/168	49	UP
11	Bhutan	65	27/168	63	UP

[6] http://www.transparency.org
[7] https://cites.org/sites/default/files/eng/cop/17/WorkingDocs/E-CoP17-28.pdf

4.3 Poor Data Management

According to country reports submitted to CITES following SC65 request, many TRCs still lack a national system or database to centrally manage Tiger crime data (CITES, 2016a; CITES, 2016b). Table 10 below provides an overview of feedback from TRCs in pursuant to SC65 Doc. 38 regarding the recording of information on illegal trade in Asian big cats (CITES, 2014a). Only five of the 13 TRCs provided some information, with only nominal details however, making it extremely challenging to a) determine if current efforts are adequate and b) determine the type of guidance, support or need in that TRC. Tigernet in India, a publicly accessible system run by the government (www.tigernet.com), is not yet a comprehensive platform capturing all Indian seizures. This is discussed further in the India country profile. The poor collection of such crucial data across all range countries in a standardized and systematic manner is inconsistent with good recording and reporting practices, and will continue to significantly impede any meaningful analysis aimed at understanding the true level of poaching and trafficking. Systematic recording of incidents and supporting information is essential to establish baselines of data which in turn, will facilitate the development of practical solutions to target problems identified. The analysis of such information will enable intelligence-led planning to ensure that limited resources are deployed effectively.

RECOMMENDATIONS

Pursuant to CITES CoP *Decisions 16.68 to 16.70 on Asian big cats (Felidae spp.)*, all TRCs were required to ”provide information on incidents of poaching of and illegal trade in all Asian big cat species, including their parts and derivatives, which will enable the compilation of a report for the law enforcement community” as well as ”gather information on incidents of poaching of and illegal trade in all Asian big cats since the beginning of 2010, undertake an analysis of the information, and prepare a report for the law enforcement community to be circulated in a restricted fashion to relevant enforcement agencies and range States”. This is clearly not yet in place.

Maximizing Data Collection

TRCs must have a good basic data collection plan in place to enable the information cycle. In order to gain true insight into how killings and trading in tiger products are related and the chain in between, it is necessary to undertake a specific drive to obtain information on this and to operate in an intelligence-led manner. The benefits of such an initiative include:

- Identification of crime enablers and the profiling of the illegal Tiger trade;
- Determination of the direction in which resources should be concentrated based on the identification of need;
- Facilitation of recommendations in the context of prevention, intelligence and enforcement;
- Effective monitoring and evaluation of initiatives and targets.

Sharing of Intelligence

Information sharing needs to be a two-way reciprocal process, but can and should have huge benefits for each organization and include:

- Enhanced inter-agency relationships / mutual support
- Ensuring connectivity between the local / national problem
- Forming part of overall risk assessment
- Cross referencing data (to catalyze early alerts)

Table 10: Summary of feedback from TRCs on Notification to the Parties No. 2013/037 on the Implementation of Resolution 12.5 (Rev. CoP 16)

Responses by TRCs on Question 4: Recording of Information	**BD**	**BU**	**CN**	**ID**	**IN**	**KH***	**LA**	**MM**	**MY**	**NP**	**RU**	**TH**	**VN**
Has your country put in place a national system for recording information on the illegal trade in Asian big cats? If 'yes', please indicate:	X	X	X	Yes	Yes	No	X	X	Yes	X	X	Yes	
a) what sort of data is recorded;				No response	Tigernet: India has launched a unique system of online reporting of Tiger mortality/poaching/seizure/trade relating to Tigers in association with the TRAFFIC-India www.tigernet.in). Number/place of Tiger mortality/ body parts seizure are available in public domain while other details relating to investigation and prosecution are available to registered users like officials of Tiger reserves. Data collected is regularly analyzed.				Wildlife related offences				Yes
b) how the data is collected;				No response					Monthly and ad hoc basis			Forestry and Wildlife seizure data collection form	From reports of enforcement agencies
c) which authorities are authorized to enter information into the system;				No response					Department of Willdife and National Parks				Enforcement agencies
d) whether the data is analyzed;				No response					Yes				Not yet
e) any other relevant information.				No response					Not applicable				

X: Did not submit a report

* Cambodia has had very few Asian big cat seizures

4.4 Potential Fake Tiger Products in Circulation

A major Tiger seizure in Malaysia in 2015, believed to be one of the largest in the country, was later found to have been made up entirely of fake products. The seizure consisted 1 241 units of parts claimed to be from Tigers, including five skins, 471 claws, 17 paws, 25 teeth and 309 pieces of skin, as well as elephant tails (The Star, 2015; TRAFFIC, 2015). This incident appeared to point to the presence of a highly organized operation. The suspects were Indian nationals, and the original report claimed that the parts were from Tigers in India and had been smuggled into Malaysia primarily to service local consumption for such products, such as jewellery and curios. Subsequently, the Tiger skins were reportedly found to be dog skins that were painted and imported into Malaysia from India. The use of dog skins purporting to be Tiger skins had been detected previously in India and is not a new trend (Sinha, 2008; The Hindu, 2015). Open source research and seizure data points to a greater tendency of fake products, particularly skins, in India although there is suspicion that the problem may be more widespread. Table 11 provides an example of some of these types of seizures during 2007-2016, with most cases reported in India, and one in Malaysia. Little evidence of fake products was detected in other TRCs, but it could be more prevalent than indicated by the reported information.

Table 11: Examples of seizures of Fake Tiger Products Detected in Trade

Year of Seizure	Country of Seizure	Fake Tiger Parts	Comments
2016	India	8 nails; 1 paw	Nails were carved with moulded plastic with hoof appendages of a goat and pasted with bull's skin
2015	India	1 skin	
2013	India	Skins	Suspects belong to nomadic tribe
2013	Malaysia	5 penises	Pig part
2012	India	1 skin	Another animal skin painted
2011	India	1 skin	Suspects described as a fake tiger skin racket
2010	India	Skins	Four suspects
2009	India	58 skins	Suspects belong to the Hakki Pikki tribe and Customs seize 58 fake tiger skins enroute to Bangkok
2007	India	3 skins	Painted dog skins
2007	India	10 skins	Painted dog skins

5.0 THREAT ASSESSMENTS

Two significant enablers are believed to have had a great impact on the patterns of contemporary illegal Tiger trade: the rise in illegal and unregulated Tiger breeding farms as a source of supply; and the internet as a tool facilitating trade.

5.1 Tiger Farming

There are now more than 200 tiger breeding centres across Asia (EIA, 2016). These centres of varying size, spread across China, Lao PDR, Thailand and Viet Nam, jointly house between 7 000-8 000 captive Tigers, far more than the estimated 3 900 Tigers left in the wild (WWF, 2016). Tiger farms in the lower Mekong countries of mainland Southeast Asia – particularly Lao PDR, Thailand and Viet Nam – are the most controversial with regard to illegal trade. In its report to the 65th meeting of the CITES Standing Committee, the CITES Secretariat reported that 74% of Tiger specimens seized in Southeast Asia occurred in three countries, Lao PDR, Thailand and Viet Nam, which raised concerns about the source of Tigers for illegal trade due to the presence of breeding facilities there (CITES, 2016a). Analysis of the reported seizures highlights the prevalence of live Tiger trade in Thailand and Viet Nam. Furthermore, the number of Tigers in captivity in Southeast Asia is increasing. In Lao PDR, Thailand and Viet Nam alone (the top three countries with the estimated highest volume of captive Tigers in Asia, after China), it is estimated that there are up to 1 300 captive Tigers housed in various facilities; 289 in Laos PDR (EIA, 2015, Target, 2009), 830 in Thailand (News.com.au, 2016) and 180 in Viet Nam (EIA, 2016). In Thailand, this figure has risen by 49% since 2007 (Asian Correspondent Staff, 2016), while in Viet Nam, it has increased by 122% since 2010 (EIA, 2016). Moreover, it is estimated that 54% of the Tigers seized in China, Lao PDR, Thailand and Viet Nam originate from captive sources (EIA, 2016).

Indeed, 40% of seizures reported in Thailand for 2012-2015 was from a single seizure at the Tiger Temple, also known as Wat Pa Luang Ta Bua, in Kanchanaburi Province. This generated a great deal of attention following the initial seizure of 100 live Tigers in February 2015 (Rahman, 2015; Reuters, 2015). Subsequent to this, follow-up investigations by Thai authorities resulted in the removal of another 137 live Tigers in May 2016 (Olan and Gigova, 2016; Vidal, 2016). The first raid occurred following claims of animal abuse and suspected illegal activity which were later proven to be true, along with the revelation of the involvement of the Temple in illegal Tiger trade. This is examined in closer detail in the Thailand country profile in this report. Accusations that Tigers from the Temple had been loaned to a facility in Lao PDR were reported in the media, and suggest a network of captive Tiger facilities in the region. This one case serves to confirm fears about the tourism industry's participation in illegal trade, and that these establishments are a front to conceal the true business assets. Thailand has since announced plans to inspect a further 30 premises nationally. In early June, the Hua Hin Zoo was raided and 100 protected animals (including two Tigers) were removed over allegations that these removed animals had been acquired illegally (The Nation, 2016). This proactive enforcement approach is to be applauded, given the likelihood that these establishments have already contributed to keeping demand afloat by supplying parts for trade. It is also suspected that Tigers bred at some of these facilities are being used as starting stock for others in the region (Sinha, 2012).

The reported seizure data allowed TRAFFIC to further examine those that were reportedly from captive sources, with a total minimum of 297 Tigers over the assessed period (Table 12). Data shows an increase in the presence of whole Tigers (both live and dead/frozen) being seized from these facilities. Given the low likelihood that all Tigers found in trade originate from only wild sources, farms and breeding facilities as a source of Tigers entering the trade chain, as well as a lack of regulation that allow this to occur, requires careful consideration. Although not assessed to be a statistically significant rise, these seizures are most pronounced in Lao PDR, Thailand and Viet Nam, and are mostly linked to Tigers coming from captive facilities.

Table 12: The estimated number of Tigers seized that are suspected to be from captive sources (2000-2015)

Country	Suspected Captive Source (Q1) 2000-2003	Suspected Captive Source (Q2) 2004-2007	Suspected Captive Source (Q3) 2008-2011	Suspected Captive Source (Q4) 2012-2015	Total from Captive Source
Cambodia	7	0	0	1	8
China	0	0	4	2	6
Lao PDR	0	0	17	11	28
Malaysia	0	0	22	0	22
Thailand	0	3	38	131	172
Viet Nam	0	6	46	9	61
Total	**7**	**9**	**127**	**154**	**297**

The government of Viet Nam monitors Tiger breeding facilities under Decree No 32/2006/ND-CP: Management of Endangered Precious and Rare Forest Plants and Animals. Currently, 10 such facilities (government and privately owned) are registered (Associated Press, 2012; Ives, 2012), with Tiger numbers being held at such captive facilities reportedly increasing in recent years (EIA, 2016). Education for Nature Viet Nam (ENV), a non-government organization based in Viet Nam, conducts bi-annual inspections at these facilities on behalf of the government and has done so since 2007. In May 2016, ENV documented an increase in numbers, stating there were then about 180 Tigers in private farms and zoos, and suggested that most of these facilities were engaged in illegal activities, including the selling of cubs and laundering of Tigers through farms into the trade (EIA, 2016). ENV has openly expressed concern over the need for the government to exert greater control over captive Tiger numbers while they are still low. In Viet Nam's report to the CITES Secretariat on the Notification to the Parties No. 2013/037 on the Implementation of Resolution 12.5 (Rev. CoP 16), regarding whether there were any captive breeding of Asian big cats in Viet Nam, its answer was "no" without any further elaboration (CITES, 2014b). This requires clarification from the government of Viet Nam.

RECOMMENDATION

The CITES *Decision 14.69 on Asian big cats (Felidae spp.)* directs Parties with intensive operations breeding on a commercial scale to implement measures to restrict captive populations, and for Tigers, parts and derivatives not to be meant for trade. Given the involvement of, and reported allegations against, captive facilities as well as suspicions on the true motives behind such operations, affected countries, particularly TRCs, should **investigate all breeding centres for involvement in illegal activity, and close facilities where** there is evidence of such occurrence. Viet Nam is also encouraged to expedite the enactment and enforcement of its Penal Code, to better equip the judicial system to tackle this problem.

To monitor the numbers of Tigers being bred in such facilities, and to prevent more Tigers from being leaked into trade, DNA profiles should be taken from all Tigers held in captivity. These samples should be recorded and managed in a centralized database. Samples from seized Tigers can then be taken and cross-referenced with the database, to corroborate or refute claims that Tiger breeding in such facilities is supplying trade.

5.1 Tiger Farming in Africa

A 2015 TRAFFIC report, Bones of Contention, explored the growth in the Lion *Panthera leo* bone trade (Williams *et al*, 2015). The findings highlighted an exponential growth in the export of Lion bones out of South Africa. Between 2008 and 2011, a total of 1 160 skeletons were permitted for trade by the South African government with 987 specimens (85.1%) going to Lao PDR. Other findings in the report point to the use of Lion bones as a substitute for Tiger bones in Asia. This is based on the anatomical similarities between Tiger and Lion bones, and a lack of expertise to differentiate between the two. This subsequently increases the risk of a higher number of Lions bones being smuggled into Asia from Africa. In January 2014, a seizure was made at Viet Nam's Noi Bai International Airport of 40kg of wild animal bones, initially suspected to be Tiger. These were found hidden inside a box beneath cigarette and sunflower seeds (Haiguan Online, 2014). The contraband, which had been discovered on board a flight from Moscow, Russia, was later determined to be Lion bones (Thanh Nien, 2014).

Tiger breeding in farms in South Africa is reportedly expanding, with an estimated 280 captive Tigers currently housed in at least 44 different facilities (Williams *et al.,* 2015). In 2015, two Tiger seizures occurred in TRCs where the shipments had originated from Africa, the parts of which could only have originated from captive sources. In the first case, the Customs of China seized in Kunming one Indochinese Tiger *Panthera tigris corbetii* skin, 7.7 kg of Tiger bone, 9.7 kg of African White Rhino *Cerathotherium simum* horn and 1.8 kg of ivory products recovered from checked luggage (General Administration of Chinese Customs, 2015; Robin Des Bois, 2015). The two passengers had arrived in China from Johannesburg via Hong Kong. The second incident involved a more convoluted journey after a Vietnamese national was arrested at Siem Reap International Airport, Cambodia, and found to be in possession of 15 Elephant tusks weighing 43 kg, 11 pieces of dried elephant tails weighing 1.9 kg and 0.2 kg of Tiger claws and teeth (Sony, 2015). The journey had begun in Angola and transited through Ethiopia and South Korea before reaching Cambodia. Details of how the Vietnamese national had planned to reach home from there were not available but it is suspected that Cambodia was chosen as the disembarkation point as fewer seizures occur there in comparison to Viet Nam. For example, there were 63 Tiger seizures reported in Viet Nam between 2000 and 2015, and only four reported in Cambodia in the same period.

RECOMMENDATIONS

Investigate the Tiger trade in South Africa, including an assessment of the *ex-situ* Tiger population, consumptive and non-consumptive utilization, national and provincial legislation with respect to keeping and hunting exotic animals, and the inappropriate use of CITES Appendix II permit to trade products.

Since it is not currently possible to determine whether CITES Appendix I Tigers are being illegally shipped as Appendix II Lion bones, spot checks and DNA tests of the exported consignments should be conducted to determine whether a skeleton is that of a Lion or Tiger. The relevant officers could be provided with DNA collecting kits and trained to collect tissue in a manner that would be acceptable to the justice system.

The reported Tiger seizure picture provides little insight into the extent of Tiger parts in trade originating from Africa. It may be useful to investigate the use of South African seaports as a gateway for Lion and Tiger product exports.

5.2 Online Trade and Social Media as an Enabler

Figure 3: Tiger cubs offered for export from Malaysia

Illegal wildlife trade on the -internet has become a persistent challenge over the past few years, particularly because of its ability to change form rapidly, its wide reach and ability to connect people (Nijman and Stoner, 2014). In 2010, a Tiger skin was advertised for sale on a Chinese-language online auction site. The suspect attempted to sell the skin for 2.8 million Taiwanese Dollars (approximately USD 96 400) (Stoner and Pervushina, 2013). A study over a six-week period in 2014 found over 33 000 endangered wildlife, parts and products from CITES Appendix I and II-listed species advertised for sale online in almost 9 500 posts in 16 countries (IFAW, 2014). Another study examining the trade in tortoises and freshwater turtles in Malaysia found that a majority of the trade conducted online had shifted from commercial web portals to social media from the beginning of 2012 (Bouhuys and Van Scherpenzeel, 2015). This research found that all online advertisements within the period of 2005-2008 were on posted on classified ad websites, after which these advertisements would spread out to forums, and pet shelter groups. In 2011 and 2012, however, social media platforms began to emerge, accounting for an approximate 10% to 18% of the online trade. These numbers then shot up to almost 70% in 2013, and continued to increase.

A study in China from July 2011 to July 2012 found over 9 000 listings of Tiger products during routine online monitoring from at least 114 websites (IFAW, 2012). Social media trade research carried out by TRAFFIC in China over one month in 2014 found various wildlife parts for sale, including thousands of worked ivory products, at least 77 rhino horn (including entire horns or horn pieces ad worked products) (Yu and Jia, 2015). In 2014, authorities in Jakarta confiscated a 26.5 by 30 cm piece of Tiger skin which a trader had purchased for IDR4 million (USD331) via Facebook and was attempting to re-sell. This case shows that trade online has enabled the sale of smaller items, such as Tiger canines and claws, likely driven by the fact that they can be delivered in the post innocuously. They remain highly desired and therefore valuable. The use of social media to conduct illegal activity was again illustrated when TRAFFIC undertook a rapid assessment monitoring of several Facebook pages in Peninsular Malaysia (Krishnasamy and Stoner, 2016). This study uncovered a significant undercurrent of demand for exotic wildlife as pets, half of which was deemed to be illegal. Although no Tiger parts were found for sale, research conducted on one of the identified traders found that he was also offering to export Tigers out of Malaysia on Facebook (Figure 13). More recently, authorities in Malaysia arrested a man for advertising the sale of a Tiger cub on Facebook (2016).

Tiger seizure analysis during the most recent quarter (2012-2015) shows that both Tiger canines and paws were more frequently seized, compared to the number of Tigers being seized. From 2012-2015, 252 Tiger canines were seized compared to only 41 between 2008 and 2011, while paws have increased to 31 compared to 18 seized in the same period.

There is not enough information available to determine the extent of serious and organized Tiger trade occurring online or on social media such as Facebook or Instagram. Social media platforms lend themselves well to trade in curios and jewellery derived from Tiger products (Stoner, 2014). A cursory search for Tiger products for sale on Facebook in Viet Nam found an advertisement for Tiger claws being openly offered (Figure 14).

Figure 14: Tiger Claw for Sale on Facebook in Viet Nam

Social media, especially sites that have restricted access features, facilitate communication between traders in a non-detectable way. In April 2016, WhatsApp (owned by Facebook) reported that the messaging service would be fully encrypted, creating greater challenges for law enforcement agencies to monitor and detect illegal activity (Naughton, 2015).

5.3 Legislation protecting Tigers in TRCs

Effective and deterrent law enforcement can only take place when legislation protecting Tigers are in place. Resolution Conf. 8.4 (Rev. CoP15) on National laws for implementation of the Convention gave basis for the CITES National Legislation Project, an initiative to assess the effectiveness of legislation of the Parties and their capacity in implementing the Convention. National legislation was analyzed by the CITES Secretariat, in consultation with the Party concerned and placed into one of three categories:

- Category 1: legislation that is believed generally to meet the requirements for implementation of CITES
- Category 2: legislation that is believed generally not to meet all of the requirements for the implementation of CITES
- Category 3: legislation that is believed generally not to meet the requirements for the implementation of CITES.

The CITES Secretariat noted that more than half of the 28 Asian big cat range States required legislative improvements. More than half of the TRCs' legislation were assessed to be in Category 1, making that seven countries (Table 13).

