SUMMARY AND OVERVIEW

Four years have passed since the first *World Wildlife Crime Report* was published in 2016. In the interim, there have been significant changes in both the policy environment and the illicit markets. If anything, trafficking of wild fauna and flora has grown in importance in the public consciousness and has risen on the political agenda, as it becomes clear that wildlife crime has negative implications for the climate change, preservation of biodiversity, security and public health. In response, controls have tightened in a number of wildlife markets since the first publication, including those on the markets for rosewood, ivory, and pangolins.

As in the previous Report, this edition draws heavily on the seizure data compiled in UNODC's World WISE database. This database has grown, currently containing just under 180,000 seizures from 149 countries and territories.[1] Contributing to this growth is the new CITES illegal trade reporting requirement. Each October since 2017, CITES Parties have been required to submit data on all seizures of wildlife made in the previous year. As an ICCWC partner, UNODC has been maintaining these data and analysing them when permitted to do so by the relevant CITES Party.[2] Thanks to this process, the UNODC World WISE database now has strong coverage for seizures that took place in 2016 and 2017. Seizure data for 2018 have also been included for some countries, after their review.[3] There are inherent limitations on the uses of seizure data, and not all seizure data are of equal quality. With these limitations in mind, World WISE is used cautiously in this report.

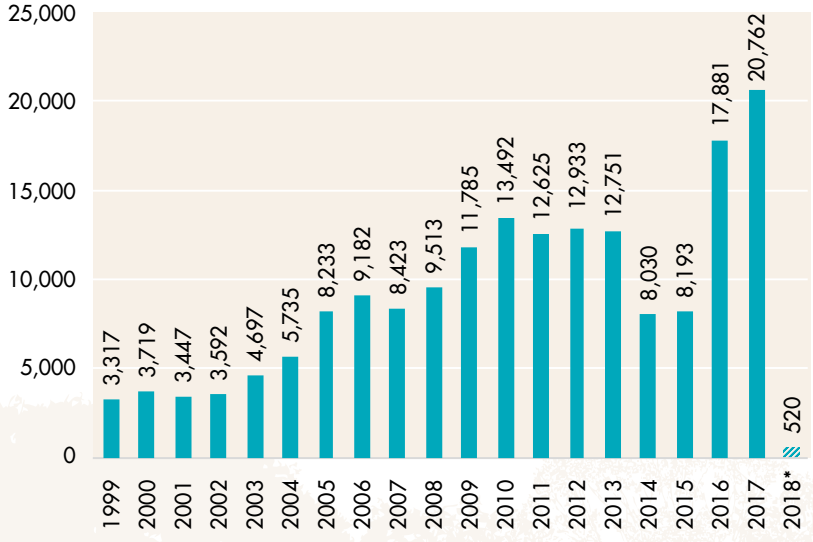
The nature of this CITES-oriented data source affects the scope of this report. CITES lays out rules for trade in over 35,000 protected species, and it requires its parties to penalise trade in violation of these rules. But there are many crimes affecting wildlife that have nothing to do with these species. For example:

- the millions of species that are **not listed by CITES** may be illegally harvested and traded internationally, as is frequently the case in timber and fish trafficking;
- CITES is limited to regulating international trade, so the illegal harvesting of wildlife, such as the **poaching** of protected species, does not fall within its scope if the product is not transported internationally;
- **domestic markets** for wildlife are also beyond its jurisdiction, whatever the source of the wildlife, so long as the products concerned cannot be proven to have crossed borders in contravention of CITES rules.

Thus, by focusing on CITES-related seizures, the core data used in this report do not cover all aspects of wildlife crime. To better understand markets where illegal materials are feeding legal industries, legal trade data are used. In addition to these core data, additional research was performed for this report for a range of species. Making use of this additional research, other forms of illegal harvest and trade are considered where this activity is relevant to the markets examined. Consequently, for the purposes of this report, the term "wildlife crime" refers to *harvesting and trade contrary to national law*, particularly, but not exclusively, the national laws implemented in fulfilment of CITES obligations. This includes offences that might not attract criminal sanctions in some parts of the world.

The World WISE Database illustrates the diversity of wildlife crime. Nearly 6,000 species have been seized between 1999-2018, including not only mammals but reptiles, corals, birds, and fish. No single species is responsible for more than 5% of the seizure incidents. Virtually every country in the world plays a role, and no single country is identified as the

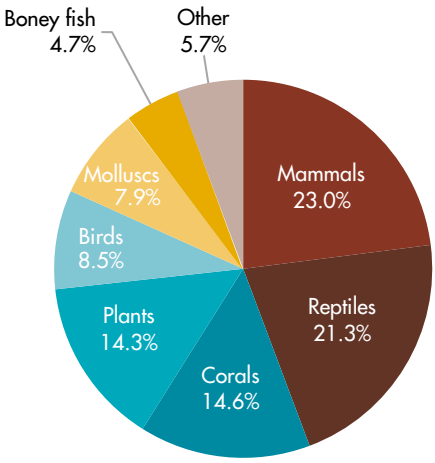
Fig. 1 Number of seizures in World WISE by year



Source: UNODC World WISE Database

* At the time the data processing for this report was finalized, the data collection for seizures made in 2018 was not yet complete.

