(English only / seulement en anglais / unicamente en ingles)

The Legal and Illegal Trade in Big cats

A study in support of Decision 18.246

Prepared under contract from the CITES Secretariat by TRAFFIC.

Final report received March 2022

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Gratitude is extended to the large number of stakeholders that took the time to provide invaluable insights to advance our understanding of the trade in big cats.

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Executive Summary

Since 1975, tigers (other than the Siberian tiger sub-species), cheetahs, clouded leopards, jaguars, leopards, and snow leopards, have been listed in CITES Appendix I, and in 1977, all big cat species, other than those listed in Appendix I, were listed in Appendix II. Siberian tigers were listed in Appendix I in 1987. In 2007, CITES Decision 14.69 recommended prohibiting trade in parts and derivatives from captive-bred tigers. Big cat species are found in the wild in Africa, Asia, and North and Latin America, and are in decline, due in part to illegal trade, across their range. While the term "big cat" generally encompasses only those cats that roar (tigers, lions, leopards, and jaguars), the term has been colloquially expanded to include a variety of other cat species due to their importance across societies and collective need for protection.

The study "The Legal and Illegal Trade in African Lions" (SC70 Doc. 54.1) found links in the trade among a variety of big cats and raised questions as to the broader trade in big cat species. Therefore, at CoP 18 Decision 18.246 was adopted to *conduct further research and analysis on the legal and illegal trade in lions and other big cats to better understand trends, linkages between trade in different species, and the commodities in trade which contain, or claim to contain, such specimens*. As such, this report reviews the trade routes and commodities from the following big cats: cheetahs (*Acinonyx jubatis)*, clouded leopards (*Neofelis nebulosa*), jaguars (*Panthera onca*), leopards (*Panthera pardus*), lions (*Panthera leo)*, pumas (*Puma concolor*), snow leopards (*Panthera uncia*), and tigers (*Panthera tigris)*. This report draws on CITES trade data, both from the CITES Trade Database and the CITES Illegal Trade Reports, as well as on seizure data from TRAFFIC's WiTIS (Wildlife Trade Information System) database. This trade data is supplemented by literature, surveys, and interviews across multiple countries including main big cat product consumer countries.

Almost every country in a particular big cats' range becomes a source of illegal trade in that big cat. Human-wildlife conflict increases where habitat loss pushes human habitation closer to big cat habitat, and laws allowing for protection of livestock and property have allowed people to kill big cats while claiming human-wildlife conflict. Where in most cases the carcasses must be destroyed, they may be sold opportunistically on the market or to intermediaries where they are then sold on. In many cases, authorities meant to stop the trade are aware that an illegal shipment will be crossing their borders but have been bribed to turn a blind eye. Demand for tigers in Asia has led to big cats that have been captive-bred being sold commercially, even where prohibited by law or regulation; and 'canned' hunting of captive-bred big cats has led to laundering where species such as tigers are part of 'canned' hunts or 'canned' hunted lions and other big cats are passed off as tigers.

While few lions are poached from the wild in South Africa, the country is a major source of trade in many big cats, including lions, tigers, and leopards. Several lion captive breeding facilities are registered with CITES, tigers and other big cats are also captively bred and raised in facilities without registration in South Africa. An increase in demand for tiger bones, teeth, and claws especially in China and Viet Nam, and a resulting decrease in wild tiger populations tigers leading to more legal protections and stricter enforcement on wild species, has led to a growth of tiger captive breeding facilities across the world, and tigers and other species of big cats whose bones, teeth, and other parts and products look like tiger parts and products are trafficked to Asian markets. Lion parts from legal captive breeding facilities are often relabelled as tiger parts and sold to China and Viet Nam relabelled as tigers for sale on the market.