Table 13: Tiger Range Countries CITES Category Assessment

Country	CITES Secretariat Category Assessment
Bangladesh	2
Bhutan	3
China	1
Indonesia	1
India	2
Cambodia	1
Lao People's Democratic Republic	3
Malaysia	1
Myanmar	3
Nepal	3
Russia	1
Thailand	1
Viet Nam	1

These categorizations reflect a mix of flaws and the need for more affirmative action in mandating countries to amend their legislation in a time-bound manner, in order to be able to comply with the Convention. Indonesia's law, for example, affords protection for the Sumatran Tiger *Panthera tigris sumatrae* and the now extinct Javan Tiger *Panthera tigris sondaica*. However, it is legally crippled if Tiger seizures within the country involve the import or export of wild Tigers originating from other TRCs, or violations by a Zoo or facility holding non-native Tigers. This significant loophole in fact warrants the CITES Category 1 for Indonesia to be replaced with a Category 2 ranking until it is amended to provide full protection to all sub-species of Tigers. Despite such a loophole, its legislation have been recognized by the CITES Secretariat as Category I. In Lao PDR, the maximum fine for any wildlife crime (including those involving Tigers) in Lao PDR's Wildlife and Aquatic Law 2007 is a maximum of USD25. This clearly serves as no deterrent to prevent crime and in no way, considers the seriousness of organized wildlife criminality.

RECOMMENDATIONS

A comprehensive re-assessment of the CITES National Legislation Project for Indonesia, Lao PDR, Thailand and Viet Nam is needed as a matter of priority, including a critique on their adequacy to implement CITES. These countries have been selected on the basis of gaps and weaknesses in their legislative provisions, such as low penalties and deterrents to illegal activity. This re-assessment should include elements of the law that consider at minimum, the following areas: 1) protection against the hunting, use of and trade in all Tigers (including all sub-species) which effectively affords protection for wild Tigers across all TRCs and allows TRCs to fully and adequately implement CITES, 2) adequacy of penalties provided by law, 3) captive breeding regulation (accounting for all Tiger species including at the sub-species level), 4) registration of privately-held stocks and the prevention of leakage into the market, and 5) control of products and medicines containing or claiming to contain Tigers. To stem the issue of laundering and leakage regarding captive-bred Tigers, countries that have captive breeding facilities or operations should as a matter of urgency revise their legislation to include non-native Tigers (and other Asian big cats). Viet Nam is also encouraged to expedite the enactment and enforcement of its Penal Code to better equip its judicial system to tackle problems relating to illegal tiger trade.

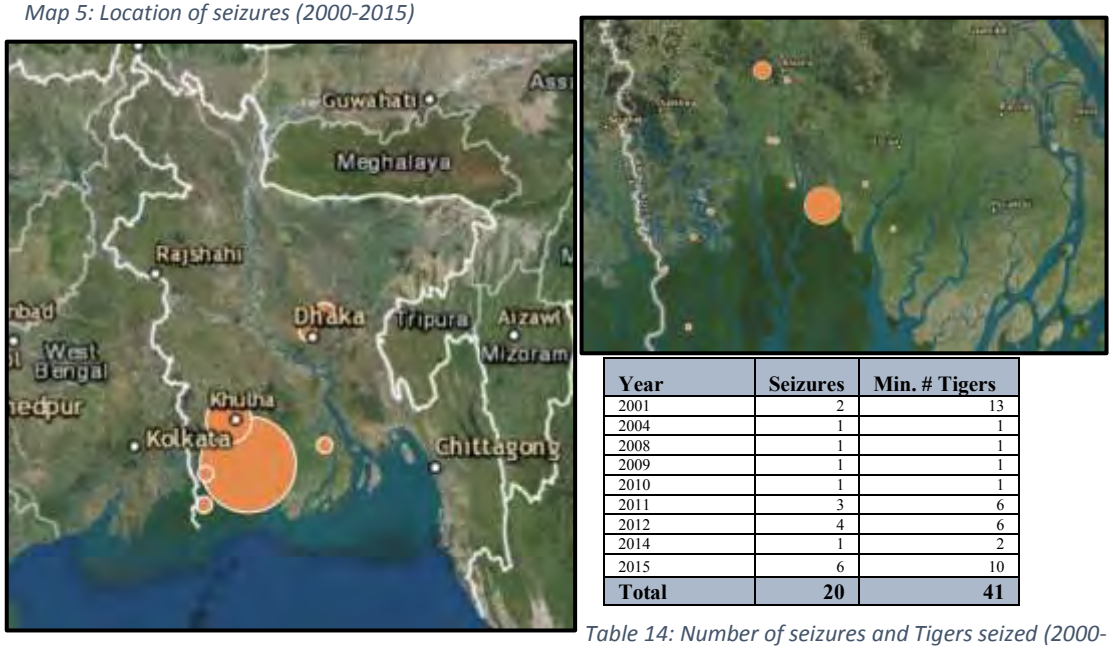
6.0 COUNTRY PROFILES

Trade dynamics as well as the status of Tigers differ by Tiger range country. The following chapter explores the situation within each TRC. The 16-year period under review allows for an observation of long-term trends in each country as well as emerging problems. Where appropriate, recommendations have been made based on the identified findings.

6.1 Country Profile: Bangladesh

Based on 2004 census figures, Bangladesh was reported to have a relatively healthy wild Tiger population, estimated at around 440 individuals. At that time, this represented the third highest Tiger population of all TRCs (Dey, *et al.,* 2015). The most recent census conducted between 2014 and early 2015 used a more robust, spatially explicit and reliable method, and had raised doubts about the accuracy of the earlier census (Agence France-Presse, 2015; Dey, *et al.,* 2015). In 2016, the estimated count sits at 106 individuals, representing just 3% of the global total and placing Bangladesh 7th of all TRC Tiger populations.

Map 5: Location of seizures (2000-2015)



Year	Seizures	Min. # Tigers
2001	2	13
2004	1	1
2008	1	1
2009	1	1
2010	1	1
2011	3	6
2012	4	6
2014	1	2
2015	6	10
Total	**20**	**41**

Table 14: Number of seizures and Tigers seized (2000-2015)

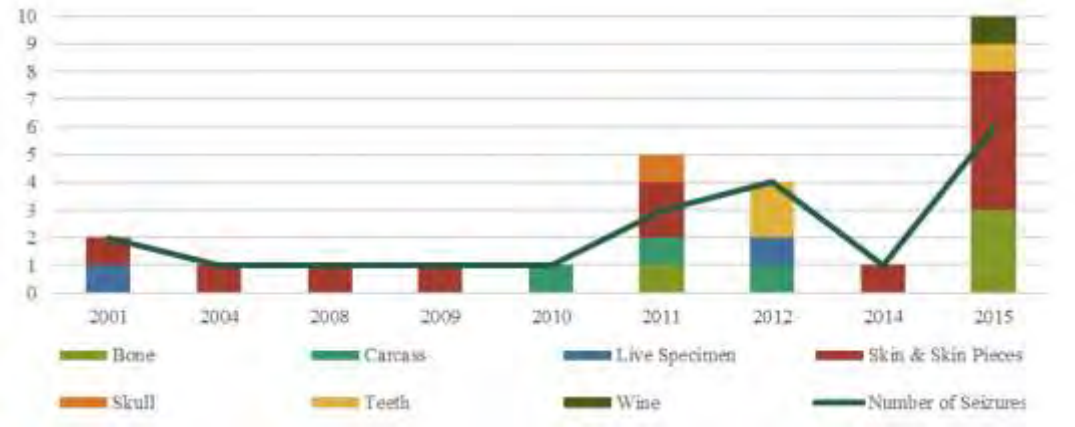
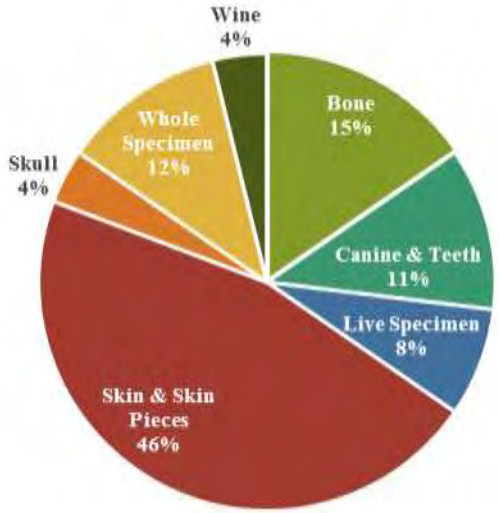


Figure 16: Commodity Type by Year

Bangladesh reported 20 seizures during 2000 - 2015, accounting for 2.4% of the total number of seizures. The majority of these were for just one commodity type (skin), with only four seizures involving more than one Tiger. Overall, an estimated minimum of 41 Tigers and a maximum of 55 Tigers have been seized in Bangladesh, accounting for 2.2% of the global total. Bangladesh reported the highest number of seizures in 2015, consisting mainly of Tiger skins (Figure 14). This is consistent with overall trends, as skin is the most commonly seized commodity in Bangladesh, making up 46% of the total of items seized. Skin was present in 12 of the 20 seizures that took place (Figure 15).

Figure 15: Commodity Type (2000-2015)



DISCUSSION

National demand exists in Bangladesh, with almost all parts of the Tiger used by local communities. This largely centres on the use of bones, canines/teeth, meat and fur for medicinal purposes (Saif and Macmillan, 2016; Saif *et al.,* 2016). A recent study found that 65% of the 139 respondents interviewed used and /or believed in the benefits of Tiger parts, with some 96% of them believing in the medicinal benefits of Tiger parts (Saif *et al.,* 2016). Moreover, the local use and consumption of Tiger parts in the Sundarbans is particularly encouraged by the Kobiraj, or traditional doctor, who acts as advisor to the local people on hand-made medicine from plants or animal parts. In reference to Tiger parts, villagers would obtain and store Tiger parts for a time when someone in the family becomes inflicted with a disease or other conditions, and the Kobiraj would consulted on how to use the Tiger parts to remedy this (Saif *et al*, 2016). However, this appears to conflict with the reported seizure picture which finds that skins are more commonly traded, which may suggest that the killing of Tigers in Bangladesh is to supply markets outside of the country. However, no seizures have been reported on its border with India in the north of Bangladesh.

In addition to the apparent external pressure on Tigers in Bangladesh, there is also the issue of human-wildlife conflict in the Sundarbans where most seizures took place (Map 5). About 350 000 people are estimated to live in villages bordering the Sundarbans with some 20-50 people estimated to be killed in Tiger attacks annually (Saif *et al.* 2016). Studies show an estimated 490 human deaths from Tigers were recorded between 1984 and 2006, the impact of which may have led to negative attitudes and retribution killings by local communities (Barlow *et al.,* 2013). In response to this, the Bangladesh Forest Department, in collaboration with WildTeam, and Zoological Society of London (ZSL), had established a community-based volunteer group called Village Response Team (VTRT) in 49 places adjacent to the forest to mitigate human-Tiger conflict in the villages.

Bangladesh did not submit a report on its review of the implementation of Resolution Conf 12.5 (Rev. CoP 16), as required, at the 66th Standing Committee meeting (https://cites.org/com/sc/65/index.php), and therefore its progress in implementation cannot be assessed comprehensively. Bangladesh's *Wildlife Preservation and Protection Act 2012* is used to protect Tigers. However, studies show that prosecution of those responsible for killing and trading in Tigers is lacking, as those arrested for illegal trade in Tigers have been acquitted (Saif and Macmillan, 2016). According to the Corruption Perception Index (CPI), compiled by Transparency International, Bangladesh scored 25 in 2015, placing it lower than its CPI score of 26 in 2012. It is ranked 139th most corrupt State of the 168 states assessed. Amongst its peers of 13 Tiger range countries, Bangladesh is ranked the 3rd most corrupt. Tiger skin seizures indicate a lack of any bullet or snare markings, suggesting the use of poison to acquire them (AFP, 2016; Saif *et al.,* 2016). Improved measures to track, investigate and prosecute Tiger criminals is critical in sending a strong deterrent message. Given the apparent demand for Tiger parts in the country, demand reduction initiatives, in collaboration with local communities, may have a positive effect on Tiger conservation efforts, coupled with a strong legal framework that prioritizes prosecution.

CONTINUING CHALLENGE

Bangladesh has yet to formally ratify SAWEN. The absence of Bangladesh will impede any meaningful progress of the network across South Asia.

6.2 Country Profile: Bhutan

In July 2015, the Government of Bhutan announced the results of its first ever Tiger population survey. At 103 individuals, this figure represents an increase from the 75 individuals determined from an earlier estimated baseline, placing it 8th of all TRC Tiger populations (Tshering, 2015, WWF, 2015). Seizure rates for Bhutan have remained relatively low during the period under review, with only six seizures reported between 2000 and 2015, accounting for less than 1.0% of the global total (Table 15). These incidents are estimated to equate to a minimum of six Tigers, accounting for less than 1.0% of the global total. Location details were only available for four of the six seizures reported and are shown in Table 11. Two of the seizures in 2012 and 2013 were close to the border of the northeast Indian State of Assam.

Table 15: Total Tiger Seizures (2000-2015)

Year	Seizures	Min. # Tigers	Location	Origin	Destination	Seized
2003	1	1	Bumdeling Wildlife Sanctuary	India	China	Skin (1)
2006	1	1		India	China	Skin (1)
2008	1	1				Bone (3)
2012	1	1	Nganglam	India		Skin (1)
2013	1	1	Gelegphu	(Indian suspects)		Skin (1) & bone
2015	1	1	Trongsa	Bhutan		Skin (1)
Total	**6**	**6**				

DISCUSSION

There appears to be little evidence of an illegal Tiger trade market or domestic demand for such products in Bhutan. However, its strategic positioning may mean Bhutan is used as a route into China from India. The Royal Government of Bhutan has placed strong emphasis on protecting its wildlife with over one quarter (26%) of the country's surface area falling under the national protected areas scheme (compared to around 5% in India, for example). Bhutan also has a fairly good ranking on the Corruption Perception Index in 2015, scoring 65, an increase against its 2012 score of 62, placing it 27th of all the 168 states assessed. This is exceptional, given the average score for all TRCs is 34 (out of 168) and compared to its neighbour Bangladesh which scored 26. This ranks Bhutan as the least corrupt among the 13 Tiger range countries. Pressure from surrounding countries in the region will continue to threaten the status of Tigers in Bhutan and hence, it is paramount that cross-border co-ordination is strengthened – including through the SAWEN network - to combat transnational trade. The Bhutanese government has begun to consider the proposal to formally ratify the statute of SAWEN following the government sign-off by India, Nepal, Pakistan and Sri Lanka. With government ratification now at only half the eight member States, the potential of SAWEN to make meaningful inroads into illegal wildlife trade will be enhanced.

6.3 Country Profile: Cambodia

In 1999, Cambodia was ranked second in the world for their wild Tiger population with an estimated 700 adults (The Phnom Penh Post, 1999). Just 17 years later, in April 2016, Tigers were declared "functionally extinct" in Cambodia since the last Tiger sighted on a camera trap was in 2007 (Asian Correspondent Staff; 2016; WWF, 2016).

During the period under review, Cambodia reported four seizures, representing a minimum of eight Tigers, accounting for less than 1.0% of the global total. Table 16 highlights the temporal gaps in seizures when no Tiger seizures were reported for the period 2001-2014. All the three seizures in 2000 involved live Tigers. The only reported seizure following that was of teeth and claws in 2015.

Table 16: Reported Seizures in Cambodia (2000-2015)

Year	Seizures	Min. # Tigers	Locations	Commodity Type
2000	3	7	Phnom Penh	Live
2015	1	1	Siem Reap	Teeth and claw
Total	**4**	**8**		

DISCUSSION

Little analysis can be applied to the reported seizures in Cambodia as only four incidents are known. This indicates either a poor reporting rate or low enforcement effort. The latter is likely linked to Cambodia's wild Tiger population declining to a status of functionally extinct. A pre-feasibility study concerning the reintroduction of Tigers into the Eastern Plains Landscape was undertaken in 2013 by the IUCN and WWF, with the reasons for Tiger extirpation being examined and conditions for successful reintroduction identified. The Mondulkiri Protected Forest is assessed to be suitable for the planned reintroduction, and spans 4300 km² across Cambodia (WWF, 2016). Critics of the reintroduction have outlined the need to tackle the very issues (such as poaching and lack of prey base) that had attributed to the decline and eventual extinction of the wild Tigers before any new populations are introduced.

The country report Cambodia submitted to the 65th CITES Standing Committee meeting reported a number of enforcement measures aimed at tackling illegal trade. Cambodia now has a Memorandum of Understanding (MoU) with the Vietnamese government which aims to facilitate joint law enforcement activities and intelligence sharing between the Cambodian Forestry Administration and its Vietnamese counterpart. This partnership is particularly pertinent as cross-border trade is likely, illustrated most recently when a Vietnamese national was found in possession of elephant and Tiger parts at Siem Reap International Airport in October 2015. The suspect had travelled from Angola, via Ethiopia and South Korea before reaching Cambodia. It is believed that the intention was to land in Cambodia, before travelling overland to Viet Nam.

CONTINUING CHALLENGES

Unless the Cambodian government addresses the poaching and illegal trade picture, reintroduced Tigers will face the same fate.

6.4 Country Profile: China

There are estimated to be about seven Tigers left in the wild in northeast China. The South China *Tiger Panthera tigris amoyensis* has not been observed in the wild for more than 25 years, and is therefore considered by scientists to be "functionally extinct" (IUCN, 2016). In the period between 2000 and 2015, 78 seizures were reported in China (Table 17), accounting for 9.7% of the global total. The majority of these were for one commodity type (most commonly skins). It is estimated that a minimum of 175 Tigers and a maximum of 194 Tigers were seized in China during the period under review, the minimum count accounting for 9.8% of the global total. When looking at the trend line, it can be observed that the number of seizures has increased slightly, while the number of Tigers seized has decreased slightly during the period under review (Figure 17).

Table 17: The Reporting of Seizures in China (2000-2015)

Year	Seizures	Min. # Tigers
2001	3	2
2002	5	17
2003	3	33
2004	2	2
2005	5	17
2006	4	4
2007	8	12
2008	8	8
2009	4	4
2010	6	13
2011	4	8
2012	6	20
2013	10	23
2014	7	9
2015	3	3
Total	**78**	**175**

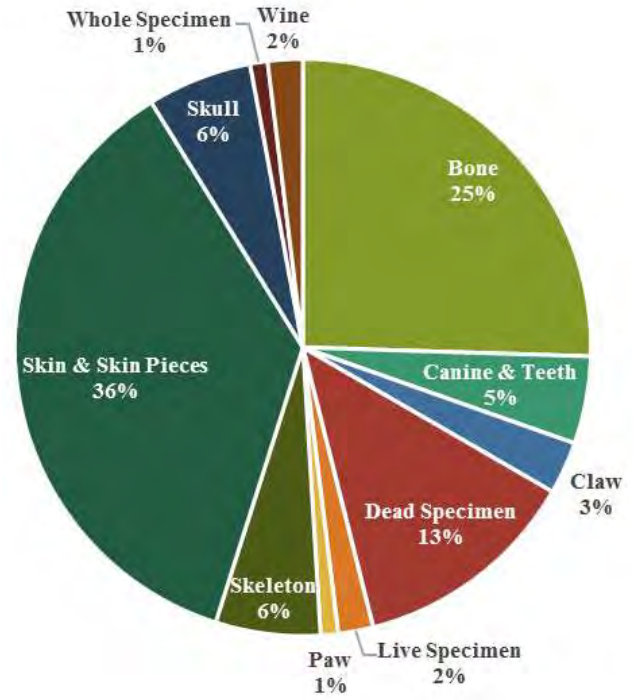
Figure 17: The Number of Tiger Seizures and Tigers Seized (2000-2015)

Map 6: Seizure Locations Reported in China (2000-2015)

Specific location data was available for 68 of the 78 seizures reported in China. All reported seizures were mapped using a colour-coded range to illustrate movements over time as well as locations where seizures have taken place (Map 6). The results highlight the geographical concentration of activity to be at the eastern part of the country but also that the greater proportion of seizures had taken place close to its border areas. The darker green symbols indicate where earlier seizures were reported to have taken place (many close to the border with Myanmar). The red symbols represent more recent seizures, which appear to be more prevalent around the border with Viet Nam, and the province of Guangdong with proximity to Hong Kong.