Fig. 2 Share of all seizure incidents in World WISE by taxonomic category, aggregated 1999-2018



Source: UNODC World WISE Database

source of more than 9% of the total number of seized shipments captured in the database. Suspected traffickers of some 150 nationalities have been identified, illustrating the fact that wildlife crime is truly a global issue.

A review of the data indicates that illegal wildlife markets do not correspond neatly to biological categories. Some markets make use of multiple species. For example, there are many tree species that are classified as "rosewood", and collectors of rare reptiles intentionally seek out multiple species. In contrast, some species feed multiple distinct markets. For example, pythons are illegally taken for their use live as pets, for their skins to make handbags and shoes, for their meat as a food, and for their organs as a traditional medicine. As a result, the markets referred to in this report may be comprised of multiple species or just part of one particular species. For the purposes of clarity and focus, they may also be limited geographically.

Using the relative valuation approach (see Box 2), changes can be seen over time in the shares of the total seizures that some key markets occupy. Between 2009 and 2013, rosewood was clearly dominant, rhino horns and pangolins represented only 5.5% and 4% of the total respectively, and agar wood also stood at 4%. But between 2014 and 2018, rosewood's dominance declined as the market shifted to new species. Both rhinos and pangolins took a much larger share of the total seizures than in the past, and agar wood seizures experienced a sharp relative decline.

Box 1: Seizures as part of the evidence

Seizure data comprise an important part of the evidence presented in this Report. Seizure data, though, can be difficult to interpret in isolation and can lead to misleading conclusions because they are a mixed indicator, demonstrating both the presence of a problem and the initiative of the relevant authorities in addressing it. On their own, they cannot be used to demonstrate the magnitude and trend of the trafficking or shed much light on law enforcement capacity.

The value of seizure data comes not from what they say about the country making the seizure, but what they say about the whole supply chain. Whether transported by sea freight, air freight, personal courier, or post, it is often possible to determine where the contraband originated, transited, and was destined. Each seizure incident, therefore, has the potential to reflect on the entire trafficking chain, including the countries where the contraband went undetected.

In addition, a seizure allows a great deal of information to be harvested about the identity and methods of the traffickers when the confiscating authorities take the initiative to record these details. Aside from routes, the preferred methods of conveyance and concealment can be documented. The age, gender, and nationalities of those associated with the shipment can be recorded, as well as the laws used to charge them. Triangulated with other indicators such as price as well as qualitative research, they can provide a key data source for understanding the mechanics of wildlife crime.

The quality of seizure data recorded and reported by Member States, however, varies greatly in terms of completeness and coverage. Some seizure reports leave out key data, such as the source and destination of the shipment. The way products are classed and measured varies greatly between jurisdictions, and conversion ratios are needed to amalgamate the diverse products seized into comparable categories.

While seizures are an imperfect indicator, they have the potential to provide important insights when aggregated in sufficient volumes. They cannot be taken at face value or interpreted mechanically, but they represent concrete evidence of criminal activity that is otherwise obscured from view.

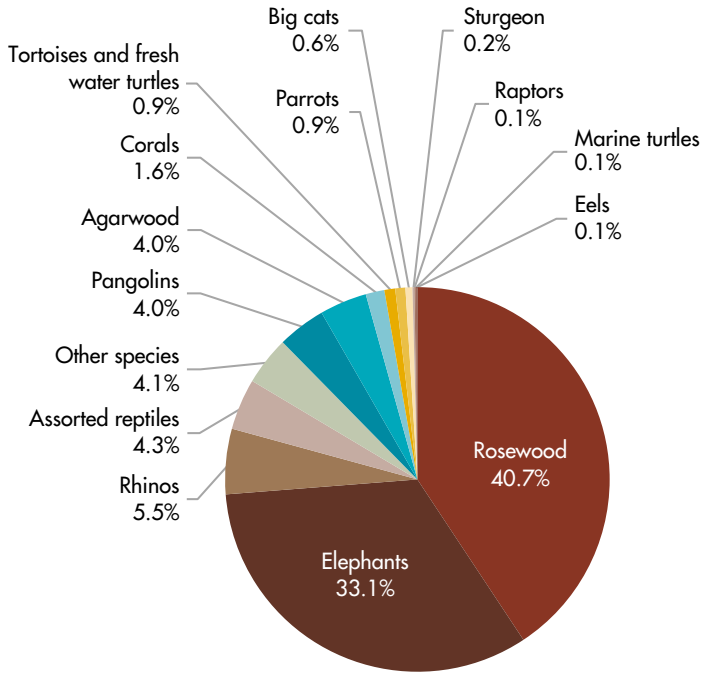
Role of transnational organized crime

Some wildlife trafficking flows primarily feed illicit retail markets, while others feed into the licit trade. Legal industries can be contaminated by the introduction of illegal supply, and this vulnerability must be assessed to understand the criminal market. Each case study presented in this report lends special insights into the way wildlife trafficking is perpetrated, suggesting the drivers and dynamics of the criminal trade.

Illicit wildlife markets, and the traffickers that feed them, can be highly specialised. With regard to destination markets, considerable attention has been given to open street markets where a wide range of protected species-products are often openly displayed. These markets are a reality, but they cannot account for the volumes of wildlife illegally harvested each year. Based on the locations of the largest seizures, border town bazars and back alleyways do not appear to be the venue where tons of fish, timber, and other wildlife products change hands. These volume commodities are usually marketed to specialists.