Nearly every part of a big cat's life is commodified, and almost every part of a big cat's body is used. Increasing disposable incomes has allowed for an escalation in the purchase of big cats across their range. This rises where social attitudes have placed a premium on wildlife ownership and consumption, including big cats. Commodities (bones, teeth, claws) of one big cat species often resemble those of another, and when they do, replacements are common when a species becomes overharvested. Demand for leopard skins, for example, can be met by any cat with a spotted coat, and teeth, claws, and bones from different species are often found mingled together. Demand for tiger products is a threat to nearly all big cats, and, in many countries, this demand is driving poaching and trafficking of a variety of big cat species. The outlier of this illegal trade is the cheetah, which is used heavily for the pet industry, and images on social media of cheetahs as part of a luxury lifestyle are increasing demand for cubs. Mislabelling, whether intentional or unwittingly, occurs with every type of big cat studied for this report and along each step of the trade chain, from source mislabeling (wild vs. captive-bred), to mislabelling to evade Customs, to mislabelling to mislead buyers.

Laws governing the big cat trade are numerous and laced with loopholes. This has led to various enforcement and regulatory complications among breeders, buyers and sellers, which facilitates laundering. However, where countries have enacted clear laws, which are fully enforced and citizens are aware, incidences of illegal trade in big cats have reduced.

Commodities

Nearly every part of a big cat is used for some purpose, and with each of the big cats, the body part or parts used varies by type, use, and region. In many parts of the world, with increasing disposable incomes comes an increase in the use of wildlife-based products, including those from big cats. This increases further where these products hold symbolism or are considered a sign of wealth, luxury, or status. In the big cat trade, skins for decoration, claws, and teeth as jewellery and amulets, and traditional medicine products are increasingly used by a broader segment of many societies due to an increase in disposable income.

According to the CITES Trade Database, 121 Parties reported at least one direct export, and 129 Parties a direct import, of big cats between 2010-2019 (Figure 2). Over this period, big cats were exported primarily as specimens for scientific purposes, in addition to trophies and other parts and derivatives (Figure 1).

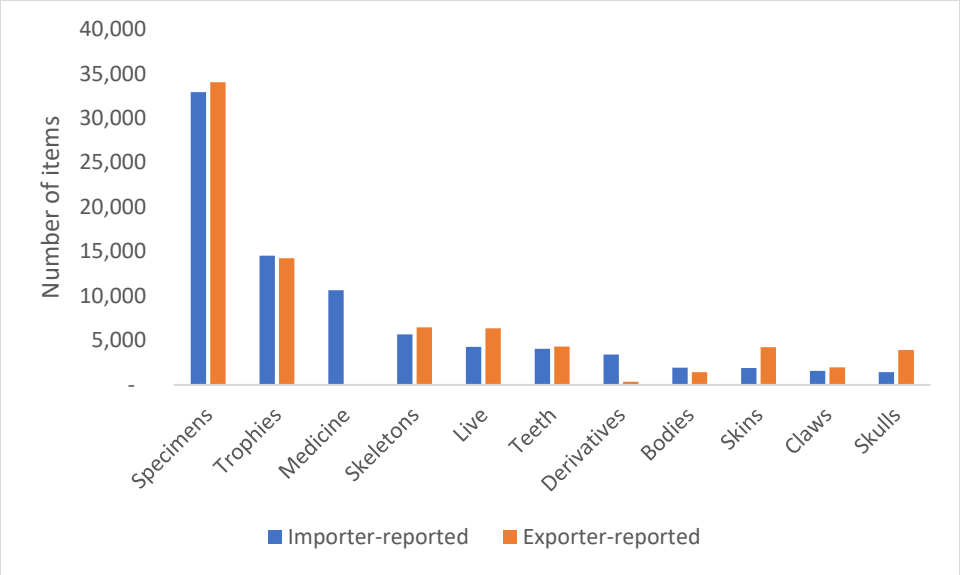

Figure 1: CITES direct trade in big cat items reported by number 2010-2019, top 98% of items shown reported by importers and top 94% according to exporter-reported data. All sources and purposes were included (*Source: CITES Trade Database).*