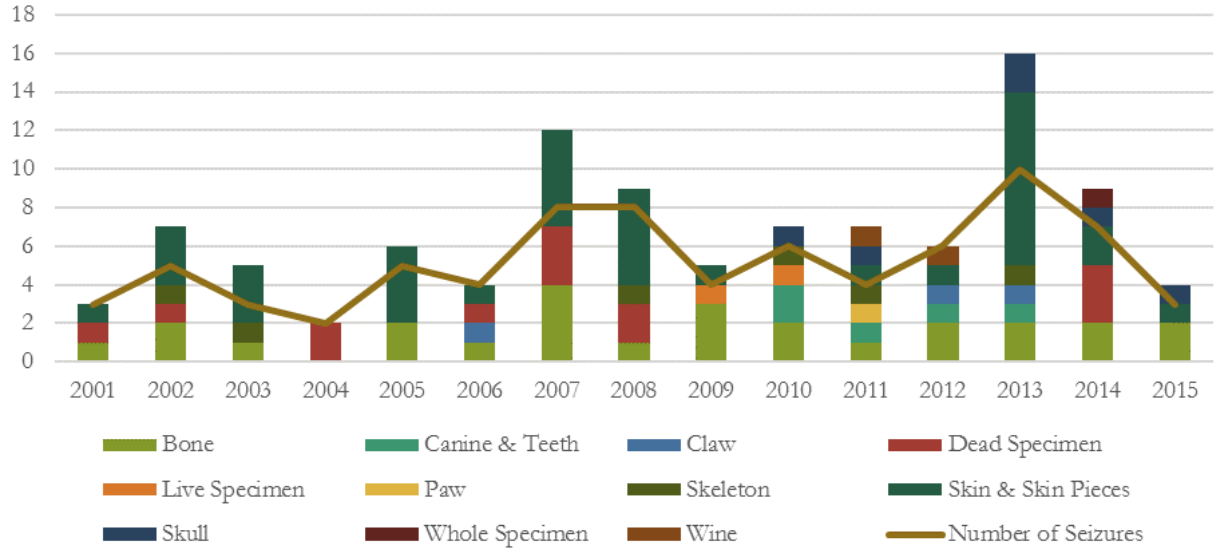
China has seized a wide range of commodity types. Skin and skin pieces are the most commonly seized items, present in 37 (36%) of the seizures (Figure 18), and followed by the seizures of bones (25%), present in 26 of the 78 seizures. This shows a change from the TRAFFIC analysis in 2013 which found that less than half of China's seizures were of bones (46%) in comparison to 18% for skin.

Figure 18: Commodity Types Seized (2000-2015)



To understand whether this picture has changed over the last 16 years, the commodity types seized were examined by year (Figure 19) and further confirms that the seizures of skins have decreased proportionally over time, though a spike can be observed in 2013. An increase in seizures during 2013, can be partially attributed to intelligence-led and proactive enforcement action, such as Operation Cobra, where for example two incidents in January in that year led to the confiscation of 12 Tiger skins and 168 kg of bones, equating to a minimum of 17 Tigers.

Figure 19: Commodity Type Seized by Year (2000-2015)



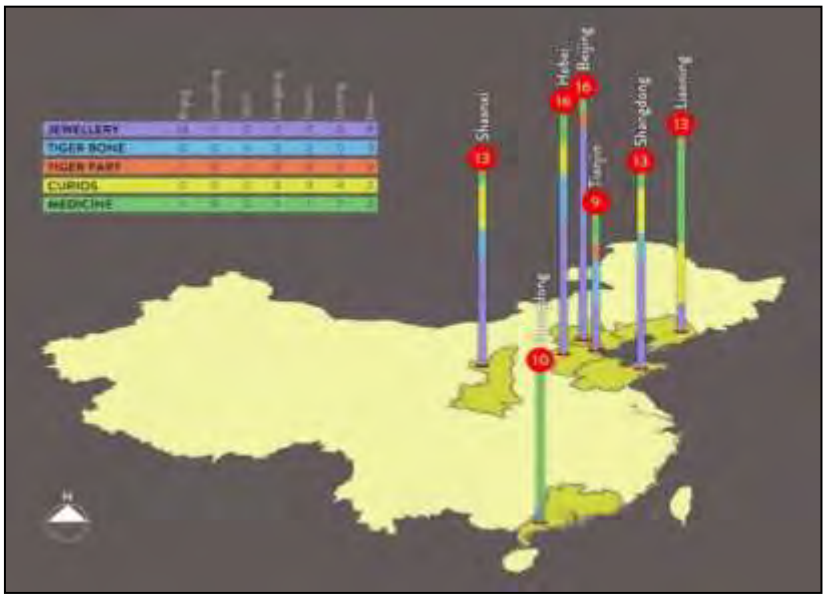
DISCUSSION

Overall, China was the most commonly reported destination of Tiger seizures (almost half), followed by Viet Nam (20%), as illustrated on the trade route Map 4. During the 16-year period under review, 78 seizures were reported, averaging five per year, which is a marked difference from its neighbouring country, India for example, which reported 22 seizures on average per year in comparison. Within China, research finds that the illegal Tiger trade is a specific type of wildlife trade, and reveals interesting dynamics (Wong, 2015).

Certain locations appear to specialize in the sale of particular Tiger parts, with reputations significantly driving the market. For example, Lhasa, capital of the Tibet Autonomous Region, was known as the go-to place for skins, as has been documented previously (EIA, 2004). Actors linked to the Tiger trade were predominantly legitimate business owners who would opportunistically trade in Tigers parts when they are available, therefore supply upon order does not exist. Ultimately, the perception was that while Tiger parts are in demand, and buyers are willing to pay, traders will continue to supply (Wong, 2015). The structures of such trade networks hinge on a central node as the supplier of Tiger parts, upon which the entire market is dependent. Due to the limited availability of Tiger parts, it acts as the market force, creating a centralized network structure as opposed to traditional formations of criminal structures where variables such as risk and enforcement are casual factors. This presents an opportunity for law enforcement - the removal of this central facet would create the greatest impact on the market and reduce the threat to Tigers.

The presence of online Tiger trade, particularly on social media is a growing threat, compounded by monitoring challenges, due to the privacy options offered by some platforms, particularly commercial business portals. Tiger trade on the internet has been documented as far back as 2012 when the monitoring of e-commence sites in China between July 2012 and May 2013 detected 438 advertisements of products purportedly to be of Tiger origin (Stoner, 2014). The products for sale were mainly smaller items of jewellery and curios, such as Archer's rings made of bone. No skins were found for sale.

Map 7: Seller's Location by Tiger Product for Sale in China



Map 7 illustrates the locations of these online advertisements, and indicates geographical preferences for different product types. Items of traditional medicine were more commonly sold on the east coast, particularly the provinces of Liaoning and Guangdong. Almost all products found for sale in Beijing were pieces of jewellery. This identified geographical propensity for different Tiger parts online is consistent with findings observing physical markets within China (Wong, 2015).

Monitoring of illegal trade on 15 e-commence sites of five key illegal wildlife products (ivory, Rhino horn, Tiger bone, Hawksbill shells and Pangolin scales) has been undertaken by TRAFFIC in China. Between January 2012 and September 2014, a steady decrease in the total number of illegal wildlife product advertisements was noted in the first half of 2013. It fell sharply to fewer than 10,000 advertisements and remained there since, with only slight variance. This drop is remarkable as the scope of monitoring has increased continuously during that time. This documented decrease was partly attributed to close collaboration with each website/platform, allowing them to delete the identified posts (Yu and Wang, 2015). As a result of this feedback, several website/platform managers (as well as enforcement agencies) have blocked certain common code words to prevent them from being used to advertise products. However, while this monitoring and regular reporting of illegal posts has resulted in a decrease in advertisements, it is possible that the trade has been displaced to other forms. At the same time, trade occurring on social media was becoming more apparent. In contrast to posted advertisements on regular websites, which can be seen by all visitors, social media audiences can be selected by dealers and are based on personal introductions. This privacy means that sellers are better protected and hence, monitoring becomes more challenging. While Facebook is not permitted in China, WeChat is now estimated to have over 800 million monthly active user accounts in 2016 in China alone (China Internet Watch, 2016).

China should be requested to clarify whether its permitted internal trade in Asian big cat parts and derivatives is for non-commercial purposes, to report the species and trade volume involved, and describe how such trade is monitored and enforced. Recognizing that China has the sovereign right to govern its internal ABC trade, this information would allow a more complete assessment of implementation of the Resolution. Illegal imports of derivatives represent a challenge for other Parties seeking to enforce their own CITES protections, and China should also indicate the measures it is taking to prevent illegal exports.

China has made significant progress in addressing the growth in illegal online trade in wildlife in the past three years. Some of these progressive steps have included a workshop in 2013 involving Beijing's Provincial Inter-Agency CITES Enforcement Co-ordination Group (PICE-CG), 13 e-commerce and logistics companies to highlight the role of e-commence sites and to aid relevant departments to strictly regulate online wildlife trade and develop self-management techniques. More recently in November 2015, Tencent, a leading provider of internet services in China, signed a Memorandum of Understanding (MoU) with TRAFFIC to tackle illegal wildlife trade conducted on WeChat and Tencent's other online platforms. The MoU focuses on developing public education and messaging to users, dissuading them from engaging in illegal wildlife trade. The messages are disseminated through online ads, apps and social media channels. These formalized partnerships solidify the role of corporations in addressing this issue and emphasizes that the problem cannot be tackled from a law enforcement perspective only.

CONTINUING CHALLENGES

Controlling illegal trade along national border areas, particularly areas bordering China. Transboundary enforcement collaboration between China and Lao PDR, for example, should be held as means of improving collaboration between the two countries as part of its bilateral co-operation (TRAFFIC, 2016b)

CITES requests China and Viet Nam to take note of the information about the alleged illegal trade across the Ka Long River at the border between near Mong Cai, Viet Nam.

6.5 Country Profile: India

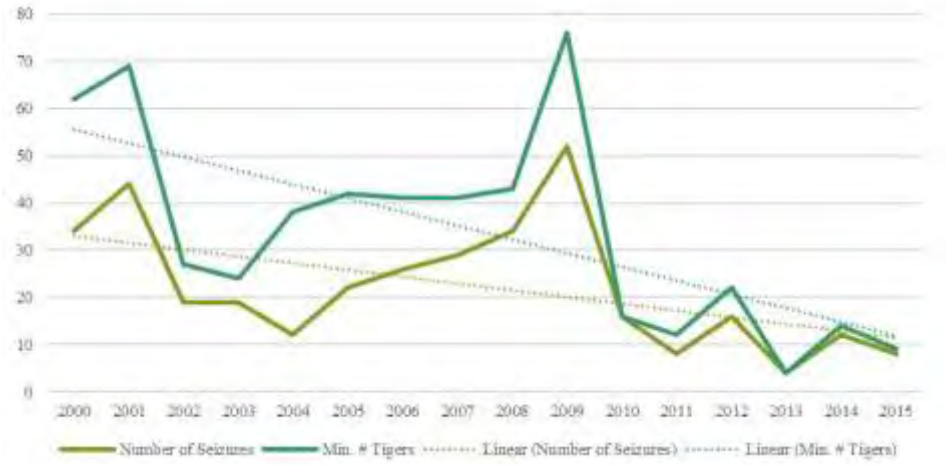
India remains the stronghold of the global wild Tiger population, accounting for around 57% (2 226) of the total. This represents an increase of 30% from its estimate of 1 706 individuals in 2010 (WPSI, 2016). This success is largely attributed to the prioritization of maintaining core habitats for breeding, habitat connectivity and protection from poaching. During the 16-year period under review, India had recorded the greatest number of seizures of all TRCs, accounting for 44% of the total. It reported the seizure of a minimum of 540 Tigers and a maximum of 622 Tigers, the minimum accounting for 30% of the total.

Table 18: Tiger Seizures and Tigers Seized by Year (2000-2015)

Year	Number of Seizures	Min. # Tigers
2000	34	62
2001	44	69
2002	19	27
2003	19	24
2004	12	38
2005	22	42
2006	26	41
2007	29	41
2008	34	43
2009	52	76
2010	16	16
2011	8	12
2012	16	22
2013	4	4
2014	12	14
2015	8	9
Total	**355**	**540**

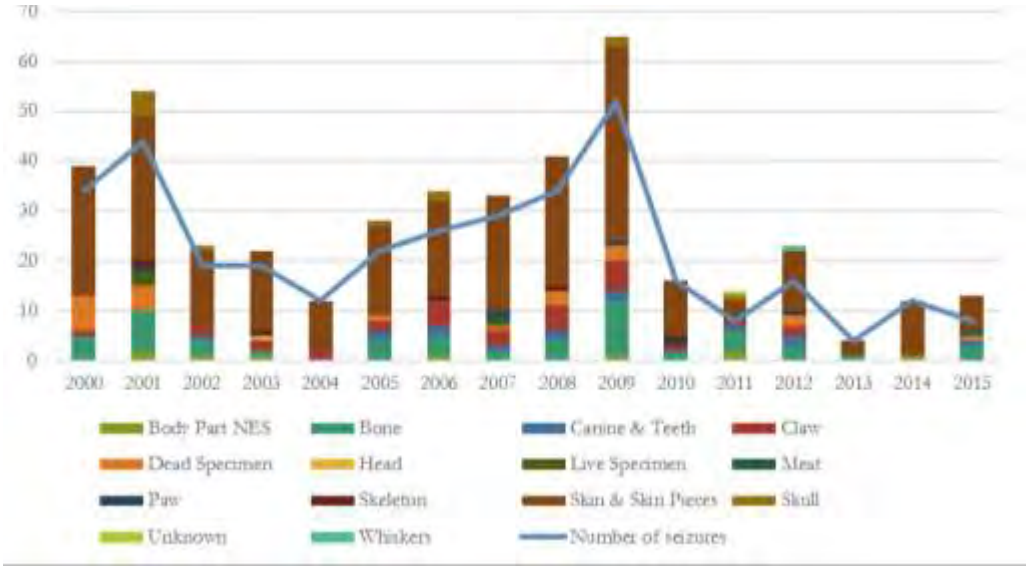
In contrast with the other TRCs, India has observed a rapid decrease in the number of seizures reported since 2010 (Table 18). The highest number of seizures was recorded in 2009 and the lowest number in 2013. The overall trend line indicates a statistically significant decrease in the number of seizures being reported (Figure 20).

Figure 20: Seizures and Tigers Seized by Year (2000-2015)



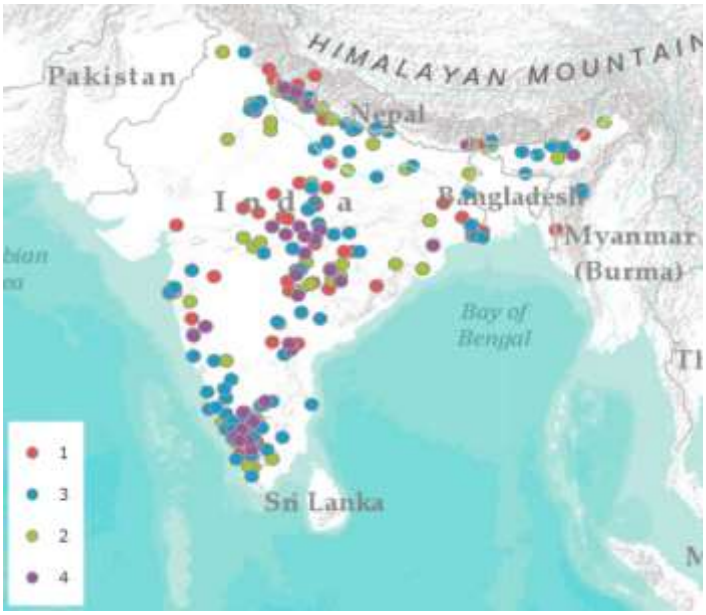
Although India records a large variety of commodity types, the most prominent is skins which were seized far more commonly than any other commodity type, accounting for 62% of seized Tiger parts. While the overall number of Tigers seized has decreased, the proportion of skins seized remains a high proportion of the seizures but to a lesser degree (Figure 21). Tiger bone has also appeared in 14 of the 16 years but in a much smaller number of seizures.

Figure 21: Commodity Type by Year (2000-2015)

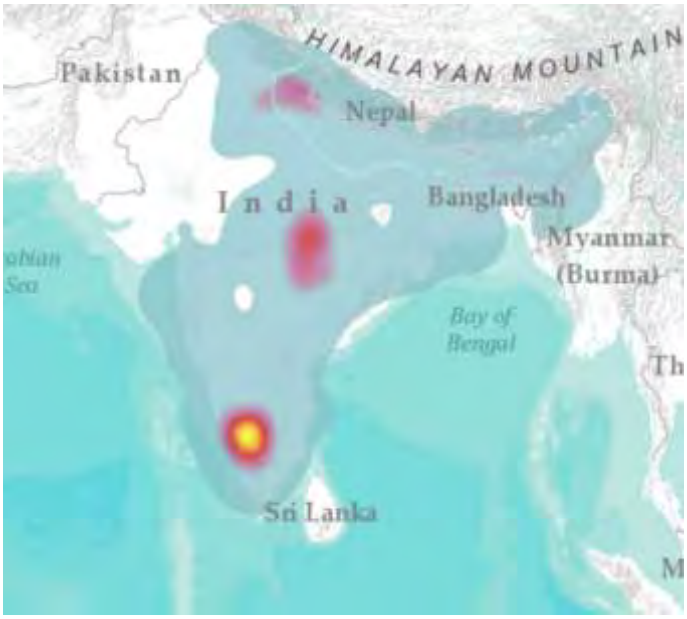


Map 8 shows the location of all reported seizures with location details throughout the period under review by quarterly period, and does not appear to highlight any geographical concentrations of activity. Map 9 illustrates three hotspots, the greatest comprising the states of Kerala and Tamil Nadu.

Map 8: Seizures denoted by quarterly period



Map 9: Hotspots of seizures (2000-2015)



Map 10: Tiger Seizures (2012-2015)

Map 10 shows the location of all reported seizures in the most recent quarter only (2012-2015). It demonstrates that while the southern hotspot is still present, there also appears to have been a greater number of seizures reported in the central zone in and around the state of Madhya Pradesh. A smaller cluster of seizures can also be observed along the border of Nepal in the state of Uttar Pradesh.

DISCUSSION

Other than a few exceptional cases, there is very little evidence of demand for Tiger parts in India (Seidensticker *et al*, 2001), yet overall during the period under review, India accounts for the greatest number of seizures at 44% across all TRCs. An in-depth study of the dynamics of Tiger crime in India over the four decades reveals patterns of Tiger crime that can go some way in aiding better informed decision making in crime prevention (Sharma, *et al*., 2013). There is a greater probability that Tiger seizures will occur in areas where Tigers exist and therefore, there is a crucial need to strengthen site-based enforcement efforts. An interesting finding of the research was the use of the national rail network of India as the preferred method of transporting Tigers and their parts. This is greatly due to the fact that many train lines traverse through many protected areas across India, in contrast to the national bus service for example.

India is the only TRC to have prioritized the management of data on Tiger poaching and seizures – it established Tigernet[8] in 2009, at which point its recording practices changed. All verified seizures since 2010 are now made available to the public via Tigernet. However, as Figure 18 illustrates, there has been a significant decline in the number of seizures being reported in India. The number of unverified reports in the media on the other hand, indicate that there are seizures not captured by Tigernet. As a centralized data management system, Tigernet has the potential

[8] http://www.tigernet.nic.in/

to be exemplary but there are concerns that the infrastructure may not be functioning as it should. Examples of these gaps are as described:

- In September 2013 following a major operation, Delhi Police claimed to have busted the" biggest gang of poachers and smugglers" evading arrest for more than 20 years. Over 18 kg of Tiger skulls, bones, nails and teeth were recovered from three persons arrested for the illegal sale and supply of derivatives of endangered animals under the Wildlife Protection Act 1972.