With regard to trafficking, there have also been seizures that suggest some groups are involved in smuggling multiple species. In just the last few years, detection of large quantities of ivory and pangolin scales in the same shipment indicate a clear confluence of these markets. But these are the exception rather than the rule, and, based on available information in World WISE, most shipments are of a single species. It is possible for the same trafficking group to move multiple commodities in separate shipments, of course, but the relative novelty of mixed shipments suggests that, as with dealers in destination markets, traffickers appear to specialise, trading in particular commodities where they know their buyers well.

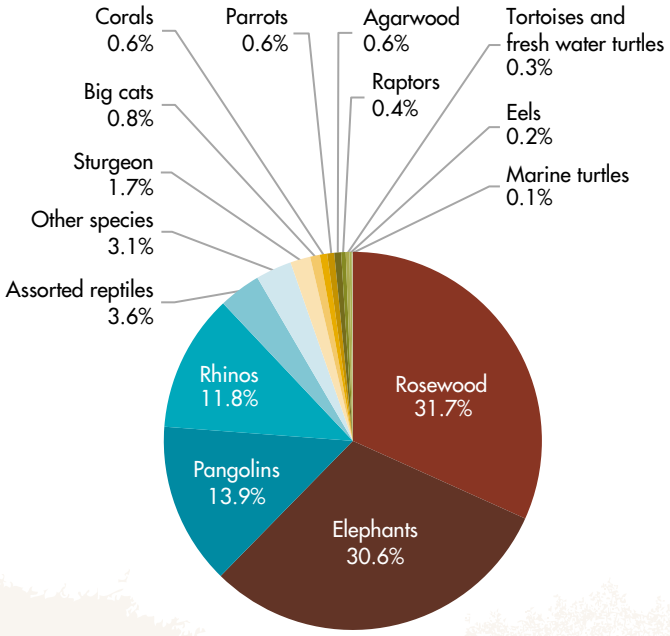
Fig. 3 Share of type of wildlife among total seizures (aggregated on the basis of standard value*), 2009-2013



Source: UNODC World WISE Database

* The distribution of seizures was calculated using a common metric based on the value of seizures. Over one million declared import values were statistically assessed and each seizure assigned a monetary value based on this dataset. See the methodological annex of the report for more details.

Fig. 4 Share of type of wildlife among total seizures (aggregated on the basis of standard value*), 2014-2018



Source: UNODC World WISE Database

* The distribution of seizures was calculated using a common metric based on the value of seizures. Over one million declared import values were statistically assessed and each seizure assigned a monetary value based on this dataset. See the methodological annex of the report for more details.

Information on the linkages between licit and illicit trade is important for targeting interventions to address the vulnerabilities of the licit trade and to strengthen the global regulatory system. In some case studies reviewed, it appears that the legal and illegal markets remain fairly distinct.

In other cases, the markets are entirely illegal. For example, rhino horns are product without a legal international market – zero trade is permitted for commercial purposes and there is no domestic market in range states. Similarly, there is no legal international market for pangolin products since all species were put on CITES Appendix I in 2017, yet growing volumes are seized each year.

In other cases, such as rosewood and European eels, a large share of the illegally acquired wildlife is ultimately processed and sold in a legal market. By introducing illegal products into licit markets, traffickers have access to a much broader pool of potential buyers. The commodities have access to legal demand, because the buyers may be unaware of the illegal origin of the product. People buying rosewood furniture or eels may have no way to ensure the origin of this product was legal. In these cases, supply-chain security is of the essence in protecting vulnerable species.

Organized crime groups are flexible and they can easily adapt to new restrictions, regulations and enforcement measures that may reduce opportunities to maximize profits. There may be many factors that make wildlife markets vulnerable to criminal infiltration. Policies, capacities and regulatory frameworks differ between countries, prompting criminals to turn to places where they can operate efficiently with low risk of punishment.

Illicit wildlife markets are like other illicit markets. With strong regulations and high demand, prices for the products go up, which can increase the profits of criminals. When efforts to curb the illicit trade do not impact both supply and demand, different types of replacement effects can be seen. Strong regulations in one place combined with high levels of demand can shift the criminal operations to less-regulated places or to the use of substitute species.

From one country to another: geographic displacement

Combating wildlife and forest crime has not usually been seen as a priority when addressing organized crime. Legislation may be weak and the level of detecting and addressing wildlife crime may be very low because of limited law enforcement capacity. Criminals tend to exploit legislative and enforcement gaps in countries that are less capable of addressing them, with the result that wildlife crime is displaced to these countries. This is the case, for example, with pangolin scale traders who chose to store their stock in the Democratic Republic of Congo as opposed to other source countries due to a perception of lesser capacity for interdiction.

Box 2: Valuation of wildlife seizures

To prioritise the use of limited resources, some quantification of the threats posed by the various wildlife trafficking flows is necessary. Looking at the number of times a particular species or region is implicated can give some general insights, but aggregating seizures is challenging because not all seizures are equal. Some comprise multiple container loads of illegal wildlife, while others involve a single item in the hand baggage of a traveller. Plumbing the depths of these data requires an additional element, something that takes into account the scale of the seizure. Once the relative significance of each seizure is weighed, a range of comparisons can be made. For example, the most significant species in trade, from a criminal markets perspective, can be identified. Together, just a few types of wildlife can account for just under 90% of the total.