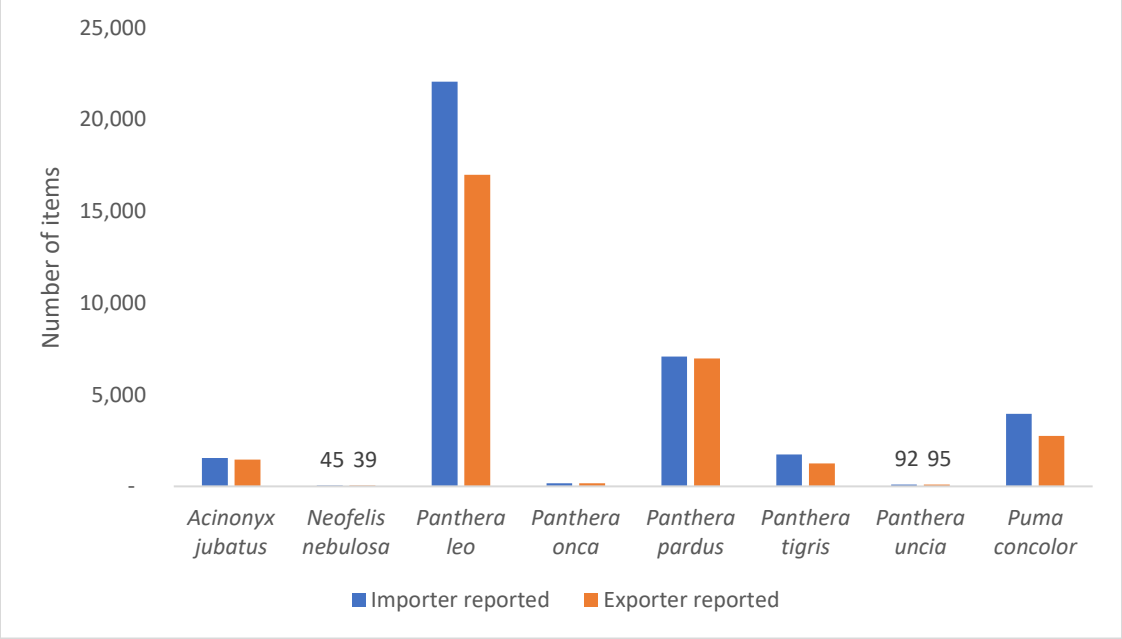

Figure 2: Total direct CITES trade in whole organism equivalent commodities of big cats (bodies, live, skeletons, skins, skulls, and trophies) in the period 2010-2019 (*Source: CITES Trade Database*).

The CITES Illegal Trade Records (ITR) currently contain information on 873 seizures in which big cat species' parts and products were seized between 2016 and 2021, and WiTIS holds an additional 3,465 seizures conducted between 2010 and 2021.