***INFORMATION SOURCE**: Delhi Police Press Release*
***Reported on Tigernet**: No*

- In August 2015, an intelligence-led investigation resulted in the arrest of three suspects and seizure of four pairs of Tiger claws. The gang had been investigated as part of a six-month operation. The seized parts were reported to have been sent to the State Forensic Sciences Laboratory for further confirmation. Cases have been filed under 10 different sections of the Wildlife Protection Act 1972.

***INFORMATION SOURCE**: Times of India*
***Reported on Tigernet**: No*

CONTINUING CHALLENGES

There appears to be a disparity between the occurrence of Tiger seizures in India and the recording of these incidents on Tigernet. The result of this may mean that there is some under-reporting on Tigernet. Tigernet is the first government-led central reporting mechanism for Tiger mortality and seizures of Tigers. It is currently the benchmark for other countries to emulate to aid transparency on Tiger crimes occurring within national jurisdictions. In order for it to be used as a reliable, accurate and up-to-date platform, it is paramount that such information is complete and made available in a timely manner, and that it sets a good model for other Tiger range countries where such systems do not exist. Indeed, if Tigernet is perfected, it would serve as a practical and exemplary tool to push for other TRCs to mirror in order to achieve more accurate reporting where this currently does not exist.

6.6 Country Profile: Indonesia

The latest Sumatran Tiger *Panthera tigris sumatrae* population sits at an estimated 371 individuals, representing 10% of the global wild Tiger population, placing Indonesia with the third highest Tiger population of all the TRCs. (WWF, 2016c). This is an increase from the previous national estimate of 325 individuals. Indonesia has reported 70 seizures over the 16-year period and accounts for 8.7% of the global total. However, the first reported seizure did not take place until 2004 (Table 19). Indonesia has seized a minimum of 136 Tigers and a maximum of 182 Tigers, the minimum accounting for 7.5% of the global total.

Table 19: Total Reported Seizures (2000-2015)

Year	Seizures	Min. # Tigers
2004	2	3
2005	4	5
2006	7	11
2008	6	12
2009	7	9
2010	5	13
2011	3	4
2012	4	26
2013	7	10
2014	8	9
2015	17	34
Total	**70**	**136**

In 2015, the number of seizures was at its highest with 17 being reported, an increase of more than 100% over any of the previous years. The number of Tigers involved is also correspondingly the highest for any given year. In 2012, although the number of seizures was fairly similar to previous years, the number of Tigers seized was significantly higher (26). The trend lines (Figure 22) show a consistent increase in both the number of seizures, and the number of Tigers seized, and is more pronounced in relation to the number of Tigers being seized.

Figure 22: Trends of the Seizures and Number of Tigers Seized (2000-2015)

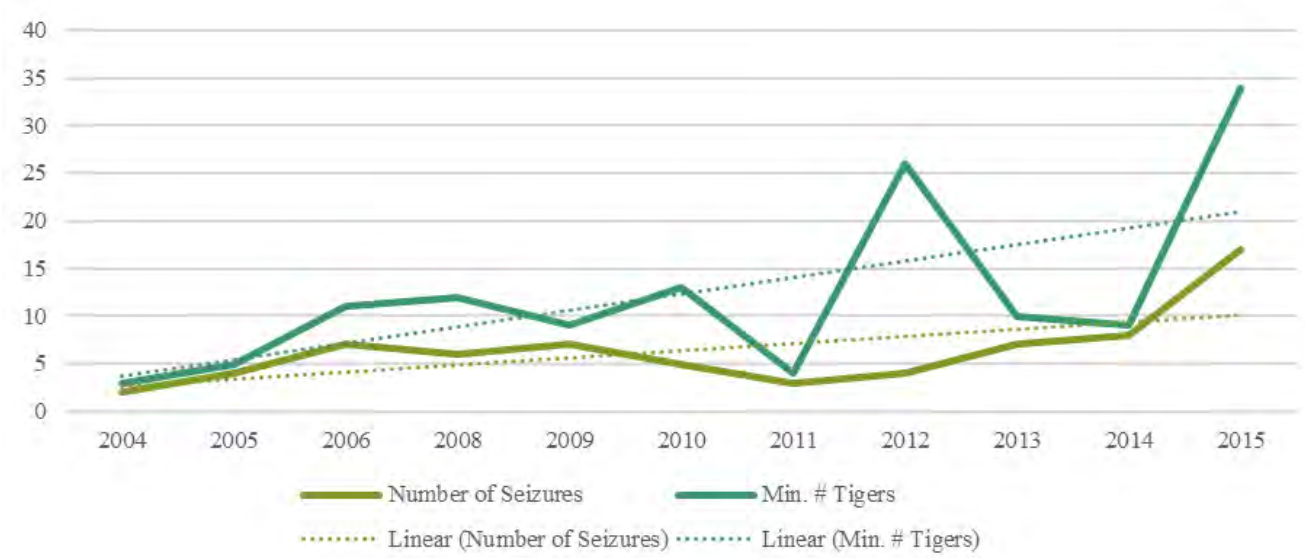
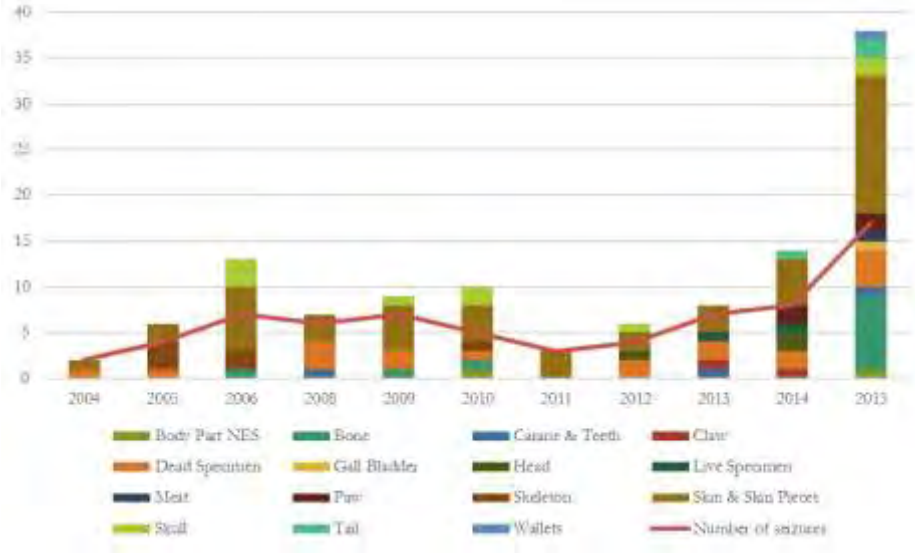


Figure 23: Commodity Type by Year (2000-2015)



Indonesia seized the most number of commodity types, compared to any other country. Skin and skin pieces was the most prevalent commodity type, by far the largest proportion at 43%, followed by dead specimens which account for 15%. Figure 23 illustrates that skin and skin pieces have been present every year throughout the period under review. It also shows that dead specimens were seized in nine of the 11 active years. Other commodity types were spread throughout the years with no particular pattern identified.

Map 11: Reported seizures in Indonesia (2000-2015)

DISCUSSION

During the most recent quarter (2012-2015), Indonesia seized the greatest number of Tigers (79) after Thailand[9]. The number of seizures reported in 2015 (17) was the highest number of seizures reported throughout the period under review and indicated a113% rise (n = 11) compared to the number of seizures reported in 2014 (8). The reported increase in seizures in 2015 may have been attributed to the concerted efforts of law enforcement agencies, including increased investigation of suspects and their links to the transnational Tiger trade. In February 2015, the South Sumatra Military Police, South Sumatra Provincial Natural Resource Conservation Office (BKSDA), and Wildlife Conservation Society's Wildlife Crimes Unit announced the arrest of a major wildlife trafficker illegally trading in Tiger parts and other protected wildlife. The suspect allegedly sold more than 100 stuffed Tigers over a 10-year period and traded in the illegal goods to buyers in southern Sumatra, Kalimantan, Sulawesi, and to a Tiger "middleman" trader in Jakarta. The suspect had since confessed that he purchased Tiger skins and stuffed Tigers in Lampung, Bengkulu, Jambi, and North Sumatra to supply demand in Jakarta and Java. This case serves to illustrate two points – first, the effectiveness of joint partnerships (including the contributing role of NGOs) and secondly, the domestic taxidermy Tiger trade in Indonesia. This seizure emphasizes a national trend involving the trade in taxidermy Tigers.

Between 2012 and 2016, at least 15 seizures had taken place that involved stuffed whole Tigers or their parts, at least four of which were found to have been traded online. While there does not appear to be any geographical specificity in the seizures, most appear to occur across Sumatra (a source site) and the conurbation surrounding Jakarta (possibly the main target trade market for this product type). In 2013, a military court in the Aceh province sentenced two soldiers to prison and a fine of IDR5 million (USD454) for illegal possession of two stuffed Sumatran Tigers, among other wildlife (Parker, 2013). When the Indonesian government enacted its wildlife legislation in 1990, Act Number 5, it included a requirement for anyone in possession of protected species and their parts and products to obtain a permit by registering them with the government. A total of 1 081 stuffed and mounted Tigers skins were registered, including 100 stuffed Sumatran Tigers held by government officials and businessmen in South Sumatra. This was in addition to at least 500 stuffed Tigers registered in privately-held stocks in Palembang and Lampung (Shepherd and Magnus, 2004). Surveys in 2007 found the presence of a strong domestic market that exists in pockets across Indonesia (Ng and Nemora, 2007). Anecdotal information suggests that the price of Tiger parts in Sumatra has increased substantially over the past few years, with intelligence reporting this as due to international demand for Tiger parts. The estimated mark-up between hunters operating in Sumatra and those trading internationally sits at around 200% on average.

An overhaul of wildlife laws in Indonesia is set to be conducted when the Ministry of Environment and Forestry presents a proposal to Parliament outlining new legislative measures such as an increase in maximum sentences for poaching and trading protected animals from five to 20 years[10]. The revision of Indonesia's legislation is desperately needed, given the current loophole which fails to protect non-native species from being traded including Tiger sub-

[9] Which is largely skewed by the impoundment of 100 Tigers at the Tiger Temple in 2015
[10] The new regulations are targeted to be in place by early 2017

species. This presents opportunities for abuse, particularly those involving Tigers in privately held stocks and in captive facilities. This lack of protection for non-native species is a significant gap, and one that serves to highlight the inability of the country to implement CITES. Despite some of these fundamental gaps, the CITES National Legislation Project has assessed Indonesia's legislation as being Category I, meaning it generally meets the requirement of CITES. Little is known about the number of convictions achieved in Indonesia for wildlife crimes. The lengthening of custodial sentences and significant increases in fines to serve as a deterrent is critically needed, and should be considered by Indonesia at a time when its Critically Endangered native Tiger population appears to be turning up in high numbers during seizures.

CONTINUING CHALLENGES

The national demand for taxidermy Tigers as a luxury item among the Indonesian elite is placing additional pressure on the declining Sumatran Tiger population.

The inadequacy of its legislation, particularly with regard to the protection of non-native species, i.e. apart from Sumatran Tigers, remains a significant gap in Indonesia's ability to enforce CITES, and raises questions about its ability to also govern the issue of Tigers held in captivity or in private stocks.

6.7 Country Profile: Lao People's Democratic Republic

The wild Tiger population in Lao PDR is estimated to consist of only two individuals, and that is considered an ambitious figure (Goodrich *et al,* 2015), placing Lao PDR second from last after Cambodia for their current Tiger population. During the period under review, Lao PDR reported nine seizures, representing 4.8% of the total, equating to 39 Tigers which accounts for 2.1% of the total number of Tigers seized (Table 20). Only one seizure was reported during the most recent quarter (2012-2015), consisting of an estimated 11 live individuals suspected to be en route to Viet Nam.

Table 20: Total Seizures (2000-2015)

Year	Number of Seizures	Min. # Tigers
2005	2	3
2007	2	5
2008	3	3
2009	1	17
2012	1	11
Total	**9**	**39**

Figure 24: Commodity types of Tigers seized (2000-2015)

Map 13: Seizures of Dead Tigers (2000-2015)

Lao PDR is unusual as all of their seizures have been of whole individuals, either live or dead Tigers (Figure 24), with carcasses being most commonly seized, representing 28 individuals. Map 13 illustrates the known locations of incidents, as well as the number of Tigers seized during those incidents. The red circle denotes Bokeo Province, where the Golden Triangle is located and highlights its proximity to the Thai and Myanmar borders. Its relevance to illegal Tiger trade is discussed further below.

DISCUSSION

The Environment Investigation Agency had produced an expose report on Lao PDR and its significant role in illegal wildlife trade, including at the Golden Triangle Special Economic Zone in Bokeo Province (Environmental Investigation Agency, 2015). The report highlighted that the wildlife trade within the SEZ caters predominantly to Chinese and Vietnamese clients, with China being specified as the primary driver. This is evident from the fact that all signs in the SEZ were written in Chinese and prices quoted in RMB. The Bokeo province itself borders both Myanmar and Thailand (Map 13), and has been pinpointed as a historic trade hub for other forms of serious and organized crime such as opium trading (UNODC, 2008).

In July 2016, TRAFFIC visited the Golden Triangle. A very small amount of Tiger parts were observed for sale in the Chinatown section of the area. Tiger canines and claws were observed. Traders there were all observed to be ethnic Chinese, and conversations with a few traders revealed that they originated from mainland China. A vast majority of the ethnic Chinese traders there were however not interested in engaging in any conversation with the TRAFFIC team. The Treasure Hall outlet was abandoned but an old Tiger skin (among other items) was visible from the outside. This appears to be the result of a raid conducted in March 2015 with four restaurants reportedly being shut down.[11] To the right of this Treasure Hall, on the outer premise which is concealed, a couple of cages were visible on two sides, and at least one adult live Tiger was observed here. No further information on this Tiger was forthcoming.

On the other side of the Lao PDR border with China, in the Boten Special Economic Zone, at least eight bottles of Tiger wine were observed for sale in April 2016 in a shop that catered to wines for "good health" (Or and Krishnasamy, *in prep*). Restaurants were also found to be selling Tiger bone wine. As in the Golden Triangle, every trader here was observed to be ethnic Chinese and believed t to have originated from mainland China. The clocks were observed to be set to Beijing time.

The main issue of concern in Lao PDR is the unregulated growth of Tiger farms, and the increasing opportunity for open and unregulated illegal trade to be conducted in the country's Special Economic Zones, two of which are described above. The country's Economic Zones have become notorious as locations facilitating illegal wildlife trade, including Bear bile, Tiger parts and ivory, with a clear link between the country and its neighbouring China being established as source and consumer country (Krishnasamy and Or, *in prep*; Krishnasamy *et al.*, 2016; Nijman and Shepherd, 2014; Ghosh, 2010). Any effort to eliminate illegal Tiger trafficking lies in the effective control and monitoring of these zones, which at present are hugely influenced by Chinese investment, both government and from the private sector (Lao National Committee for Special Economic Zone Secretariat Office, 2012).

[11] https://eia-international.org/wp-content/uploads/EIA_Table-of-Tiger-Crime-Incidents_July-2015_updated-July-2016.pdf

Lao PDR also did not submit a report on its review of the implementation of Resolution Conf 12.5 (Rev. CoP 16) as required at the 66th Standing Committee meeting (https://cites.org/com/sc/65/index.php). Like other countries that failed to submit such a report, a comprehensive assessment of its progress in addressing Tiger trade is difficult to ascertain. Law enforcement efforts are considered to be low in Lao PDR, particularly given evidence of open illegal wildlife trade in the country. However, in July 2016, the first meeting of Lao PDR's Wildlife Enforcement Network (WEN) took place, which included the attendance of national CITES authorities. This is a sign of co-ordinated law enforcement effort across different agencies with a vested interest, crucial to building a national-level co-ordination structure. Ensuring that this national WEN is fit for purpose in Lao PDR is essential to making the regional ASEAN-WEN effective against transboundary trafficking. Most recently at the 17th CITES CoP, Lao PDR's Minister of Natural Resources and Environment announced a commitment to shut down its commercial Tiger farms (Dasgupta, 2016). This move, if realized, will be a crucial step forward in ensuring that Tigers from captive facilities do not leak into the illegal trade chain.

CONTINUING CHALLENGES

Lao PDR's first national-level Wildlife Enforcement Network did not take place until July 2016.

The mushrooming of Lao PDR's Special and Specific Economic Zones, a significant proportion of which receives Chinese investment, is cause for concern. These zones, if not controlled, can function as hubs for Tiger (and other wildlife) trafficking, to an even greater extent than current operations. Pursuant to the CITES mission to Lao PDR in July 2016, the country has been asked to put into place a series of measures to facilitate its implementation of CITES. The mission also concluded that there are no clear guidelines on the operation of these Economic Zones in relation to trade in CITES-listed species, and that measures must be taken to address this. Further, the mission also called on Lao PDR to revise its legislation, given the major loopholes that obstruct the implementation of CITES and to prevent illegal wildlife trade.

Collaboration with its neighbours, particularly China is critical in any deliberations for transboundary enforcement. A pioneering law enforcement workshop between the two countries was recently held, in June 2016, in Xishuangbana in China's Yunnan province (which also borders Lao PDR and Myanmar). The primary objective was to strengthen bilateral co-operation including on information exchange, joint enforcement actions and co-operation, and raising awareness. This workshop had provided a critical first step in improving collaboration between the two countries which should be enhanced to achieve its objectives.

6.8 Country Profile: Malaysia

In July 2015, the Department of Wildlife and National Parks (Perhilitan) and Malaysian Conservation Alliance for Tigers (MYCAT) issued a joint statement confirming that the current status of the Malayan Tiger *Panthera tigris jacksoni* meets the criteria to be listed as "Critically Endangered" under the IUCN Red List of Endangered Species (Kawanishi, 2015)[i]. This announcement further highlights that the number of mature individuals is likely to be fewer than 340 animals, and has declined by around 25% in one generation. This places the estimated Tiger population figures at around half of what was previously thought. This raises concerns about the country's ability to double its population by 2020, as envisaged by its National Tiger Conservation Action Plan. Malaysia's wild Tiger population currently places them at fourth among TRCs. In total, Malaysia has reported 40 seizures, representing 4.9% of the total (Table 21). There were no reported seizures during 2014. These seizures equate to a minimum 103 Tigers with the minimum representing 5.8% of the global total.

Table 21: All Reported Seizures (2000-2015)

Year	Seizures	Min. # Tigers
2001	3	8
2002	1	2
2003	3	5
2005	3	3
2006	1	1
2007	1	1
2008	4	25
2009	4	11
2010	7	12
2011	6	7
2012	5	26
2013	1	1
2015	1	1
Total	**40**	**103**

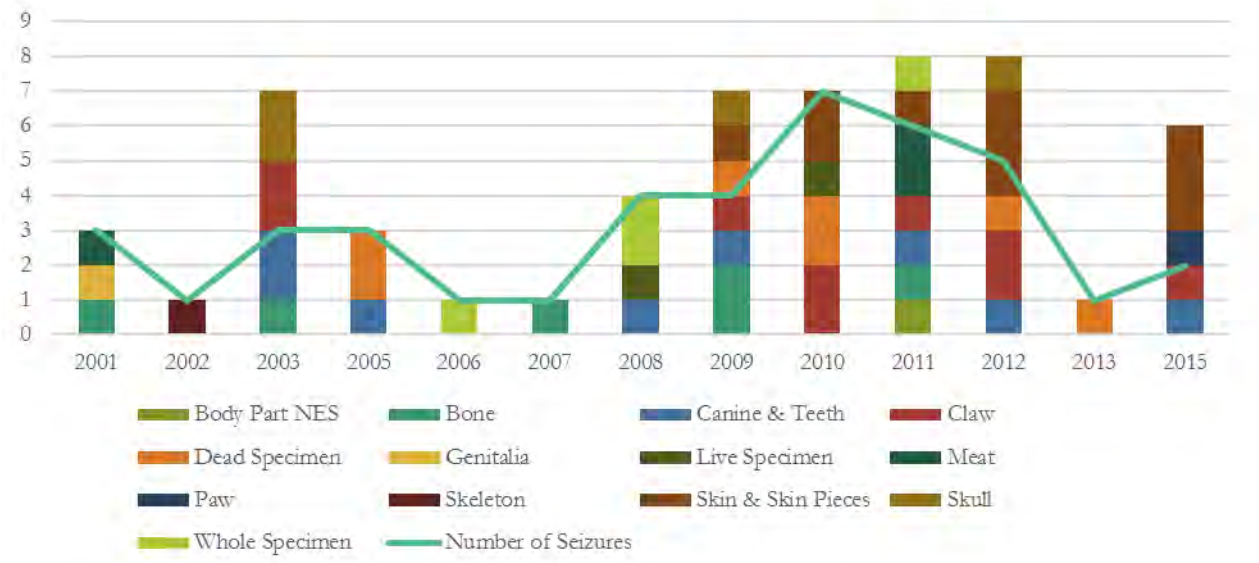
Malaysia reported a number of large seizures in two particular years, 2008 and 2012. The seizure in 2012 remains the country's largest ever Tiger seizure of 22 Tigers, based on the number of skins and bones discovered (Shepherd *et al.,* 2013). A vast majority (n = 22) of the 2008 case involved animals seized from a zoo, including 19 Tiger cubs found in the refrigerator of a zoo. Seizures in these two years had led to the increase in the number of Tigers seized across the whole data period. All other seizures involved much lower numbers of Tigers.