Comparing and aggregating wildlife seizures is complicated, however, because of the variety of products involved. For example, the seizure of a box of 10,000 dried seahorses is very different in every respect from the seizure of a shipping container of illegally harvested rosewood logs, or a suitcase with three rhino horns. They cannot be treated as equivalent by simply counting the seizure incidents. The number of specimens cannot be counted: the wildlife is often processed before shipment, so the number of animals or plants involved is often unclear, and it would be unreasonable to equate a seahorse with a rhinoceros. They also cannot be compared on the basis of weight, since the crude mass of the wildlife in no way captures its significance.

The importance ascribed to a wildlife seizure depends on the purpose of the analysis. Organized crime is crime committed for material gain, and the extent of this gain is of great relevance for traffickers. Thus, to capture the criminal significance of a wildlife seizure, it makes sense to assign a monetary value to it. To provide this valuation, over one million declared import values were statistically assessed and each seizure assigned a monetary value based on this dataset. The valuation process is fully explained in the on-line methodological annex to this report. These values have been used not as a proxy for the true black-market price, but to act as a yardstick, giving a sense of the relative value of a seahorse to a rhino horn to a rosewood log.

From one species to another: wildlife product replacement

Criminals can shift from protected species to alternative species that have a similar value in destination markets. This sort of species replacement is very common in wood markets, where even experts can struggle to distinguish between timber of related species. The dominant rosewood species has changed many times over the years, shifting from Asian to African species. Similarly, African pangolin species were targeted after regulations tightened and populations were overexploited in Asia. Leopard, jaguar and lion bones have also emerged as substitutes in the tiger bone trade. At times, these substitutions are explicit, but often the buyers are not aware than a new species has been introduced.

From physical to online trade

Like many markets, trade in wildlife and wildlife products is moving online. For example, the illicit pet reptile trade increasingly involves the use of social media platforms. Criminals can be quick in switching online platforms whenever enforcement action is taken. This trade is particularly difficult to address due to its hidden nature, inconsistent regulatory frameworks, and limited specialised law enforcement capacities.

From wild to captive: captive breeding

When no viable wild population exists, captive breeding has been seen as an effective solution for the preservation of species threatened with extinction, but captive breeding can be exploited by organized crime groups. Several countries allow captive breeding for commercial purposes with the responsibility to ensure that these businesses operate in line with national regulations. There is evidence that criminals have used some licensed breeding facilities to illegally supply the illegal trade in exotic pets, luxury products and ingredients for traditional medicine. For example, detection of illegal tiger products in countries with little or no remaining wild tiger populations but large captive populations strongly suggests the illegal trade involves these tiger facilities.

Case study markets

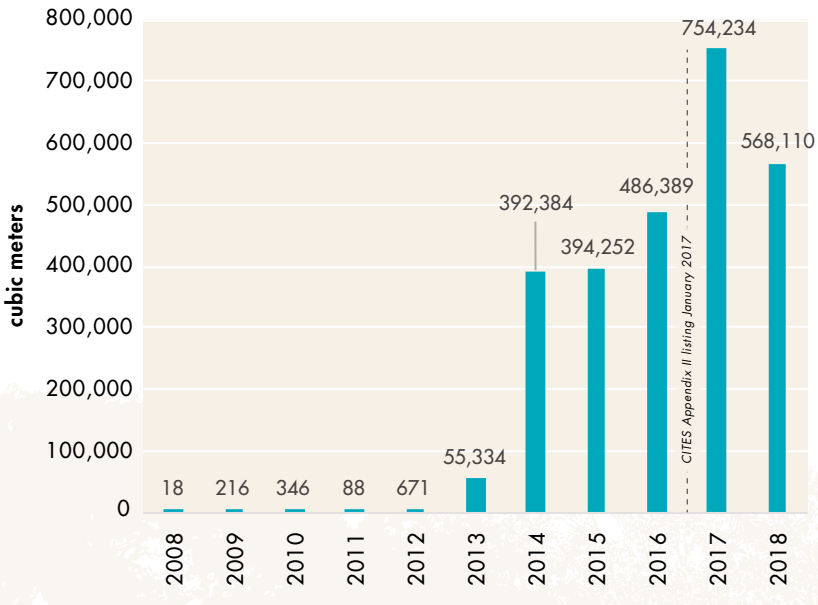
If the 2016 Report represented UNODC's first global assessment of the state of wildlife crime, this edition represents a first assessment of trends. In several instances, these trends have been dramatic. Several markets surveyed in the first report are also reviewed in this Report, namely markets for illicit rosewood, ivory, rhino horn, and pangolin scales. In addition, this report includes discussion on a few new markets, including those for live reptiles, big cats, and European eel. Some previously covered markets, such as reptile skins, live parrots and agarwood, are not continued in this report, due to a lack of available new data.

Rosewood

When traded internationally, timber is a commodity sold and used in bulk, and the seizure data are dominated by very large containerized shipments. Unlike illicit drugs, timber is not sold in acknowledged illegal markets, but rather fed into legal industries where its illegal origin is obscured. In fact, as the first Report highlighted, timber illegally harvested in one country may be legal to import into another. Countries are not bound to enforce the forestry laws of other countries. For this reason, both the legal trade data and the seizure data need to be considered in assessing the illicit flow.