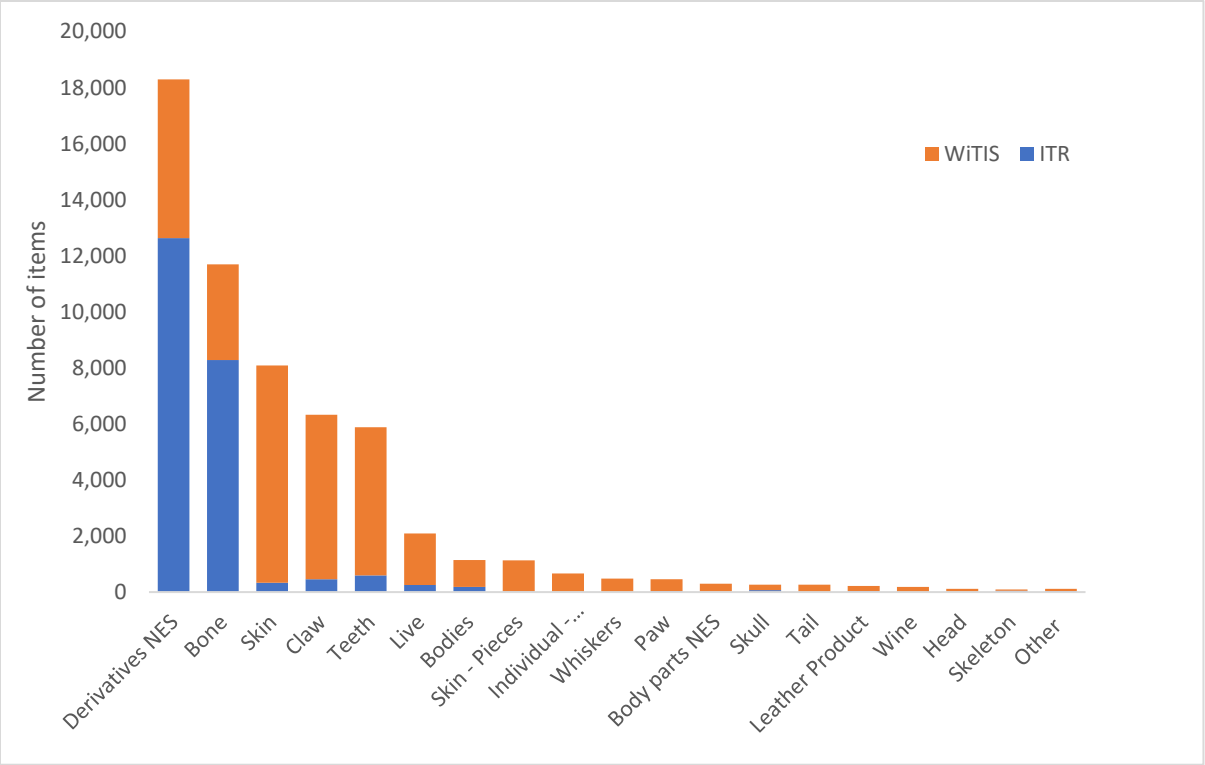

Figure 3: Big cat items seized as recorded in ITR 2016-2021 and WiTIS 2010-2021 where reported by number with top seized items shown (*Source: WiTIS and CITES Illegal Trade Reports*)

According to CITES ITR, a total of 20 different items were reported to have been seized for all big cat species with a further three items reported to have been seized in the WiTIS database (Figures 3 and 4). The item seized in the most significant quantities where reported by number within ITR was “Derivatives not otherwise specified” (NES) (12,637), which includes traditional medicine (TM) products such as balms, creams, patches/plasters, cosmetic products, pills, and tabs containing extracts from big cats. This was followed by bone (8,280) with much smaller volumes of other items (Figure 1). Skins (7,762) were most commonly reported in seizure records reported by number within WiTIS, followed by claws (5,868) and teeth (5,283). Overall, 76% of all derivatives seized, reported as a number of individuals, were from the tiger (*Panthera tigris*), and 24% were from leopards (*Panthera pardus*). It is unclear whether the derivatives were tested to verify the species in each seizure prior to reporting or if derivatives were mislabelled as the species most targeted and sought after for trade.