The trend lines (Figure 25) show that the number of seizures reported has increased very slightly throughout the period under review. The trend line highlighting the number of Tigers seized however, has increased significantly during the period and can be attributed to seizures in 2008 and 2012.

Figure 25: Seizures and Tigers Seized (2000-2015)

Malaysia, unlike most TRCs, has not seized any one commodity significantly over others. The most common commodity types seized were skin and skin pieces, claws, and canines and teeth. When looking at the breakdown of commodity types across the 16-year period, there are no particular trends in relation to time as they are sporadically spread out through the years. Up until 2009, Tiger skins were not reported as being seized in Malaysia. Every year since then however, skins have been seized, with the greatest number in 2012 (Figure 26).

Figure 26: Number of seizures and commodity types seized by year



Map 13: Reported Seizures by Quarterly Period (2000-2015)

Map 14 shows the known locations of seizures during 2000-2015 broken into four quarterly periods, and denoted by different coloured circles. The most recent quarter (2012-2015) appears to indicate a greater prevalence of seizures close to the border of Thailand, suggesting a trade route for Tiger parts being trafficked towards the Lower Mekong countries and beyond.

DISCUSSION

Tiger seizures in the country appear inconsistent and sporadic. In the most recent quarterly period (2012-2015), the number of seizures remained relatively low in Malaysia (n=7) and no seizures were reported to have occurred in 2014. In the most recent quarter, more seizures had taken place close to the Malaysian-Thai border and therefore, it can be inferred that the shipments were bound for the international market. In the first two months of 2016, authorities made two more Tiger seizures (Or and Krishnasamy, 2016). In August 2016, over a five-day period, authorities again seized at least two Tiger skins, along with over 200 wildlife parts and derivatives, as well as arrested 12 suspects; seven of whom were Vietnamese nationals who were caught with the two Tiger skins (PERHILITAN, 2016; TRAFFIC, 2016). TRAFFIC's analysis of seizures and subsequent prosecution shows that about 30% of the cases resulted in conviction.

Malaysia's wildlife law is perhaps one of the strongest in the region, with fines reaching MYR500 000 (USD125 000) or five years in prison per offence. The International Trade in Endangered Species Act, Malaysia's CITES-implementing legislation, also carries a maximum fine of MYR2 million in aggregate (USD488 000) and up to seven years' imprisonment. In addition, violations for illegal possession and trade within these two laws are also considered as serious offences in the Second Schedule of the Anti-Money Laundering and Anti-Terrorism Financing Act (Amendment) 2014, which carries a fine of MYR5 million (almost USD1.6 million) or imprisonment of up to five years, upon conviction. Collectively, thisis legislation provide more than adequate legal basis to prosecute offenders to the full extent of the law. But while the possibility of creating an effective deterrent to poachers and illegal traders

exists, it has not achieved the intended outcome. The highest fine meted out so far was in connection to the large seizures in 2012 involving 22 Tigers (as well as nine Elephant *Loxodonta africana* tusks). The offender, who was reported to be storing the parts for a Thai national, was fined a total of MYR200 000 (valued at USD66,700 at the time) and a jail term of 24 months which ran concurrently for all the offences, effective from the date of his arrest (Shepherd *et al.,* 2013). This particular case could have seen the accused serving a 13-year maximum jail term, or fines exceeding millions of Ringgit, and indicates the crucial need to tackle the investigations and prosecution aspect, particularly in relation to judiciary engagement. Comprehensive investigations into individuals connected with illegal hunting and trade of Tigers remain one of the most crucial aspects for the Malaysian government to invest in, coupled with the need for the judiciary to recognize the seriousness of such crimes.

6.9 Country Profile: Myanmar

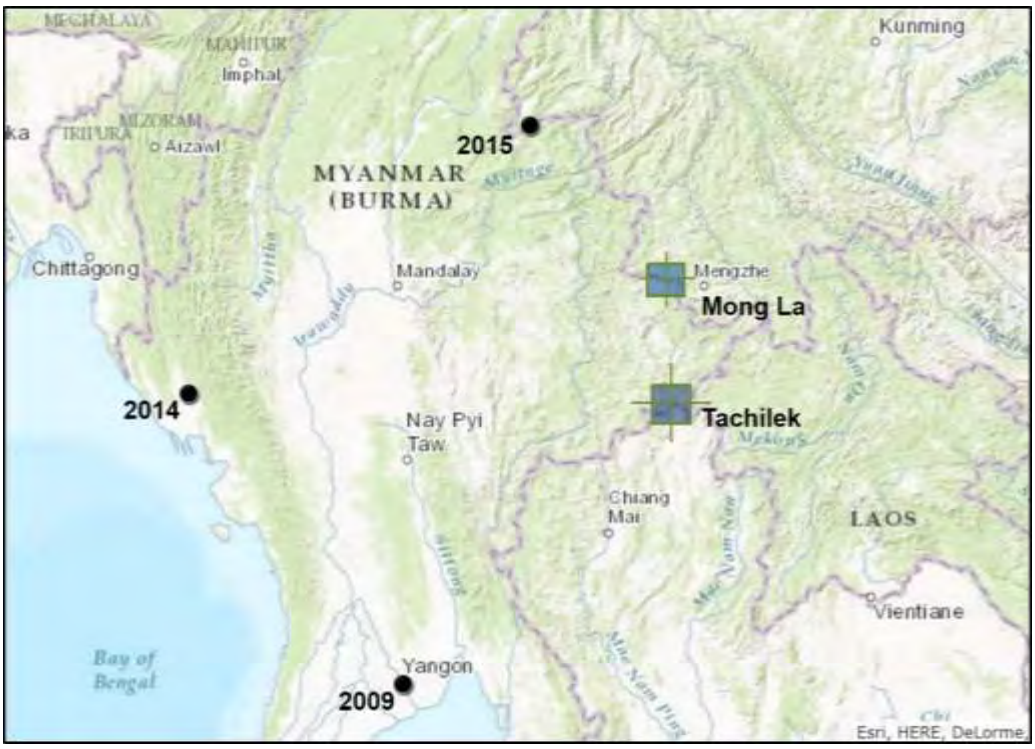
Currently, there is no official estimate for the number of wild Tigers in Myanmar. The government of Myanmar estimated in 2010 that some 86 Tigers were thought to exist. However, no formal national survey has been undertaken in recent times (WWF, 2016c). Hope remains though, because of the abundance of suitable forests for two sub-species of Tigers known to exist there; the Bengal and Indochinese Tigers. The best hope for the Indochinese sub-species is in the Dawna Tennaserim landscape on the Thailand-Myanmar border where an estimated 250 Tigers remain.

Table 22: Total Reported Seizures in Myanmar (2000-2015)

Year	Count	Max. # Tigers	Commodity Type
2009	1	1	Canines
2014	1	1	Bone
2015	1	1	Skin
Total	**3**	**3**	**3**

During the period under review, Myanmar had reported three seizures, representing less than 1.0% of the global total. Map 14 shows the locations of the three reported seizures in Myanmar. In addition to this, at least 10 seizures were known to have occurred in China where the Tigers had originated from Myanmar, although this is considered to be an underestimated figure. The locations of two important open wildlife markets are also plotted, Mong La on the border with China and Tachilek on the border with Thailand.

Map 14: Reported Seizures in Myanmar and Key Open Markets (2000-2015)



DISCUSSION

Myanmar largely presents an information gap when attempting to assess the country's Tiger population and level of illegal Tiger trade. Little can be interpreted from the reported seizure picture as only three incidents have been reported during the 16-year period under review, representing a total of three Tigers (Table 22). The situation in Myanmar supports the rationale that analysing seizure data alone can often present very limited findings. Comparing the number of Tiger seizures in Myanmar with neighbouring countries such as India or Thailand implies that Tiger trade occurs largely unchallenged. It is suggested that its strategic positioning and weak governance in the past, have likely contributed to the hazy picture presented here today.

The Special Development Zone of Mong La, Shan State, Myanmar, sits on the border with China and is under the de facto control of the National Democratic Alliance Army (NDAA). Under the NDAA's control, Mong La has gained a notorious reputation as a hub for prostitution, gambling and drug trafficking, in addition to the sale and trafficking of animal body parts (Oswell, 2010; Nijman and Shepherd, 2014). Due to its close proximity with China, it now represents a Chinese "enclave", predominantly catering to the Chinese market and holds parallels with the SEZ in Lao PDR in that perspective. Observations of the wild cat trade at the markets of Tachilek (on the Thailand-Myanmar border) and Mong La (on the China border) between 2000 and 2014 found substantial differences in the level of trade at the two locations. In Tachilek, wild cat parts including Tiger and Leopard *Panthera pardus* skins and skulls reduced from 35 in 2000 to only six for 2013 (Nijman and Shepherd, 2014). At the same time, the incidence of trade trebled in Mong La from six parts observed in 2006 to 21 in 2014. Traders spoken to at both locations claimed that Tiger and Leopard products were predominantly sourced from India and Myanmar. Most recently and in particular reference to the Pangolin trade, surveys at the town found 42 bags of scales, 32 whole skins, 16 foetuses or Pangolin parts in wine and 27 whole Pangolins openly for sale during four visits (2006, 2009, 2013–2014, and 2015). This reaffirms its status as a significant hub for illegal trade (Nijman *et al*, 2016) as well as the important enabling role that it plays at a regional level. Despite these identified instances of illegal Tiger trade at those key markets, there is yet to be any seizures reported there.

In June 2016, a Myanmar news outlet reported that the authorities were planning to close down the Mong La marketplace, following a statement by President U Htin Kyaw at a World Environment Day event that illegal wildlife trafficking would no longer be tolerated in Myanmar. U Win Naing Zaw (a director of the Natural Resources and Environmental Conservation Ministry) was quoted as saying that government departments were collaborating with respective local administrations to implement this plan (Frontier, 2016). There are vulnerabilities at border points. At present it is only possible to travel freely over land between Myanmar and Thailand. The India crossing (at Moreh, Manipur State) and China crossing (at Ruili, Yunnan Province) both require a permit. Crossing to Bangladesh is currently not permitted to foreigners, and Lao PDR has no official border crossing although one is expected to open soon.

At its 65th meeting (SC65, Geneva, 2014), the Standing Committee adopted Recommendations in which it "a) requests Lao PDR, Myanmar, Thailand and Viet Nam to review their implementation of Resolution Conf. 12.5 (Rev. CoP16), and in particular: e) for Myanmar to address illegal Tiger trafficking through a combination of law enforcement and regulatory efforts, with a specific focus on its borders with China and Thailand, and the towns of Mong La, Golden Rock and Three Pagodas Pass".

CONTINUING CHALLENGES

Vulnerability at open and unregulated markets and border points particularly between Myanmar with China, Thailand and Lao PDR.

6.10 Country Profile: Nepal

Nepal's current survey findings estimate the presence of 198 Tigers, a 63% increase over the figure reported in 2009, placing Nepal fifth among the TRC population count. Nepal had reported 84 seizures during the period under review and accounted for 10.4% of the total across all TRCs (Table 23). The minimum number of Tigers seized was 186 and accounts for 10.3% of the global total. Nepal reported its highest number of seizures during 2009 and 2010 where there were 12 seizures in each year. Since then, the number of seizures have slowly reduced (Figure 27).

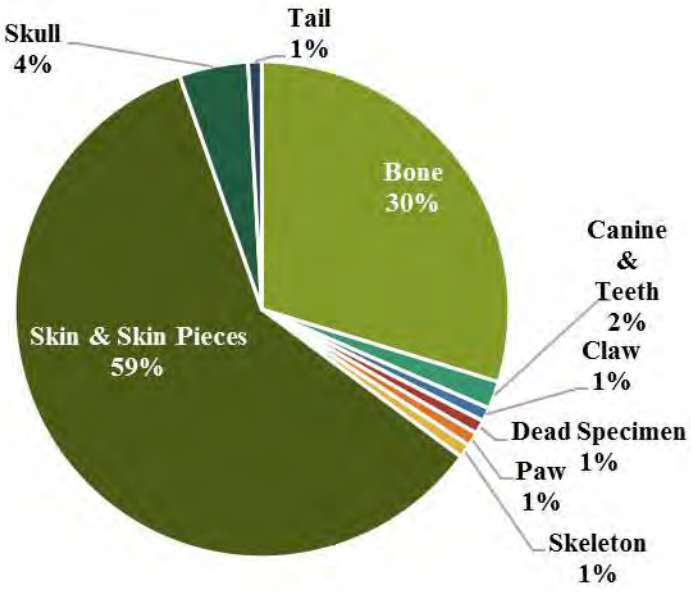
Table 23: Total Seizures and Tigers Seized (2000-2015)

Year	Seizures	Min. # Tigers
2000	5	6
2001	3	4
2002	1	1
2004	8	18
2005	5	32
2006	7	24
2007	5	5
2008	7	25
2009	12	16
2010	12	14
2011	5	10
2012	4	5
2013	5	20
2014	2	3
2015	3	5
Total	**84**	**186**

From the trend lines, the number of seizures had remained constant throughout the period. The minimum number of Tigers being seized had reduced slightly during this time period (Figure 28).

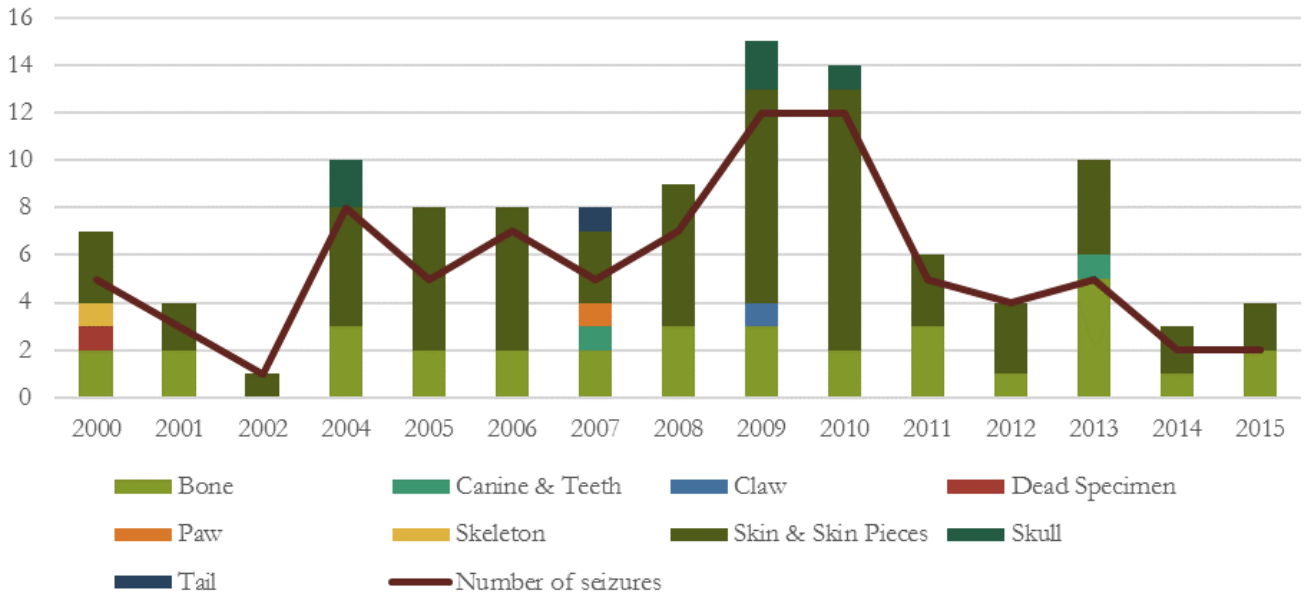
Figure 27: Tiger Seizures and Tigers Seized (2000-2015)

Figure 28: Commodity Types Seized (2000-2015)



Seizure of Tiger parts in Nepal overwhelmingly comprised skin and skin pieces, followed by Tiger bones (Figure 27). All the other commodity types had been seized in very small quantities, in comparison. The seizure of Tiger skins were common in Nepal throughout the period under review, but has reduced since 2010 while the seizure of bones have increased in the same period (Figure 29).

Figure 29: Number of Seizures and Commodity Types Seized by Year



DISCUSSION

At the same time as the increase in Nepal's wild Tiger population, the Nepalese government also announced in May 2016 that the country has achieved two consecutive years of zero Rhino poaching, attributed to the combination of strong political will alongside the active involvement of park authorities. In 2014, Nepal celebrated a year of zero Tiger, Rhino and Elephant poaching but this security for Tigers was short lived. In 2015, a resurgence of Tiger poaching was observed following 12 reported incidents and the arrest of over two dozen suspects, including six Indian nationals as reported by the Department of National Parks and Wildlife Conservation.

It is inferred that stronger enforcement efforts in India may have led to a displacement of crime to neighbouring Nepal, as there appeared to be a greater concentration of activity in the western parts of the country (Shahi, 2016). For example, three arrests for Tiger poaching occurred in Kailali (the province bordering the Indian state of Uttar Pradesh) in 2015. The dense forests in the far western region serves as an important Tiger habitat, therefore any poaching along the Nepalese-India border will threaten the healthy Tiger populations in those areas.

6.11 Country Profile: Russia

Russia's wild Siberian Tiger *Panthera tigris altaica* population now sits at the second highest among the TRCs with 433 individuals and accounting for 11% of the global total. The current figure is an increase from the 2005 census.

In Russia, the number of seizures reported per year is relatively low across the period under review, with just 30 reported, accounting for 3.7% of the total across all TRCs (Table 24). However, the number of Tigers seized is high in comparison, equating to a minimum 102 individuals and accounting for 5.6% of the global total.

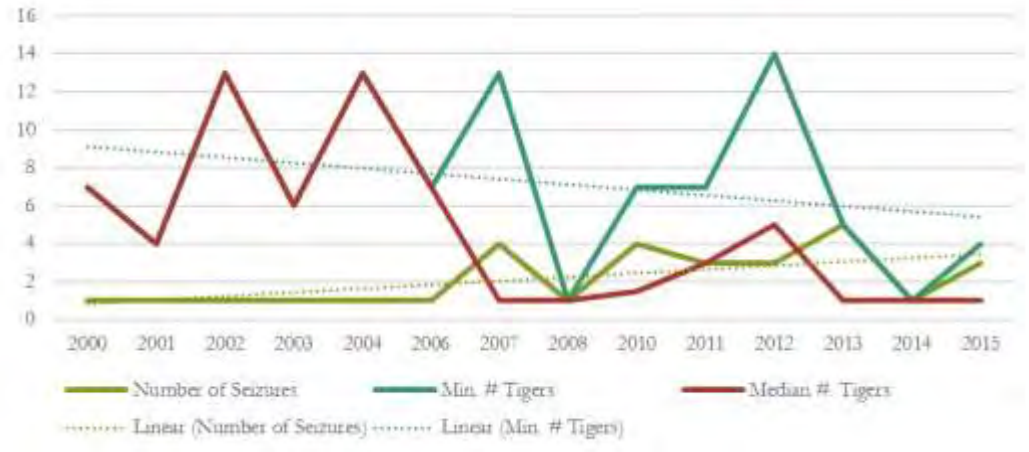
Table 24: Total Seizures and Tiger Seized (2000-2015)

Year	Seizures	Min. #Tigers
2000	1	7
2001	1	4
2002	1	13
2003	1	6
2004	1	13
2006	1	7
2007	4	13
2008	1	1
2010	4	7
2011	3	7
2012	3	14
2013	5	5
2014	1	1
2015	3	4
Total	**30**	**102**

Figure 30 highlights that the number of reported seizures in Russia is increasing. At the same time, the number of Tigers being seized is on the decrease, illustrated by both the trend line and median number of Tigers being seized each time.