Based on legal trade and seizure data, the largest flow of illicitly harvested rosewood in the past four years is coming out of Africa. The rosewood species featured in the last Report, *Pterocarpus erinaceus* (known in Nigeria as "kosso"), was listed on CITES Appendix II effective at the start of 2017. Remarkably, after this listing, more rosewood was exported from Africa than ever before, but this time with CITES documentation. Nigeria alone exported some 750,000 cubic meters of rosewood in 2017, which is equivalent to about four million trees, or over 30,000 shipping containers, an average of almost 100 container

Fig. 5 Volume of kosso logs (cubic meters) exported from Nigeria and imported by Asian countries, 2008-2018 (trade suspended October 2018)



Source: World Trade Atlas, UN Comtrade

loads exported per day. This continued apace in 2018. Because Nigeria was unable to produce a scientific non-detriment finding, a recommendation to suspend trade from the country was issued by CITES in October 2018.

With the imposition of controls on *Pterocarpus erinaceus,* a number of alternative African species suitable as rosewood substitutes have been exploited. Some of these substitutes were listed by CITES in 2019. *Pterocarpus erinaceus* itself has been exploited as an alternative to depleted Asian rosewoods. Even as CITES listed the entire *Dalbergia* genus in 2019, alternative genera were being targeted. Timber traders appear to be continually searching for substitute species to exploit internationally, working both within and outside the law.

Ivory and rhino horn

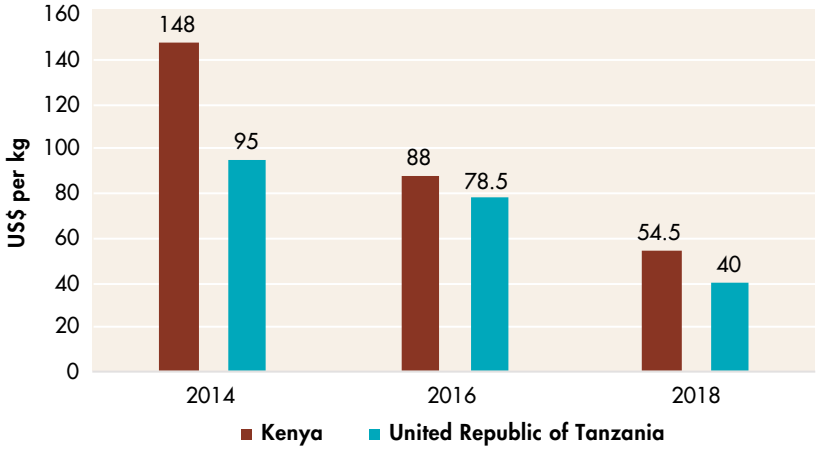
Perhaps the most revolutionary policy change in the past four years occurred in the trafficking of ivory, as several of the largest legal domestic markets were sharply restricted. Around the same time, several indicators suggested the illicit market went into sharp decline. The association of these two trends requires further investigation, but it is possible that the loss of the legal market undermined investor confidence, flooding the market with more ivory than required by retail demand.

Data on poaching and trafficking indicate that the ivory supply saw a resurgence around 2007 and grew steadily until around 2011, declining until 2016, and stabilizing at much lower levels in the following two years. Prices in both East Africa and Asia appeared to have risen from 2007, peaked around 2014, and to have declined dramatically in the following years. Similarly, rhino horn poaching appears to have risen from 2007, peaked in 2015, and declined every year since that time, with prices also declining during this period. Prices currently paid for rhino horn in Asian markets are a fraction of those cited in the popular press. It had been suggested that raw horn was worth US$65,000 or even US$100,000 per kilogram around 2014-2016, while field monitoring suggests the 2019 price was closer to US$16,000.

The simultaneous decline in poaching and prices suggests these illicit markets are contracting. It is possible that stockpiles are being tapped, reducing the need for poaching, but the associated decline in price indicates current supplies exceed demand. Some very large seizures of both ivory and rhino horn were made in 2019, which is likely to be a record year once all the data are in. Unless indicators emerge of renewed poaching, the source of this ivory was likely stockpiles, exported before prices decline further still.

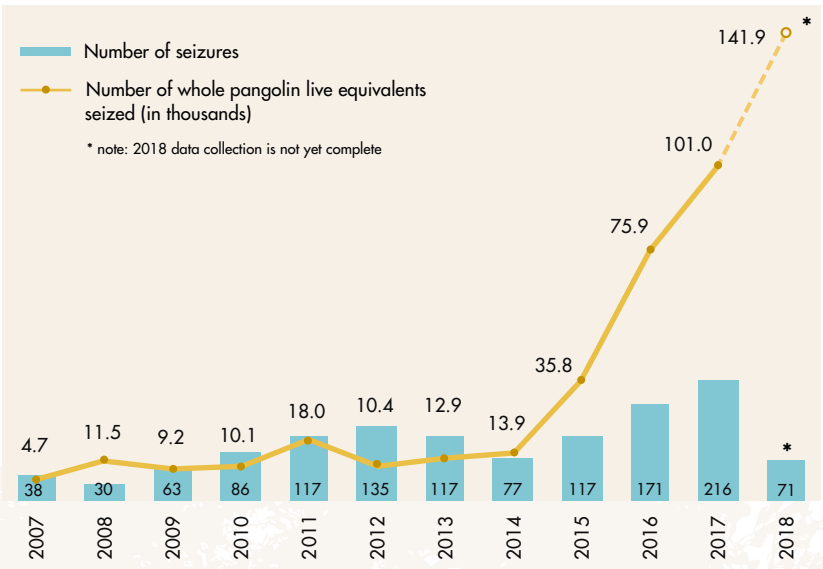
Seizure data also show a dramatic reorientation in the routing of ivory. While East Africa (particularly

Fig. 6 Ivory prices paid to poachers in Kenya and Tanzania, 2014-2018



Source: UNODC fieldwork

Fig. 7 Number of whole pangolin equivalents seized and number of seizures annually, 2007-2018*



Source: UNODC World WISE Database

* The specimen types included for this analysis are live, bodies, scales, meat, and trophies.