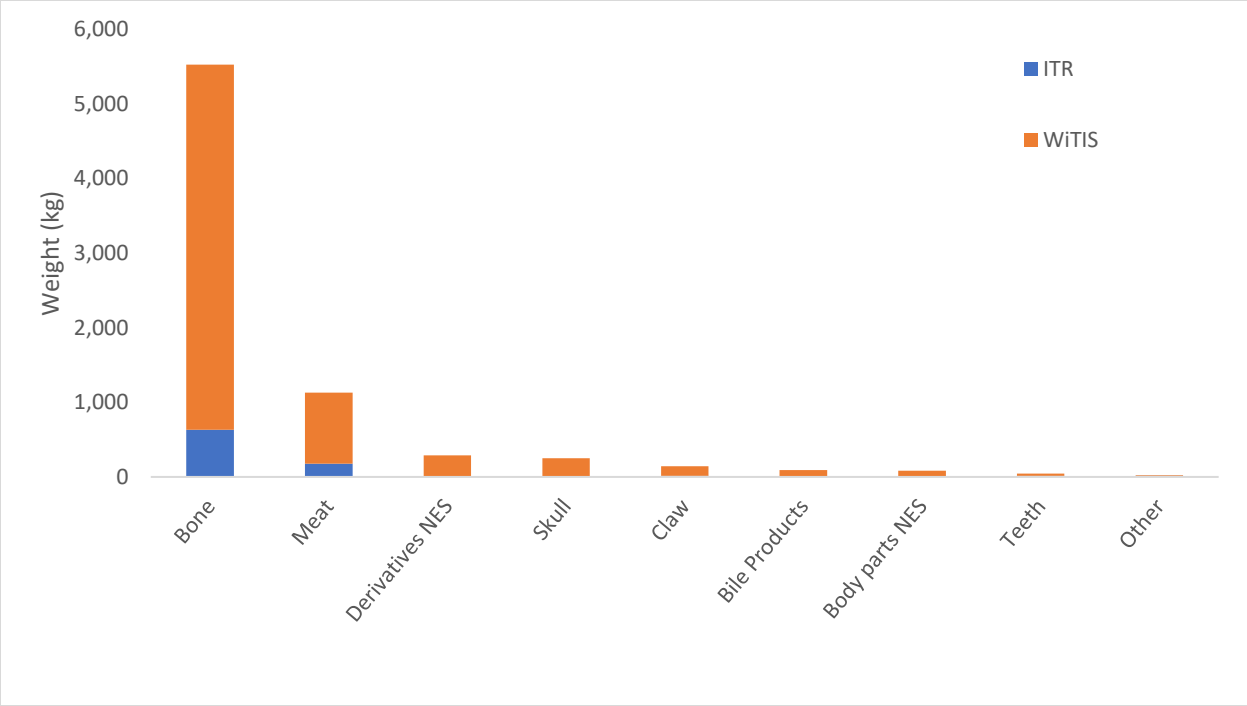

Figure 4: Big cat items seized as recorded as weight (kg) in ITR 2016-2021 and WiTIS 2010-2021 2010-2021 with top seized items shown (*Source: WiTIS and CITES Illegal Trade Reports*)

For items reported by weight within ITR and WiTIS, the most frequently seized item was bone (ITR 630kg, WiTIS 4,899kg), followed by meat (ITR 177kg, WiTIS 955kg) (Figure 2). The species seized in the largest quantities for reported seizures of bones from both ITR and WiTIS lions (ITR 625kgm WiTIS 3278kg), followed by tigers (1.5kg ITR, 1410kg WiTIS). Seventy three percent of all lion bones seized was the result of one seizure in Viet Nam in July 2021, in which 138 kg of rhino horn and 3,100 kg of suspected lion bones were seized from a container at Tien Sa Port, Da Nang originating from South Africa.

Cheetah

Cheetahs are used mainly in the Gulf States as pets, or increasingly, in parts of Africa where their skin is used as a replacement for leopards for tribal and traditional ceremonial use.

The rise of social media may be increasing the cheetah pet trade, as platforms are being used to show a luxury lifestyle that includes cheetah, and other big cats, as pets. Cheetahs are also used for hunting trophies and skins to display status and teeth as amulets.

In parts of Africa, there is an increase in the use of cheetah skins for their spotted coats in the place of leopard skins, where the use of leopard skins in traditional ceremonies has led to a reduction of leopards. Cheetah skins, teeth, and claws are also increasingly found in muti (traditional African medicine) markets.

Tiger

Uses of tigers are split by country, and tigers are used primarily in East, South, and Southeast Asia, Europe, North America, and Latin America. Demand for tiger parts and products in South and Southeast Asia is driving trade in tigers and other big cats whose parts (teeth, claws, bones, etc.) and products resemble those of tigers.