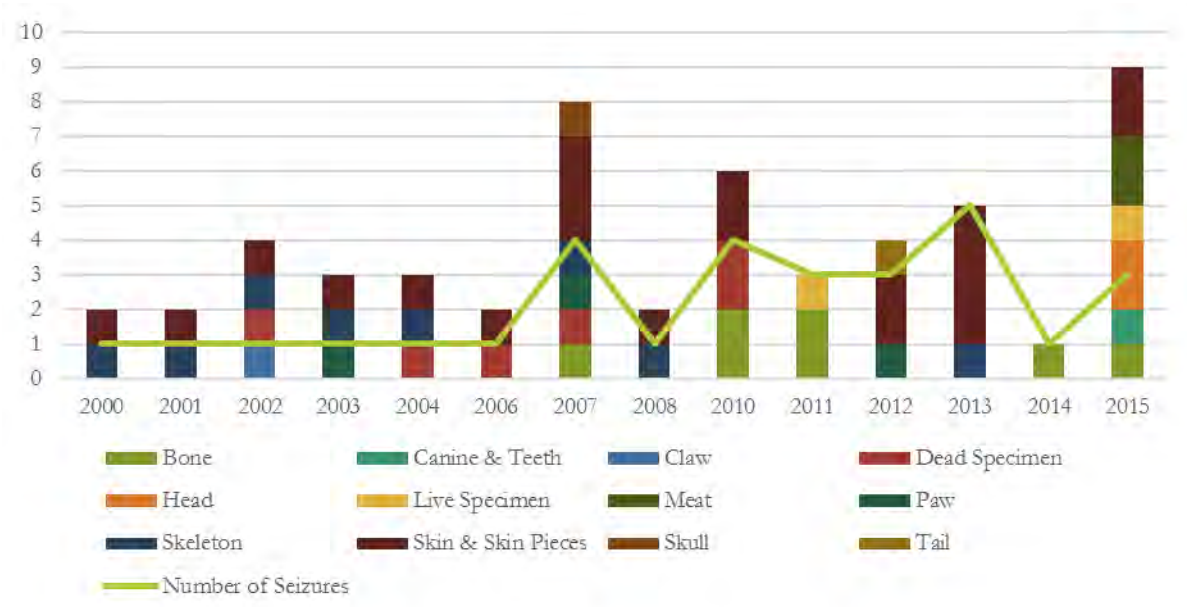
The overall average median of Tigers seized per seizure sits at one across all TRCs. The median number of Tigers seized in Russia was above average across for the first six years and then again between 2010 and 2013, highlighting again the low number of seizures versus the high number of Tigers seized. In the most recent quarter (2012-2015), the median number of Tigers dropped from five in 2012 to one in 2013 where it has remained.

Figure 30: Number of Tiger Seizures and Tigers Seized with Median (2000-2015)



The commodity type found to be most prevalent in all seizures was skin and skin pieces, followed by bone, skeleton and dead specimens. Tigers parts in Russia appear to consist of a wide variety of commodities and do not present any trends across the years under examination, only that Tiger bone was not present in any seizures until 2007. Whole Tiger skeletons were present in eight of the 14 years, with only one seizure of a skeleton in 2013.

Figure 31: Tiger Commodity Type Seized by Year (2000-2015)



DISCUSSION

While the number of Tigers found in trade in Russia is one of the highest across all TRCs during the period under review, this has decreased since 2012. The number of seizures being reported is, in contrast, on the increase which may suggest enhanced law enforcement efforts. Equally, the number of wild Tigers now estimated to exist in Russia has increased and may indicate better protection in the wild.

It is suspected that a major driver of Tiger poaching in Russia is to service demand in China. It was reported in 2007 that Chinese customers and / or traders were recruiting Russian nationals to function as couriers, as the probability of their being stopped and questioned at border points was lower (Burgess *et al.,* 2015). However, in the most recent quarter, there appears to be an emerging threat in the form of Vietnamese demand for Siberian Tigers (Stoner and Nguyen, 2016). In 2015, there were two separate incidents involving Vietnamese nationals found in possession of Tiger parts. One such incident concerned a restaurant in Moscow which was found to be catering in rare animal parts to formulate medicines and exotic wild meat for consumption. The restaurant was not open to the general public and served only Vietnamese nationals.

6.12 Country Profile: Thailand

Thailand's current wild Tiger population sits at an estimated 189 individuals, a decrease from its estimated 200 individuals, and accounting for 5% of the global total. Specifically, there has been encouraging estimates from the Huai Kha Khaeng Wildlife Sanctuary as camera traps confirms its population of Indochinese Tigers *Panthera tigris corbetti* has increased from a low of about 35 to 90, largely attributed to anti-poaching efforts.

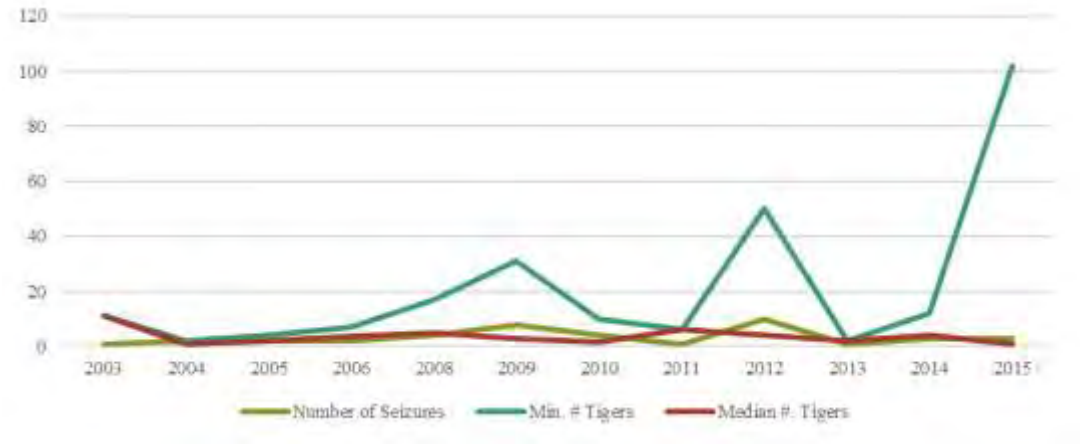
Thailand has reported 41 seizures although the first was not reported until 2003, and accounts for 5.1% of the global total seizures for all TRCs (Table 25). During the period under review, a minimum of 254 Tigers were seized and represents 14.1% of the total. This number is relatively high for the number of seizures being reported, however, this is largely skewed due to the impoundment of 100 Tigers from the Tiger Temple in 2015.

Table 25: Seizures and Tigers Seized (2000-2015)

Year	Seizures	Min. # Tigers
2003	1	11
2004	2	2
2005	2	4
2006	2	7
2008	4	17
2009	8	31
2010	4	10
2011	1	6
2012	10	50
2013	1	2
2014	3	12
2015	3	102
Total	**41**	**254**

Figure 32 indicates that the number of seizures reported throughout the period under review has remained consistent year on year, except in 2012 when 10 seizures were reported. The number of Tigers seized however has increased significantly, by the three peaks in 2009, 2012, and 2015 where the seizures of many Tigers took place. The median average for the number of Tigers seized was above that of the overall average in 10 of the 12 years. This highlights that the number of Tigers seized was higher than would be expected in the majority of seizures. Furthermore, 30 of the 41 seizures equated to more than one Tiger.

Figure 32: Number of Seizures and Tigers Seized by Year (2000-2015)

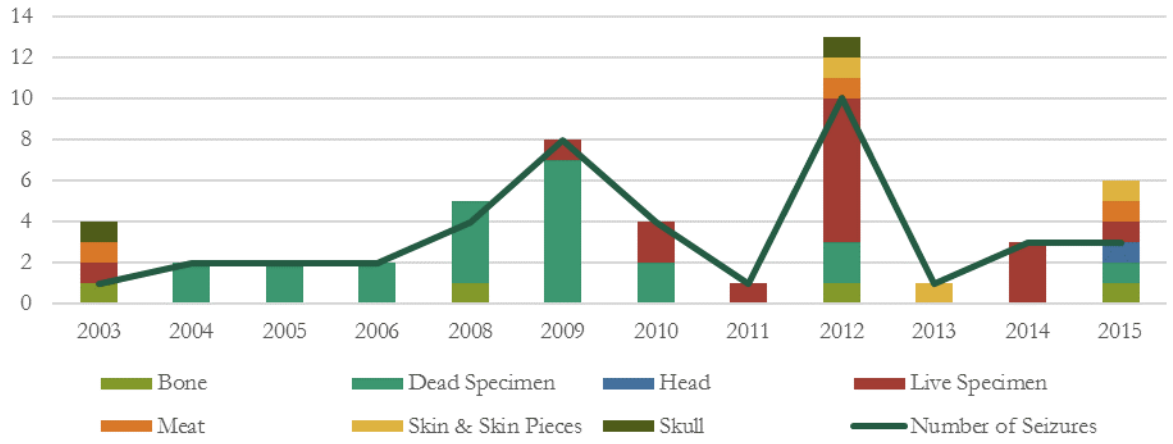


Thailand has seized seven commodity types in this time period, the majority made up of dead and live specimens (Figure 33). The findings also highlight the prevalence of seizures of live specimens from 2010 onwards.

Map 15: Seizures by quarterly period (2000-2015)

Map 15 provides some insight into the routes being used taking Tigers to trade, particularly in the most recent quarter (2012-2015). While there may be an expectation of a concentration of seizures in the capital of Bangkok, given its position as an illegal trade hub as well as an infrastructure node, there appears to be a prevalence of seizures on key arterial routes. This is apparent on the highway connecting the south (from the border with Malaysia) to central Thailand and the road leading towards Vientiane, Lao PDR.

Figure 33: Commodity Type Seized by Year (2000-2015)



DISCUSSION

The issue of Tiger farming in Thailand has been a controversial subject in the context of illegal trade in the past 18 months due to the activities and focus on the Wat Pa Luang Ta Bua, also known as the Tiger Temple in the western Kanchanaburi province. The temple was well known for the practice of allowing tourists to pet, and have their photo taken with a Tiger. Rumours about the facility and its involvement in wildlife trafficking were confirmed in 2016 when leakages of their Tigers into trade were confirmed (see Threat Assessment in page 36). While the story generated a great deal of media attention internationally, judicial action has not been taken against the Abbott or any individual connected to the case. The case is still ongoing. Seizure locations as indicated in Map 20 point to a route leading to Lao PDR. This requires further investigation, and indeed, should be the focus of any law enforcement efforts.

According to anecdotal information, the method of killing the Tigers involve drowning them in cages, something they call "sua damnam" (เสือดำน้ำ) or diving tigers. The Tigers are placed in small metal moving cages and then completely submerged into small water tanks drowning them slowly (Wiek, 2016). This method is quiet, cheap and effective as no gunshots are needed, which could be used as forensic evidence in any legal case. It also serves to minimize damage to the skin. The earlier used method of electrocution left burn marks not only on the external skin and fur of the Tigers but also on the internal muscles and organs, which decreased their value. Some suppliers in farms are reportedly drowning the Tigers themselves and removing organs with no value before handing over the partly processed Tiger to traders, while others deliver live Tigers to slaughterhouses elsewhere to be processed by "professionals" (Wiek, 2016). The trade in Tigers would be more efficient if the suppliers and dealers completely process the Tiger bodies in Thailand, but the Chinese and Vietnamese buyers do not trust their Thai and Laotian suppliers enough to have the Tigers completely processed into bone powder etc. thus, they will only accept the Tigers in one piece or cut in half. This may explain why seizures in whole specimens are more common in Thailand compared to other TRC.

6.13 Country Profile: Viet Nam

The status of wild Tigers in Viet Nam is bleak in 2015, with fewer than an estimated five individuals believed to exist, representing less than 1% of the global Tiger population. Like neighbouring Lao PDR and China, more captive Tigers inhabit Viet Nam than wild individuals.

Table 26: Total Number of Seizures and Tigers Seized (2000-2015)

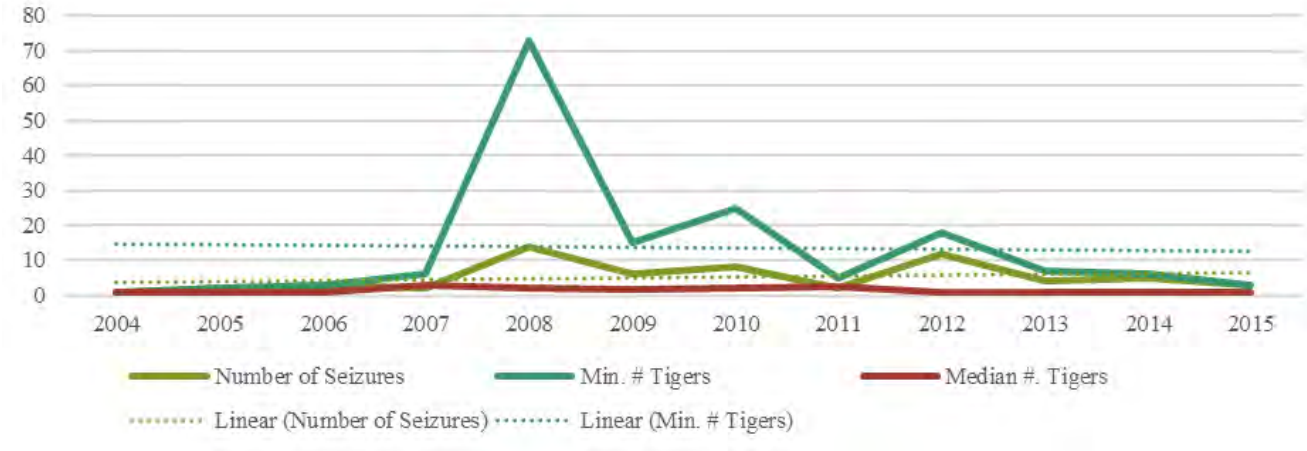
Year	Number of Seizures	Min. # Tigers
2004	1	1
2005	2	2
2006	3	3
2007	2	6
2008	13	71
2009	6	15
2010	8	25
2011	2	5
2012	12	18
2013	4	7
2014	5	6
2015	3	3
Total	**61**	**162**

Viet Nam has reported 61 seizures in 12 years (the first reported seizure was not until 2004), and represents 7.7% of the global total. It has seized a minimum of 164 Tigers and a maximum of 166, accounting for 9.1% of all Tigers seized throughout the period under review (Table 26).

In 2008, there was a steep increase in the number of seizures made in Viet Nam and the number of Tigers seized, but this is largely attributed to a seizure of 42 live Tigers from Duong Tiger Farm.

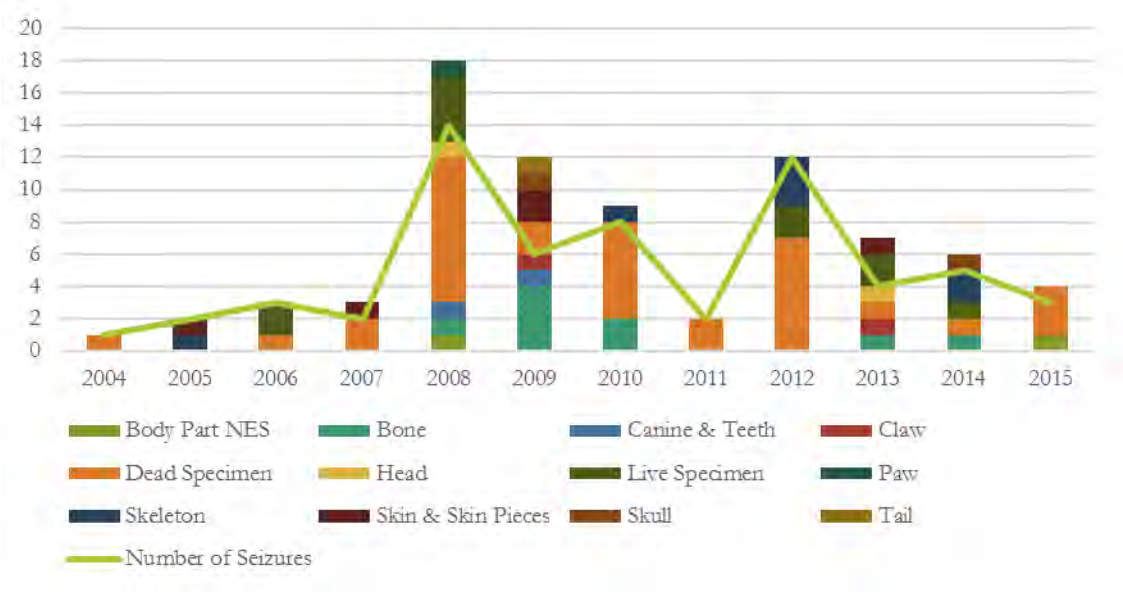
The trend lines show a slight increase in the number of seizures while the number of Tigers being seized has been fairly consistent throughout the time period. The median average of the number of Tigers seized within Viet Nam rose above its average of one for a 5-year period (2006-2011), where it is above the overall average of one, with the highest being three Tigers seized on average in 2007. The overall average for Viet Nam, however, is in line with the overall mean across all TRC.

Figure 34: Number of Seizures and Tiger Seized by Year (2000-2015)



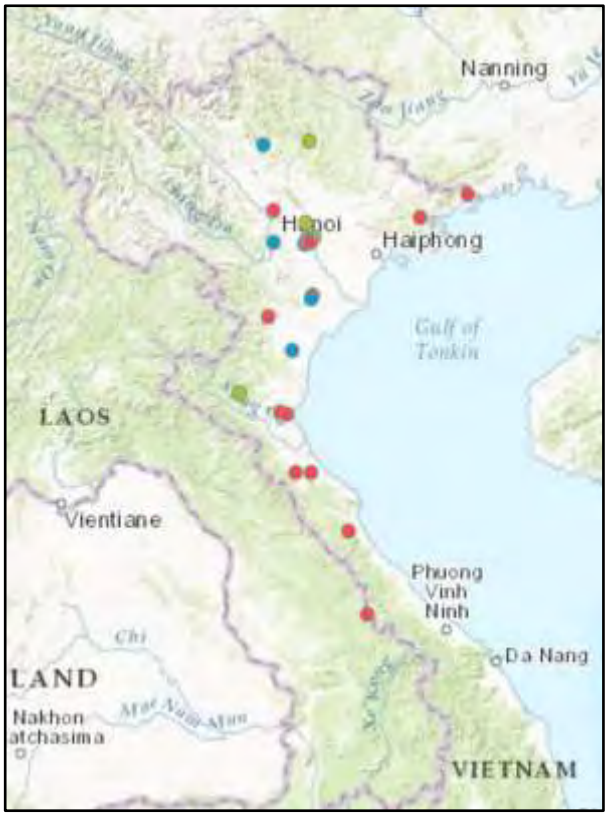
Dead Tigers have been the most common commodity type present in the seizures, followed by live specimens. There has been a wide range of commodity types seized throughout the period (Figure 35). Live specimens have been present in only 11 seizures, yet they account for a disproportionate number of Tigers seized in Viet Nam (65 /40%).

Figure 35: Number of seizures and commodity types seized by year



Maps 16 and 17 plot locations of seizures across Viet Nam which appear to be more distributed in the north. During the most recent quarter (denoted by the blue circles), seizures have been more concentrated around Ha Noi compared to previous years. Map 17 illustrates the abundance of seizures just in Ho Chi Minh City during quarters three and four. Seizures in the south outside of Ho Chi Minh City were rare, particularly in comparison to the north of Viet Nam.