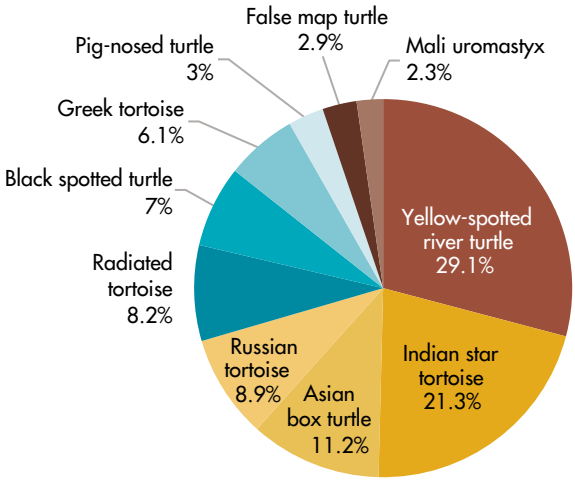
Mombasa, Kenya) was the primary source of illicit shipments in the past, Nigeria has become a dominant collection and transit point over the last four years. Similarly, while China dominated in the past, Viet Nam has emerged as the primary destination of these shipments. In addition, large mixed shipments of ivory and pangolin scales have risen in prominence, suggesting experienced ivory traffickers are using their expertise to move a rising illicit commodity

Pangolins

Between 2014 and 2018, seizures of pangolin scales increased tenfold. The reasons for this increase are unclear. All species of pangolins were elevated to CITES Appendix I in 2016, but there was very little legal trade before this time. While the main flow has always been illegal, greater awareness may have produced a higher rate of interdiction as a growing number of customs inspectors learn to recognise pangolin scales. Still, the sharp and consistent increase in seizures of scales year after year, as well as the growth in the size of the largest seizures, strongly suggest an increase in the illicit flow. Attempts to farm pangolins for commercial purposes have failed, and the loss of millions of wild pangolins to illicit markets cannot be sustained. Individual seizures made in recent years have been comprised of the scales of tens of thousands of pangolins, indicative of highly organized criminal operations.

There has also been a shift in the nature of pangolin seizures over time, away from live and meat seizures (mainly of Asian species) and towards African pangolin scale seizures. Significant meat seizures continue to be made in Asia, but most seizures in recent years were of scales exported from Africa (especially Nigeria and the Democratic Republic of the Congo) to Asia (especially Viet Nam). Looking at a broader range of time, China has been the primary destination of pangolin shipments, so it appears that, as with ivory, Viet Nam has become a conduit for this larger market.

Fig. 8 Share of top ten CITES-listed live reptiles seized, 2007-2017*



Source: UNODC World WISE Database**

* Includes bodies.
**The top 10 live reptile species seized represent 33% of all reptiles seized when looking only at bodies and live specimens.

Reptile pets

Reptile species are primarily traded for décor or fashion, for food, tonics, or medicine and for the pet trade and breeding. As the fashion industry has increased its support for conservation and sustainable use, live reptile seizures meant for the pet trade are becoming far more common than seizures of reptile skins. This is especially true for tortoises and freshwater turtles, which constitute nine out of the top 10 CITES-listed wild-sourced live reptile species seized in the last ten years. These species are sourced from a range of regions including South Asia, Central Asia, Southeast Asia, East Africa and West Africa. East and Southeast Asia, followed by the United States and Europe, are their main destinations.

Tortoise and freshwater turtle are primarily trafficked in small batches via air transport, in person or via post, to limit death in transit. The advent of social media and YouTube and other video sharing sites has resulted in an abundance of "how to" videos to catch species, encouraging people living in the range area to collect reptiles opportunistically for secondary income. Middlemen and sellers then work through private Facebook groups and other social media platforms to reach customers, with limited risk of being caught and easy opportunities to switch between platforms to dodge targeted law enforcement efforts. Large reptile shows and outdoor markets act as rallying points for collectors and dealers to build relationships and execute pre-arranged purchases.