Map 16 & 17: Seizures in Viet Nam by Quarterly Period (2000-2015)



DISCUSSION

Two main threats exist in Viet Nam, the first being the growth in the number of captive Tigers in farms. Viet Nam seized the greatest number of live Tigers after Thailand during the 16-year period under review. The Vietnamese government published the official number of captive Tigers as at 107 individuals across 10 facilities in 2012[12]. This is now known to have increased to 180 individuals with no obvious relationship to the conservation of wild Tigers. At the same time, there has been an increased in unregulated breeding at unregistered private facilities. In 2012, an undercover report stated that over the past decade, several villages in Do Thanh commune in Vietnam's Nghe An Province have become markets for trading Tiger parts. It also documented the presence of illegal Tiger farms where the animals are kept in captivity in small, unsanitary cages similar to pig farms[13]. This is somewhat corroborated by the reported seizure picture, after at least nine seizures (seven of which occurred in the most recent quarter) were reported in Nghe An Province, comprising a minimum of 11 whole Tigers (both live and dead). The likely source is a captive one. The news reports also state that Tigers had been discovered at people's homes.

The second key threat is a perceived domestic market for Tiger bones for medicinal purposes. This is popular among an emerging sub-culture of consumers in Viet Nam (Akella and Allan, 2012). Bones are often boiled down until they form a glue-like substance, known as *cao*. This is then dried, grounded into a fine powder and consumed with alcohol. Tigers found in incidents reported over the last two years suggest that Tiger bones are being sourced from Russia for the Vietnamese market (Stoner and Nguyen, *in prep*). However, at least 50% (12) of the seizures reported in the last quarter were reported to be related to the production of Tiger bone paste and at least two incidents also involved the presence of Lion bones. The information does not appear to suggest that these products were intended for the Chinese market, with one report claiming that Tiger bones are used in Vietnam to make a traditional pain killer for around USD 1 000 for 100 grams.

[12] SC65 Country report
[13] http://tuoitrenews.vn/cmlink/tuoitrenews/features/

7.0 CONCLUSIONS AND RECOMMENDATIONS

The data presented here reinforces earlier findings on the persistent threats faced by Tigers from poaching and trafficking. An overall assessment of the 16-year period shows that an average of 110 Tigers had been seized annually for 16 years. The analysis also outlined the key issues that require improvement - both from an overall global perspective as well as country-specific insights and needs - particularly regarding TRC commitments and responsibilities with respect to CITES implementation, and securing wild Tiger populations.

The primary issue involves elements of law enforcement. Many of the seizures successfully recorded by TRCs, including some described in the report, point to high levels of organized criminality to acquire parts of Tigers. Poaching and trafficking networks involving individuals and businesses operating at a local level also have regional and international implications, particularly where their operations involve cross-border and international trade or where foreign nationals are involved. These chronic problems undermine national and international governance systems, and require dedicated and calculated law enforcement interventions to disrupt and dismantle trafficking networks, and ultimately prevent poaching from taking place.

The seizure analysis reinforces the reality that current collective efforts at the global level are insufficient to stem the threats posed by trade, especially as seizures very often represent only a proportion of detected illegal trade, meaning that actual trade levels are suspected to be much higher. This assessment identifies the critical elements in national-level trade dynamics across some key Tiger range countries, such as the demand for skins and taxidermy purposes (trophy) and bones (traditional medicinal purposes). Each of the problems and issues described highlights the urgent need to address the enabling conditions that allow Tiger trade to continue at such high levels. To this end, the application of seizure data analysis contextualized with up-to-date information on trade, allows for the development of recommendations designed to solve this problem.

There are several common themes that exist across most, if not all, TRCs that need to be tackled strategically to achieve a meaningful impact. Each of these themes had been highlighted in the past as requiring specific intervention by Parties to the Convention on the International Trade in Endangered Wild Fauna and Flora (CITES), particularly TRCs. However, implementation of these measures have yet to achieve sufficient results in stemming the poaching of and trade in Tigers. Addressing these issues require countries, particularly TRCs, to make substantial efforts aimed at: **1)** improving law enforcement effectiveness, legislation and regulation; **2)** regulating captive breeding; and **3)** reducing demand and consumption.

1. LAW ENFORCEMENT, LEGISLATION AND REGULATION

The persistently high number of seizures, involving an equally high number of whole Tigers in trade, is rooted in the lack of **intelligence-led law enforcement** efforts that can lead to successful convictions. TRAFFIC urges TRCs to share **information and intelligence** on seizures and poaching incidences. Parties can also utilize results from seizure analysis and mapping, such as those done by TRAFFIC, to guide law enforcement interventions, along with their own intelligence and inter-agency efforts.

Parties should also share information on Tiger skin seizures to enable the determination of Tiger provenance, and better understand the criminal networks and trade patterns that they employ, including for example, the routes used for Tiger trafficking. This is closely associated with the need for countries to establish a systematic and standardized database to store forensic markers and photographic information, at minimum, to aid investigations and law enforcement efforts, as endorsed by the 17th Conference of Parties (CoP) to CITES in October 2016. Collaboration at a regional level is needed, particularly at hotspots and border areas identified in this report. The role of **bilateral co-operation**, and multilateral law enforcement networks such as the South Asia Wildlife Enforcement Network (SAWEN) and Association of Southeast Asian Nations Wildlife Enforcement Network (ASEAN-WEN), becomes extremely pertinent.

Collaboration with partners at the international level, including INTERPOL through the National Central Bureaus (NCBs), in co-ordinating and supporting investigations, could strengthen efforts on this front, particularly in pursuing nominal information on perpetrators. Where information on criminal activity involves businesses and / or

corporations, investigations by TRCs and other CITES Parties should consider potential money-laundering operations, and prosecutorial actions should be pursued under relevant legislation. The 17th meeting of the Conference of the Parties to CITES also saw the adoption of CITES' first resolution on anti-corruption. Corruption is inherently difficult to quantify, monitor and prevent, and thus, direct links between this seizure analysis and corruption cannot be made. However, any effort to eliminate poaching and Tiger trafficking must consider implementing anti-corruption measures to accompany intelligence-led investigations, prosecution and successful convictions. While many TRCs have laws to **address corruption**, they are seldom used in tackling wildlife crime. Such efforts must be considered as necessary in any law enforcement effort, perhaps in tandem with anti-money laundering investigations where such cases are present, without which organized criminal networks perpetuating this problem will not be eradicated.

While analysis of seizure information provides valuable insights into the occurrences at a global level, efforts to evaluate progress being made by TRCs are hampered by the non-systematic manner in which seizures are reported to CITES, compounded by the overall low rates of reporting. Pursuant to CITES CoP Decisions 16.68 to 16.70 on Asian big cats (*Felidae* spp.), all TRCs were required to "provide information on incidents of poaching of and illegal trade in all Asian big cat species, including their parts and derivatives, which will enable the compilation of a report for the law enforcement community" as well as "gather information on incidents of poaching of and illegal trade in all Asian big cats since the beginning of 2010, undertake an analysis of the information, and prepare a report for the law enforcement community to be circulated in a restricted fashion to relevant enforcement agencies and range States". This has clearly not yet taken place in full, as evidenced by the paucity of feedback from TRCs to the CITES Secretariat based on Notification to the Parties No. 2013/037 regarding Implementation of Resolution 12.5 (Rev. CoP 16). The notification sent to Parties in 2016 regarding a New Annual Illegal Trade Report (No. 2016/007) provides a simple template that enables Parties to report all information regarding illegal trade. Such action by TRCs in a timely manner would aid efforts to better understand the levels of trade across TRCs, especially when assessed using a **standard reporting template**. This can also be useful in assessing their progress at the national, regional and international levels, including the identification of additional support for law enforcement efforts.

Law enforcement can only be effective if the legal tools are in place to regulate and control trade in Tigers. When the legislation is weak or have gaps, for example when they do not protect non-native species, CITES becomes ineffective. Of all TRCs, seven – China, Cambodia, Indonesia, Malaysia, Russia, Thailand and Viet Nam - have Category I listing, meaning their national legislation is deemed to meet CITES requirements. However, the legislation of some of the seven have significant gaps, such as those concerning the regulation of captive facilities, and the lack of protection on the use and trade in non-native species within the country. TRAFFIC therefore proposes a **comprehensive re-assessment of the effectiveness of CITES-implementing legislation for Indonesia, Lao PDR, Thailand and Viet Nam** as a matter of priority, including a re-examination of categorization under the CITES National Legislation Project. These countries have been selected on the basis of gaps and weaknesses in their legislative provisions, such as low penalties and deterrents to illegal activity. This re-assessment should include elements of the law that consider at minimum, the following areas: 1) protection against the hunting, use of and trade in all Tigers (including all sub-species) which effectively affords protection for wild Tigers across all TRCs and allows

TRCs to fully and adequately implement CITES, 2) adequacy of penalties provided by law, 3) captive breeding regulation (for all Tiger species including at the sub-species level), 4) registration of privately-held stocks and the prevention of leakage into the market, and 5) control of products and medicines containing or claiming to contain Tigers. To stem the issue of laundering and leakage regarding captive-bred Tigers, countries that have captive breeding facilities or operations should as a matter of urgency revise their legislation to include non-native Tigers (and other Asian big cats). It is also worth considering that the application of laws is as paramount as the legislation itself. The lengthening of custodial sentences and increased penalties will not be enough on its own, as extensive and thorough investigations also need to happen in order for the legislation to be fully implemented.

Cybercrime involving Tigers is becoming more prevalent, as evidenced by seizures analysed in this dataset where sellers had attempted to offer items for sale on the internet. Social media and phone applications, especially those with restricted-access features, facilitate communication between traders in a non-detectable way. In April 2016, WhatsApp (owned by Facebook) reported the messaging service would be fully encrypted, creating greater challenges for law enforcement agencies to monitor and detect illegal activity. TRAFFIC urges commercial trading sites and social media enterprises to work closely with national governments to **shut down businesses and individuals found to be facilitating the illegal trade in Tigers (and other endangered species) online.** The speed and volume in which cybercriminals operate necessitates collaborative action across agencies and national borders. Viable options for **self-policing** by internet service providers and social media networks combined with mechanisms for reporting illegal trade, should be considered including the establishment of systems to prohibit or **suspend accounts** of repeat offenders. Parties are also encouraged to adopt approaches similar to China's "Zero Tolerance" of online advertising of Tigers which involves joint work between service providers, governments and non-governmental organizations. TRAFFIC also urges members of the public who suspect any illegal activity to **report the suspected crime** directly to local law enforcement agencies. Options for reporting to TRAFFIC can also be made via the Wildlife Witness App, which can be downloaded from the App Store or Google Play for free.

If illegal activity is suspected to be taking place on Facebook, a direct report to Facebook itself is encouraged. Facebook's Community Standards are a strong affirmation of its policy against any illegal activity, including wildlife crime, and provides a procedure for direct reports to Facebook (https://www.facebook.com/help/181495968648557?ref=communi%20ty_standards)

2. CAPTIVE BREEDING

The rise in unregulated **breeding farms and facilities** and its relation to illegal Tiger trade needs to be closely monitored. Seizures of suspected captive origin Tigers (both live and carcasses) had risen in three Southeast Asian countries – Lao PDR, Thailand and Viet Nam, in parallel with the growing number of captive Tigers in these countries. Years of requests from Parties on efforts to regulate and control the leakage of Tigers from captive facilities have not made any meaningful progress on this matter. Reports are also being submitted in a non-standardized manner with varying levels of information that lack the level of detail required to understand the full breadth and implications to wild Tigers. These require further investigation, given the involvement of, and allegations against, captive facilities, the true motives behind such operations and the cloud of uncertainty surrounding the management, regulation and control of such facilities. This analysis has shown that Tigers from these facilities have indeed leaked into and become part of the illegal trade chain. Based on this, TRAFFIC recommends that the following be implemented as immediate priorities by the CITES Secretariat, as contained in CITES CoP 17 Doc. 60.1, and the draft Decision on Asian big cats CoP17 Com. II. 10 that was accepted at the CoP17:

- Conduct a review on the number of Tiger breeding facilities maintained by Parties and the number of Tigers kept in these facilities;
- Request Parties with facilities where large numbers of Tigers are bred in captivity to welcome a mission from the Secretariat to visit such facilities with the purpose of gaining a better understanding of the operations and activities undertaken by them.

In addition, and given the involvement of and reported allegations against captive facilities as well as suspicions on the true motives behind such operations, affected countries, particularly TRCs should **investigate all breeding centres for involvement in illegal activity, and close such facilities if there's evidence of such.** Further analysis is also encouraged to better understand the implications of Tiger seizures from captive facilities on wild Tiger populations. For Lao PDR, the recommendation from the CITES Secretariat's mission in July 2016 points to some key priorities: "There is an urgent need for the adoption of **clear guidelines regarding the operation of Special Free Economic Zones** in relation to farming, consumption and trade in CITES-listed species, as well as clear guidance on how to proceed in cases of alleged illicit trafficking occurring in these zones. No standard procedure seems to be in place to act upon such information". Lao PDR's announcement at the 67th meeting of the CITES Standing Committee (SC67) regarding its intention to discuss ways of phasing out its Tiger farms is relevant in this context, including the development of regulations on wildlife trade in its Special Economic Zones.

DNA profiles and other markings (such as photographic evidence) should be taken from all Tigers held in captivity to monitor the numbers of Tigers being bred in captive facilities, and to prevent more Tigers from being leaked into trade. These samples should be recorded and managed in a centralized database. Samples from seized Tigers can then be taken and cross-referenced with the database, to corroborate or refute claims that Tiger breeding in such facilities is supplying trade.

REFERENCES

AFP. (2015). Bangladesh tiger poaching sparks Sundarbans ban plan. The Economic Times (India). 12 August. http://economictimes.indiatimes.com/news/politics-and-nation/bangladesh-tiger-poaching-sparks-sundarbans-ban-plan/articleshow/48453962.cms

AFP. (2016). Tigers declared extinct in Cambodia. The Guardian (UK). 6 April. https://www.theguardian.com/environment/2016/apr/06/tigers-declared-extinct-in-cambodia

Agence France-Presse. (2015). Only 100 tigers left in Bangladesh's famed Sundarbans forest. *The Guardian* (UK). 27 July. https://www.theguardian.com/environment/2015/jul/27/only-100-tigers-left-in-bangladeshs-famed-sundarbans-forest

Akella, A. and Allan, C (2012) *Dismantling Wildlife Crime*. TRAFFIC North America, WWF, Washington DC, USA.

Anon. (2016). *Tigers Declared Extinct in Cambodia.* Guardian (UK). 6 April. https://www.theguardian.com/environment/2016/apr/06/tigers-declared-extinct-in-cambodia

Anon. (2014). Bắt giữ 40 kg xương động vật hoang dã. *Haiguan Online (Viet Nam) 22 January* https://web.archive.org/web/20140124060549/http://www.baohaiquan.vn/Pages/Bat-giu-40-kg-xuong-dong-vat-hoang-da.aspx

Asian Correspondent Staff. (2016). Thailand: 90 percent of tiger farms and private zoos may be involved in black market. *Asian Correspondent*. 21 June. https://asiancorrespondent.com/2016/06/thailand-tiger-farms-private-zoos-black-market/

Asian Correspondent Staff. (2016). Experts: Cambodia's plan to reintroduce extinct tigers prone to failure. *Asian Correspondent.* 18 April. https://asiancorrespondent.com/2016/04/experts-say-cambodia-tiger-reintroduction-plan-prone-to-failure/

Associated Press. (2012). *Vietnam's tiger farms are called trafficking hubs.* Fox News (US). 27 July. http://www.foxnews.com/tech/2012/07/27/vietnam-tiger-farms-are-called-trafficking-hubs.html

Banks, D and Newman, J. (2004). *The Tiger Skin Trail*. Environmental Investigation Agency. UK.

Bouhuys, J. and Van Scherpenzeel, M. (2015). Online trade in freshwater turtles and tortoises in Indonesia and Malaysia: Legality index of online trade and legislation awareness index among traders. Undergraduate thesis. Van Hall Larenstein, University of Applied Sciences, Netherlands.

Burgess. E. A., Stoner, S.S. and Foley K. E. (2014). *Brought to Bear: An Analysis of Seizures across Asia (2000–2011)*. TRAFFIC, Petaling Jaya, Selangor, Malaysia.

CITES. (2011). Conservation of and trade in tigers and other Appendix-I Asian big cat species. Notification to Parties No. 2011/014, Geneva, 10 February 2011. https://cites.org/eng/notif/2011/E014.pdf

CITES. (2012). *Conservation of and trade in tigers and other Appendix-I Asian big cat species*. Notification to Parties No. 2012/054. Geneva, 3 September 2012. https://cites.org/sites/default/files/eng/notif/2012/E054.pdf

CITES. (2013). *Conservation of and trade in tigers and other Appendix-I Asian big cat species*. Notification to Parties No. 2013/037. Geneva, 27 August 2013. https://cites.org/sites/default/files/notif/E-Notif-2013-037.pdf

CITES. (2014a). I*nterpretation and implementation of the Convention Species trade and conservation Asian big cats.* SC65 Doc. 38 . Sixty-fifth meeting of the Standing Committee Geneva (Switzerland), 7-11 July 2014. https://cites.org/sites/default/files/eng/com/sc/65/E-SC65-38.pdf

CITES. (2014b). I*nterpretation and implementation of the Convention Species trade and conservation Asian big cats.* SC65 Doc. 38 Annex 9. Sixty-fifth meeting of the Standing Committee Geneva (Switzerland), 7-11 July 2014. https://cites.org/sites/default/files/eng/com/sc/65/E-SC65-38.pdf

CITES. (2015a). Notification to Parties: Asian big cats. No. 2015/006. Geneva, Switzerland, 30 January 2015. https://cites.org/sites/default/files/notif/E-Notif%202015-006.pdf

CITES. (2015b). *Questionnaire on the implementation of Recommendations (f) - (n) on Asian big cats, endorsed by the 65th meeting of the CITES Standing Committee* (SC65, Geneva, July 2014). Notification to the Parties No. 2015/006 Annex I. Geneva, Switzerland. https://cites.org/sites/default/files/notif/E-Notif%202015-006-A1.pdf

CITES. (2016a). *Species trade and conservation: Asian big cats (Felidae spp.).* Report of the Secretariat. SC66 Doc. 44.1:. Sixty-sixth meeting of the Standing Committee Geneva (Switzerland), 11-15 January 2016

CITES. (2016b). I*nterpretation and implementation of the Convention Species trade and conservation Asian big cats.* Report of the Working Group. SC66 Doc. 44.2 Sixty-sixth meeting of the Standing Committee Geneva (Switzerland), 11-15 January 2016.

China Internet Watch Team. (2016) WeChat monthly active users reached 806 million in Q2 2016. China Internet Watch (China). 18 August.https://www.chinainternetwatch.com/18789/wechat-monthly-active-users-reached-806-million-in-q2-2016/#ixzz4JJUQmIFp

Chundawat, R.S., Khan, J.A. & Mallon, D.P. 2011. *Panthera tigris ssp. tigris*. The IUCN Red List of Threatened Species 2011: e.T136899A4348945.http://dx.doi.org/10.2305/IUCN.UK.2011-2.RLTS.T136899A4348945.en. Downloaded on **20 August 2016**.

CNN. (2010). Tigers on verge of extinction in the wild, World Wildlife Fund warns. CNN. 10 February. http://edition.cnn.com/2010/TECH/science/02/10/tigers.gone/

Dasgupta, S. (2016). Lao PDR commits to shut its commercial Tiger farms. Mongabay. 26 Sepember. https://news.mongabay.com/2016/09/lao-pdr-commits-to-shut-its-commercial-tiger-farms/

Dey, T.K., Kabir, M.J., Ahsan, M.M., Islam, M.M., Chowdhury, M.M.R., Hassan, S., Roy, M., Qureshi, Q., Naha, D., Kumar, U. and Jhala, Y.V. (2015). First Phase Tiger status report of Bangladesh Sundarbans. Wildlife Institute of India and Bangladesh Forest Department, Ministry of Environment and Forests, Government of the People's Republic of Bangladesh. Bangladesh.