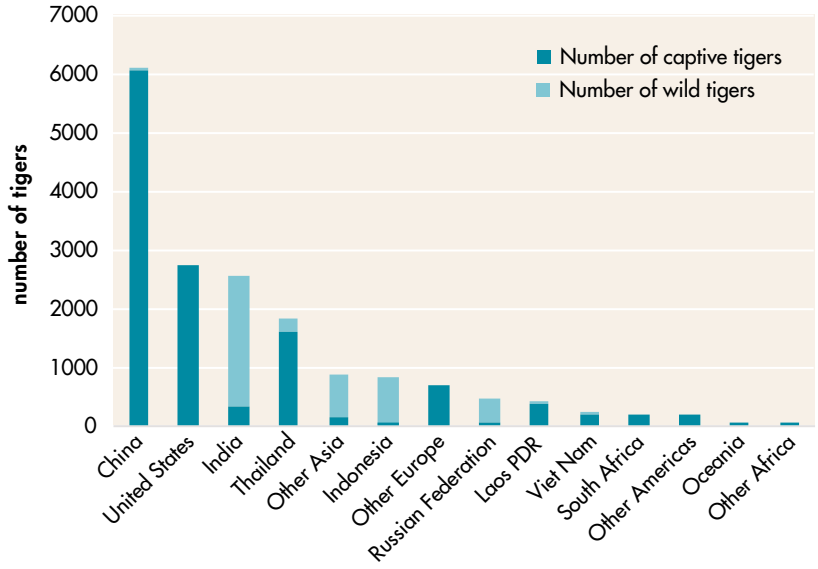
Big cats

All parts of the tiger are traded and used, for traditional medicine and for other purposes, but the bones are generally most sought after. Consumer demand has shifted in recent years with tiger product buyers purchasing these goods as a sign of wealth rather than for their health. The most popular bone-based products appear to be tiger wine and tiger glue/paste. A large part of the trade has shifted to online sales through social media and messaging apps.

While the number of seizures of tigers and their parts remains small, that number has risen from 2007 to 2018. Thailand and India are the main source countries for these seizures, although sourcing from Nepal, Bangladesh, and Bhutan is also ongoing. Given the large captive tiger population in Thailand, which has less than 200 wild specimens, most of these seizures likely involved farmed animals. In contrast, seizures from India, with the world's largest wild population, are likely from wild animals. Trafficking networks for tiger products involve Chinese, Vietnamese, Indian, and Indonesian traders who primarily sell the products to medicinal industries in China and manufacturers or consumers in Viet Nam and Thailand.

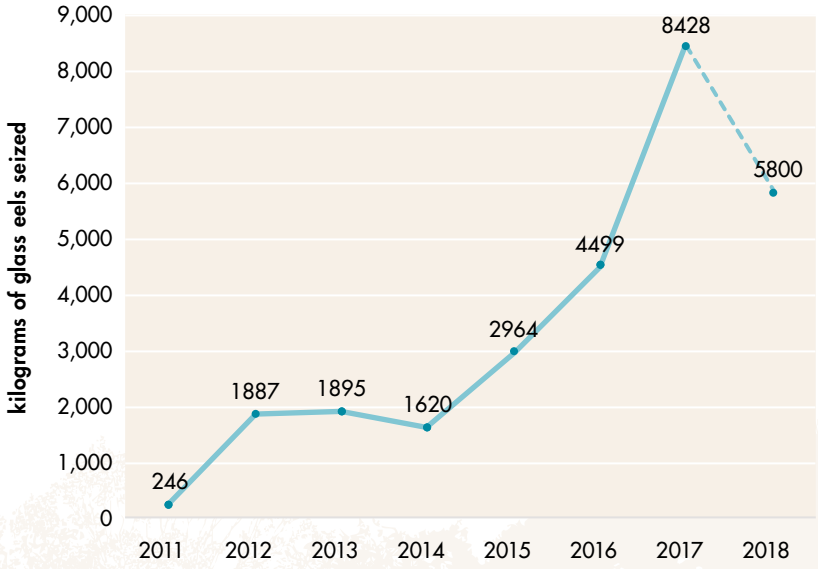
In addition to tiger products, products based on other big cat species have been seen in the illicit market, raising concern for those species. These include clouded leopard, snow leopard, jaguar, and lion parts, some passed off as tiger products. African lions appear to be the species of greatest concern, though, with current interest in the bone trade spurring a rise in the South African lion and tiger breeding industry.

Fig. 9 Estimated number of tigers (wild and captive) by selected country, 2016 or most recent data



Source: CITES

Fig. 10 Number of glass eels seized (in kilogram), 2011-2018*



Source: UNODC World WISE Database

* The specimen types included in this analysis are live and fingerlings from the family Anguillidae. Data from 2018 are preliminary.

European eel

Because eels have never been successfully bred in captivity, the production of eel meat is a multi-billion-dollar industry entirely reliant on wild-caught juveniles, known as "glass eels". Demand for eel meat is especially strong in Asia. As with other wild species consumed in growing Asian economies, local populations of eels have been overtaxed by growing demand, leading to a global search for alternate species. Eel meat is also consumed in Europe, but declines in European stocks, teamed with growing international demand, led to the prohibition of export of eel from the European Union in 2010.

Since this time, the European authorities have detected organized criminal operations trafficking European glass eels to Asian farms. Because live glass eels must be kept in controlled conditions, these operations typically purchase European glass eels at source and rapidly transport them by air courier or air freight to commercial growing ponds. Successful interdiction is likely to lead to the exploitation of eel populations in parts of the world where there is less capacity to respond effectively.

Box 3: The role of bribes in the illicit wildlife trade

A common theme in the illicit trade of ivory and rhino horn (and more generally with all illicit wildlife trade) is corruption in the form of bribes. Corruption has been found to be a critical enabler of the illicit wildlife trade, taking place at sourcing, transit and export stages, and involving public and private sector abuse of power and trust.[a] It can be ad hoc, involving smaller amounts of money and lower-level officials, or systemic, involving larger amounts of money, higher-level officers, and generally pre-planned.[b]

The case of the Shuidong connection[c], documented by the Environmental Investigation Agency, showed that bribes can make up 4 – 10 per cent of the final (wholesale) sales value of ivory in Asia. The overall bribes paid in that single case amounted to US$90,000-210,000. In 2012, along the Viet Nam-China border, there was an estimated US$18,000 to US$30,000 a day given out in bribes to border officials to allow ivory to cross borders illicitly.[d] Moreover, several member states reported to the Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG) cases of law enforcement officials involved in trafficking.

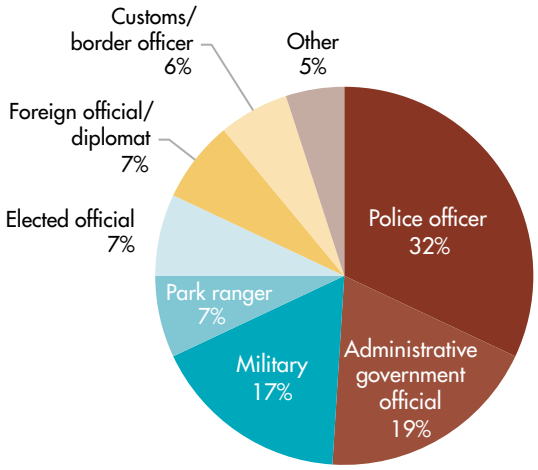
The Financial Intelligence Unit (FIU) of Namibia[e] documented a case in which 18 rhino horns weighing a total of 43 kilograms were found in the luggage of a passenger who arrived from Namibia in South Africa and was about to board a flight to Hong Kong, China. As a consequence, a Namibian police officer has been charged with defeating or obstructing the course of justice for failing or omitting to detect and stop the 18 rhino horns.

A court case, for example, documented that fraudulently acquired hunting permits were used to divert rhino horns to markets in the Lao People's Democratic Republic and Thailand.[f] ESAAMLG noted that the authorities issuing such hunting permits could be subjected to corruptive practices.[g]

Corruption can thus occur at any level of the supply chain and involve many different actors. In 2018, the Organisation for Economic Co-operation and Development (OECD, see note a) collected open source data from four selected countries (Kenya, Uganda, United Republic of Tanzania and Zambia) and identified the role of corrupt actors in reported cases, concluding that corruption may go far beyond lower-level police officers and park rangers. In the cases analysed, those involved in law enforcement operations (police, military, and customs) were the government officials most involved in corruptive practices. Officials responsible for administration were also involved but at a lower rate. Only a small portion of corrupted officials included park rangers (7 per cent).

An estimate of the overall volume of bribes paid is beyond the scope of this report and the data available does not permit it.

Fig. 11 Agency/Role of Corrupt Actors in available cases



Source: OECD[a] (based on the identifiable agency from open source data collection)

a Organisation for Economic Co-operation and Development (OECD), 'Strengthening Governance and Reducing Corruption Risks to Tackle Illegal Wildlife Trade: Lessons from East and Southern Africa', *Illicit Trade*, 2018.

b Ibid.

c Environmental Investigation Agency (EIA), *The Shuidong Connection: Exposing the global hub of the illegal ivory trade*, 2017. See: SHUIDONG CONNECTION BOX.

d Bennett, E. 'Legal ivory trade in a corrupt world and its impact in African elephant populations'. *Conservation Biology*, 29(1), 54–60, 2014.

e Republic of Namibia Financial Intelligence Centre, *Trends and typology report No 1 of 2017: Rhino and elephant poaching, illegal trade in related wildlife products and associated money laundering in Namibia*, 2017.

f UNODC, Sharing Electronic Resources and Laws on Crime (SHERLOC), Case Law Database, available at: sherloc.unodc.org. Case number ZAFx008.

g Eastern and Southern Africa Anti-Money Laundering Group (ESAAMLG), *A Special Typology Report on Poaching and illegal trade in wildlife and wildlife products and associated money laundering in the ESAAMLG region*, 2016.

Illicit financial flows

The oft-heard refrain "follow the money" has been raised with regard to wildlife crime, but there has been little systematic assessment of how much money is associated to illegal wildlife markets and how this money is distributed.

Countering illicit financial flows has been recognised in the Sustainable Development Goals under target 16.4.: "*[b]y 2030, significantly reduce illicit financial flows and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organised crime.*" The estimates presented in this report provide an indication of the potential flows arising from the illegal trade in rhino horn and ivory and highlight the importance of systematic collection of price and supply data to continuously monitor the situation and to provide insights on potential weaknesses that allow for disrupting illicit supply chains.

The annual illicit income generated from ivory and rhino horn trafficking between 2016 and 2018 was estimated at US$400 (310 – 570) million for ivory and US$230 (170 – 280) million for rhino horn trafficking. The largest shares of income are generated at the retail level, where rhino horn and ivory are processed and sold to end consumers. The emerging illicit financial flows (volume of cross-border transactions) could be – depending on how complex the supply chains are – almost twice as much, namely US$ 570 million for ivory and US$390 million for rhino horn. There is, however, a large range of possible scenarios.

Endnotes

1 Further details on World WISE can be found in Chapter 1. Introduction.

2 Certain parties have submitted illegal trade reports to the CITES Secretariat but refused to let their data be used for research purposes by UNODC.

3 The annual data collection on AITRs was still on-going when data processing for the present report had to be finalised. Therefore, data for 2018 should be used cautiously as they are not directly comparable with those of previous years.