Department of Wildlife and National Parks Peninsular Malaysia (Perhilitan). 2008. National Tiger Conservation Action Plan for Malaysia. Kuala Lumpur, Malaysia.

Dockrill, P. (2016). The world tiger population has increased for the first time in 100 years. Sciencealert. 12 April. http://www.sciencealert.com/the-world-tiger-population-has-increased-for-the-first-time-in-100-years

Drury, R. (2009), Reducing urban demand for wild animals in Vietnam: examining the potential of wildlife farming as a conservation tool. Conservation Letters, 2: 263–270. doi:10.1111/j.1755-263X.2009.00078.x

General Administration of Chinese Customs. (2015). *Kunming Customs Cracks Down on Smuggling of Endangered Animal Products.* Press Release. 14 May. http://english.customs.gov.cn/statics/3f079475-db2a-4b03-82e0-86c8557ade44.html

Ghosh, Nirmal. (2010). *Bearing the Brunt of Illegal Wildlife Trade*. The Straits Times. 2 October: http://wildsingaporenews.blogspot.my/2010/10/bearing-brunt-of-illegal-wildlife-trade.html#.V58e7_l97IU

Global Tiger Forum. (2014). Global Tiger Forum News. *Global Tiger Forum. New Delhi, India.*

Goodrich, J., Lynam, A., Miquelle, D., Wibisono, H., Kawanishi, K., Pattanavibool, A., Htun, S., Tempa, T., Karki, J., Jhala, Y. & Karanth, U. 2015. *Panthera tigris*. The IUCN Red List of Threatened Species 2015: e.T15955A50659951. http://dx.doi.org/10.2305/IUCN.UK.20152.RLTS.T15955A50659951.en. Downloaded on **02 September 2016**.

IFAW. (2012). Born to be Wild – Saving the Majestic Tiger. Project Report. Massachusetts, United States.

IFAW. (2014). Wanted - Dead or Alive: Exposing Online Wildlife Trade. *London, United Kingdom.*

Environmental Investigation Agency (2015). *Sin City: illegal wildlife trade in Laos' Golden Triangle Special Economic Zone*. Environmental Investigation Agency, London, UK.

Environmental Investigation Agency (2016). Call for EU Action to End Tiger Farming and Trade. Press Release. https://eia-international.org/wp-content/uploads/EIA-ENV-WPSI-Joint-Public-Statement-May-26-2016.pdf

Environmental Investigation Agency (2016). Tigers – Zero Demand for Zero Poaching. https://eia-international.org/where-are-the-tigers

Faisal, A. and Naim, Z. (2016). 12 animal traffickers nabbed, RM2 mil worth parts seized. The Star (Malaysia). 2 September. http://www.nst.com.my/news/2016/09/170196/12-animal-traffickers-nabbed-rm2mil-worth-parts-seized-video

Ives, M. (2012). *Vietnam tiger farms called front for illegal sales.* NBC News (UK). 27 July. http://www.nbcnews.com/id/48353425/ns/world_news-world_environment/t/vietnam-tiger-farms-called-fronts-illegal-sales/#.V8Aq9fl97IU

Kawanishi, K. 2015. *Panthera tigris ssp. jacksoni*. The IUCN Red List of Threatened Species 2015: e.T136893A50665029. http://dx.doi.org/10.2305/IUCN.UK.20152.RLTS.T136893A50665029.en. Downloaded on 04 September 2016.

Krishnasamy, K. and Stoner, S. (2016). Trading Faces: A Rapid Assessment on the use of Facebook to Trade Wildlife in Peninsular Malaysia. TRAFFIC. Petaling Jaya, Selangor, Malaysia.

Krishnasamy, K and Or, O. C. (2016). *Almost 400 wildlife seized in the first few weeks of 2016.* Malaysian Naturalist (Vol 69-3): pp 72-75

Krishnasamy, K., Leupen, B.T.C., and Or, O.C. (2016). *Observations of the Helmeted Hornbill Trade in Lao PDR.* TRAFFIC, Southeast Asia Regional Office, Petaling Jaya, Selangor, Malaysia.

Kyne, P. (1999). Cambodia's tiger population second highest in world. The Phnom Penh Post (Cambodia). 13 April. http://www.phnompenhpost.com/national/cambodias-tiger-population-second-highest-world

Lao National Committee for Special Economic Zone Secretariat Office (S-NCSEZ). (2012). *Investment Calling List Guide for SEZ in the Lao PDR: Investment Opportunities in the Lao PDR.* Lao National Committee for Special Economic Zone Secretariat Office, Laos.

Lawson, K. and Vines, A. (2014). Global Impacts of the Illegal Wildlife Trade: The Costs of Crime, Insecurity and Institutional Erosion, Chatham House, London, United Kingdom.

Lynam, A.J. & Nowell, K. 2011. *Panthera tigris ssp. corbetti*. The IUCN Red List of Threatened Species 2011: e.T136853A4346984. http://dx.doi.org/10.2305/IUCN.UK.20112.RLTS.T136853A4346984.en. Downloaded on 20 August 2016.

Lynn, N. H. (2016). *Mong La animal market to be closed, authorities claim*. Frontier (Myanmar). 4 June. http://frontiermyanmar.net/en/news/mong-la-animal-market-to-close-authorities-claim

Naughton, J. (2015). Your WhatsApp secrets are safe for now. But Big Brother is still watching you. *The Guardian* (UK). 10 April. https://www.theguardian.com/commentisfree/2016/apr/10/whatsapp-encryption-billion-users-data-security

News.com.au. (2016). Heartbreaking truth behind this map of Thailand. News.com.au (Australia). 26 July. http://www.news.com.au/travel/world-travel/asia/heartbreaking-truth-behind-this-map-of-thailand/news-story/a687cd4d3dc08ce20ca03a6998cbac8a

Nijman, V. and Stoner, S. S. (2014). Keeping an Ear to the Ground: Monitoring the Trade in Earless Monitor Lizards. TRAFFIC Petaling Jaya, Selangor, Malaysia

Nijman, V., Ming, X.Z. and Shepherd, C.R. (2015) Pangolin trade in the Mong La wildlife market and the role of Myanmar in the smuggling of pangolins into China**.** Global Ecology and Conservation Volume 5, January 2016, Pages 118–126

Nijman, V and Shepherd C, R. (2014). *Trade in tigers and other wild cats in Mong La and Tachilek, Myanmar – tale of two border towns*. Biological Conservation Volume 182 pp: 1–7

Nijman, V. and Shepherd, C.R. (2014). Emergence of Mong La on the Myanmar-China border for the international trade in ivory and elephant parts. *Biological Conservation* 179: 17-22.

Ng, J. and Nemora (2007). *Tiger trade revisited in Sumatra, Indonesia*. TRAFFIC Southeast Asia.

Nowell, K., and Pervushina, N. (2014). Review of Implementation of Resolution Conf. 12.5 (Rev COP 16) on Conservation of and Trade in Tigers and other Appendix-I Asian Big Cat species. Report to the CITES Secretariat for the 65th meeting of the Standing Committee

Oland, K. and Gigova, R. (2016). 'Mayhem' as authorities try to capture 137 tigers at Thai temple. *CNN*. 1 June. http://edition.cnn.com/2016/05/31/asia/thailand-tiger-temple-cleared/

Oswell, A.H., 2010. The Big Cat Trade in Myanmar and Thailand. TRAFFIC Southeast Asia, Petaling Jaya, Malaysia.

Parker, D. (2013). Stuffed tigers send two soldiers to jail in Indonesia. Mongabay. 28 October. https://news.mongabay.com/2013/10/stuffed-tigers-send-two-soldiers-to-jail-in-indonesia/

PEHILITAN. (2016). Press Conference On 'OPS CHAMELEON' By The Department Of Wildlife And National Parks (PERHILITAN) Peninsular Malaysia. PERILITAN Press Release. 2 September. http://www.wildlife.gov.my/index.php/en/mutakhir/138-press-conference-on-ops-chameleon-by-the-department-of-wildlife-and-national-parks-perhilitan-peninsular-malaysia

A.C.D. Barlow, I. Ahmad & J.L.D. Smith. (2013). *Profiling Tigers (Panthera tigris) to Formulate Management Responses to Human-Killing in the Bangladesh Sundarbans*. Wildlife Biology in Practice. December 9(2): 30-39 doi:10.2461/wbp.2013.9.6

R Core Team (2016). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/

Reuters. (2015). Thailand's famous Tiger Temple raided for suspected wildlife trafficking. *The Guardian* (UK). 5 February. https://www.theguardian.com/environment/2015/feb/05/thailands-famous-tiger-temple-raided-for-suspected-wildlife-trafficking

Robin Des Bois. (2015). On the Trail: Information and analysis bulletin on animal poaching and smuggling. Robin Des Bois. Paris, France

Rohr, B. (2016). *Global Wild Tiger Population Increases, But Still a Long Way to Go*. WWF Press Release. 11 April. http://www.worldwildlife.org/press-releases/global-wild-tiger-population-increases-but-still-a-long-way-to-go--3

Rahman, K. (2015). Famous Thai tiger temple where Buddhist monks ride and play with the giant cats is cleared of mistreating the animals after claims they were drugging them. *The Daily Mail* (UK). 5 February. http://www.dailymail.co.uk/news/article-2950616/Wildlife-officials-Famed-Thai-temple-doesnt-abuse-tigers.html#ixzz4IR6fqtBx

SAWEN. (2015). South Asian countries continue their combat against wildlife crime. SAWEN Press Release. 5 November. http://www.sawen.org/news/details/regional-meeting-of-sawen-focal-persons-

Saif, S. and Macmillan. (2016). Poaching, Trade, and Consumption of Tiger Parts in the Bangladesh Sundarbans. DOI: 10.1057/978-1-137-53843-7_2

Samia Saif, Aal M. Russell, Sabiha I. Nodie, Chloe Inskip, Petra Lahann, Adam Barlow, Christina Greenwood Barlow, Md. A. Islam & Douglas C. MacMillan. (2016). Local Usage of Tiger Parts and Its Role in Tiger Killing in the Bangladesh Sundarbans, Human Dimensions of Wildlife, 21:2, 95-110, DOI: 10.1080/10871209.2015.1107786

Seidensticker, J., Christie, S., & Jackson, P. (2001). Approaches to tiger conservation. In V. Thapar (Ed.), Saving wild tigers 1900–2000 (pp. 343–353). Delhi, India: Permanent Black.

Shahi, P. (2016). *Poaching still a major threat to Tigers*. The Kathmandu Post (Nepal) 12 February. http://kathmandupost.ekantipur.com/news/2016-02-12/poaching-still-a-major-threat-to-tigers.html

Sharmaa, K., Wright, B., Joseph, T., & Desaic, N. (2014). Tiger poaching and trafficking in India: Estimating rates of occurrence and detection over four decades. http://dx.doi.org/10.1016/j.biocon.2014.08.016

Sinha, S (2012). *'Tiger Temple' in Thailand is Growing Tourism Hot Spot: Where Wild Stays with the Monks*. International Business Times. 25 April. http://www.ibtimes.co.uk/tiger-temple-thailand-growing-tourism-hot-spot-333128

Sinha, M. (2008). *Dog skins for tiger's, fake market thriving in capital.* The Indian Express (India). 12 September. http://archive.indianexpress.com/news/dog-skin-for-tiger-s-fake-market-thriving-in-capital/360710/

Shepherd, C. R. and Magnus, N. (2004). *Nowhere to hide: The trade in Sumatran Tiger* TRAFFIC Southeast Asia

Shepherd, C.R.S., Khan, S and Krishnasamy, K. (2013). *Largest Tiger seizure ever in Malaysia*. CATnews 59 Autumn 2013. Pp11

Sony, O. (2015). Kunming Customs Cracks Down on Smuggling of Endangered Animal Products. *The Cambodia Daily* (Cambodia). 7 October. https://www.cambodiadaily.com/news/vietnamese-man-arrested-for-smuggling-ivory-tiger-claws-haul-96681/

Stoner, S (2014). *Tigers: Exploring the Threat from Illegal Online Trade.* TRAFFIC Bulletin Vol. 26, No 1

Stoner, S, S and Nguyen, D, T, M. (2016). *The Wildlife Connection*. TRAFFIC Newsletter Illegal Wildlife Trade in South-East Asia (Edition Two: August 2016)

Stoner, S.S, and Pervushina, N. (2013). *Reduced to Skin and Bones Revisited: An Updated Analysis of Tiger Seizures from 12 Tiger Range Countries (2000–2012).* TRAFFIC, Kuala Lumpur, Malaysia.

Target. (2009). Lao Business People do Tiger Farming for Export. Target (Lao PDR). August 2009. http://targetlaos.com/

Thanh Nien News (2014). *40 kg xương động vật về từ Nga là xương sư tử*. Thanh Nien News (Viet Nam). 25 March. http://thanhnien.vn/thoi-su/40-kg-xuong-dong-vat-ve-tu-nga-la-xuong-su-tu-458298.html

Thanh Nien News (2015). *2 Vietnamese arrested in Russia for slaughtering Siberian Tiger*. Thanh Nien News (Viet Nam). 17 May. http://www.thanhniennews.com/society/2-vietnamese-arrested-in-russia-for-slaughtering-siberian-tiger-43445.html

The Hindu. (2014). Only 3,200 tigers left in the wild: WWF report. The Hindu. 30 July. http://www.thehindu.com/sci-tech/energy-and-environment/only-3200-tigers-left-in-the-wild-world-wide-fund-report/article6263505.ece

The Kathmandu Post. (2016). *Govt ratifies South Asia Wildlife Enforcement Network statue*. The Kathmandu Post. (Nepal). 4 July. http://kathmandupost.ekantipur.com/news/2016-07-04/govt-ratifies-south-asia-wildlife-enforcement-network-statue.html

The Nation. (2016). *Over 100 wild animals 'rescued' from Hua Hin zoo*. *The Nation* (Thailand). 9 June. http://www.nationmultimedia.com/national/Over-100-wild-animals-rescued-from-Hua-Hin-zoo-30287723.html

The Hindu. (2015). *The seizure of fake Tiger skin underlines need for vigil against trade in wildlife parts.* The Hindu (India). 13 June. http://www.thehindu.com/news/national/karnataka/seizure-of-fake-tiger-skin-underlines-need-for-vigil-against-trade-in-wildlife-products/article7312006.ece

The Star. (2015). Unite to protect wildlife. The Star (Malaysia). 9 September. http://www.thestar.com.my/opinion/letters/2015/09/09/unite-to-protect-wildlife/

TRAFFIC. (2008). *What's Driving the Wildlife Trade? A Review of Expert Opinion on Economic and Social Drivers of the Wildlife Trade and Trade Control Efforts in Cambodia, Indonesia, Lao PDR and Vietnam*. East Asia and Pacific Region Sustainable Development Discussion Papers. East Asia and Pacific Region Sustainable Development Department, World Bank, Washington, DC.

TRAFFIC. (2015). Large haul of "Tiger" and other wildlife parts in Malaysia. TRAFFIC Press Release. http://www.traffic.org/home/2015/9/1/large-haul-of-tiger-and-other-wildlife-parts-in-malaysia.html

TRAFFIC. (2016b). Malaysia nabs 12 with over 200 parts of protected species. TRAFFIC Press Release. 2 September. http://www.traffic.org/home/2016/9/2/malaysia-nabs-12-with-over-200-parts-of-threatened-species.html

TRAFFIC (2016b). Officers from China and Lao PDR receive CITES law enforcement training. TRAFFIC Press Release. July. http://www.traffic.org/home/2016/8/1/officials-from-china-and-lao-pdr-receive-citeslaw-enforceme.html

TRAFFIC. Tiger cub among menagerie of animals seized in Malaysia enforcement operations. TRAFFIC Press Release. 20 October. http://www.traffic.org/home/2016/10/20/tiger-cub-among-menagerie-of-animals-seized-in-malaysia-enfo.html

Transparency International. (2016). Corruption Perception Index. Transparency International. Berlin, Germany. http://www.transparency.org/cpi2015#downloads

Tshering. U. (2015). Nation-wide survey confirms 103 Tigers in Bhutan. Ministry of Agriculture and Forests. 31 July. http://www.moaf.gov.bt/nation-wide-survey-confirms-103-tigers-in-bhutan/

Underwood, F.M., Burn, R.W. and Milliken, T. (2013*). Dissecting the Illegal Ivory Trade: An Analysis of Ivory Seizures Data*. PLoS ONE 8(10)

UNODC. (2007). Chapter 7: The illegal wildlife trade in East Asia and the Pacific. UNODC, Vienna, Austria.

UNODC. (2008). *Opium Poppy Cultivation in South East Asia*. Vienna, Austria.

UNODC. (2010). The Globalization of Crime: A Transnational Organized Crime Threat Assessment. UNODC. Vienna, Austria.

USFWS. (2016). Administration Takes Bold Step for African Elephant Conservation: Completes Near-Total Elephant Ivory Ban to Cut Off Opportunities for Traffickers. USFWS Press Release. 2 June. https://www.fws.gov/news/ShowNews.cfm?_ID=35686

Venables, W. N. & Ripley, B. D. 2002. *Modern Applied Statistics with S*. New York, Springer

Venkat, V (2016). Big Cat Population up by 690. 16 April. The Hindu (India). http://www.thehindu.com/sci-tech/energy-and-environment/global-tiger-population-up-by-22-per-cent/article8461131.ece

Verheij, P.M., Foley, K.E. and Engel, K. (2010). *Reduced to Skin and Bones. An Analysis of Tiger Seizures from 11 Tiger Range Countries (2000–2010).* TRAFFIC International, Cambridge, UK.

Vidal, J. (2016). Tiger temple scandal exposes shadowy billion-dollar Asian trade. *The Guardian* (UK). 4 June. https://www.theguardian.com/environment/2016/jun/04/tiger-temple-scandal-billion-dollar-trade-china-thailand

Wiek, E. (2016). The Illegal Tiger Trade and "Diving Tigers". *Wildlife Friends Foundation* (Thailand). 7 July. http://www.wfft.org/tigers/illegal-tiger-trade-diving-tigers/

Williams, V.L., Newton, D.J., Loveridge, A.J. and Macdonald, D.W. (2015). *Bones of Contention: An Assessment of the South African Trade in African Lion Panthera leo Bones and Other Body Parts*. TRAFFIC, Cambridge, UK & WildCRU, Oxford, UK

Wong, R. W.Y. (2015). The Organization of the Illegal Tiger Parts Trade in China. British Journal of Criminology

WWF. (2015). 103 wild tigers in Bhutan - A Roaring Success. Press Release. 4 Aug. http://www.wwfbhutan.org.bt/?250350/103-wild-tigers-in-Bhutan---A-Roaring-Success

WWF. (2016a). Bringing back Cambodia's roar: Reintroducing tigers to the Eastern Plain. WWF. Phnom Penh, Cambodia.

WWF. (2016b). Global wild tiger population increases, but still a long way to go. WWF Press Release. Gland, Switzerland.

WWF. (2016). Thailand's Tiger Temple Raid Highlights Need to Close All Tiger Farms in Asia. WWF Press Release. 29 July. http://wwf.panda.org/wwf_news/?274510/Thailands-Tiger-Temple-Raid-Highlights-Need-to-Close-Tiger-Farms-in-Asia

WWF. (2016c). Global wild tiger population status, April 2016: Background Document. Gland, Switzerland.

Yu. X and Jia, W. (2015). *Moving Targets: Tracking Online Sales of Illegal Wildlife Products in China.* TRAFFIC. Cambridge, UK.

NOVEMBER 2016

TRAFFIC, the wildlife trade monitoring network, is the leading non-governmental organization working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.

For further information contact:
TRAFFIC
Southeast Asia Regional Office
Unit 3-2, 1st Floor
Jalan SS23/11, Taman SEA
47400 Petaling Jaya
Selangor, Malaysia

Telephone: (603) 7880 3940
Fax : (603) 7882 0171
Website: www.traffic.org

UK Registered Charity No. 1076722,
Registered Limited Company No. 3785518.

TRAFFIC
the wildlife trade monitoring network
is a strategic alliance of
WWF
IUCN