In Asia, most parts of the tiger are sought after, but the main products include bone used for bone glue, paste, or wine used in traditional medicine as a curative for joint problems. Bones, teeth, and claws are also carved for handicrafts, jewellery, and amulets and are a symbol of luck and status. Tiger penis and meat are eaten as exotic foods and to increase sexual performance, and tiger whiskers are used as toothpicks, to cure toothaches, or as amulets. Tiger skins are displayed or worn as clothes to exhibit wealth and status, specimens have a variety of uses, and live tigers are kept in a range of facilities, such as basements, backyard farms, personal/private zoos, and circuses.

In South America, Europe, the United States, and parts of Africa, live tigers are kept as pets, in backyard zoos or small circuses, where they are often captively bred. Cubs are used as tourist attractions and for photo opportunities. Medicines and pills reported to contain tigers are also found on the market in Europe.

Lion

Lions are used mostly in Africa for skins, in East and Southeast Asia for parts and in traditional medicine, with trophy trade mainly to Europe and North America. Chinese and Vietnamese demand for tiger products is driving legal trade or lion poaching trade in parts of Africa, where lions are then exported to be relabelled as tiger products.

While used in traditional Asian medicines, lion products have not previously or currently been written into traditional Asian pharmacopoeias. Primarily in China and Viet Nam, lion bones used in traditional medicine are relabelled as tiger bone glue, paste, or wine. Claws and teeth are used as jewellery or amulets, often relabelled as tiger claws and teeth. Hunting trophies and skin may be used as luxury products to display wealth and status across the globe.

In South Africa, lions are held in ‘canned’ hunting facilities where they are sold to trophy hunters for the chance to hunt a lion. Cubs born in captive breeding facilities are often used for tourist photo opportunities. There is also an increase in lion skins, bones, and teeth found in muti markets, where they had not been seen ten years previously. These may be from ‘canned’ hunting facilities or the wild. In parts of Africa, lions are associated with kings, and their skin, teeth, and claws are worn to impart strength and status.

In Europe and North and South America, live lions are sometimes used as pets. Sometimes cubs are traded from East Africa to the Gulf States to be used as pets.

Leopard

Leopard uses also vary by region and are primarily used in Africa, Asia, Europe, and North America.

In Africa, leopard skins are used for luxury clothes or traditional ceremonial dress, including capes, by indigenous and local communities. Leopard teeth and claws are found as handcrafts and amulets. Leopard skulls and skins are found in muti markets with cultural and medicinal value in some countries. Trophies from leopards are also used as displays in homes and public spaces.

In Asia, leopard bone and other body parts are used in traditional medicine, such as bone paste. Leopards are either used and labelled as leopard products in medicines or as alternatives for tiger bone and other products. The term “leopard” in China is a catch-all term for big cats and most often also refers to clouded leopards and snow leopards, in addition to common leopards. Leopard skins are also used as decorations or luxury clothes.

Occasionally leopard cubs are reported to be used as pets in the Gulf States.

Snow leopard and clouded leopard

Snow leopards and clouded leopards are most often used in parts of Asia and Europe for their skins, as luxury decorative objects, or clothing. Bones, teeth, and claws are often used in place of or, or mixed with those of common leopards for traditional medicine, jewellery, and amulets, and more often the bone products may be relabelled as tigers.

Jaguar

Jaguars are used in Latin America for skins as decorations to show status and wealth, their teeth and claws are used for handicrafts, jewellery, and as amulets. Among Chinese nationals in Latin America, jaguars, or “South American tigers”, are used in place of tiger products, including bones for traditional medicine glue, paste, or wine, and teeth and claws are used as handicrafts or amulets. Jaguar specimens are occasionally sent to family members in China, where they are used for handicrafts or amulets.

Puma

Less information is available about the uses of pumas, although teeth are both the most seized puma product according to CITES Illegal Trade Report records, and are highly traded according to the CITES Trade Database. Additionally, bodies, hunting trophies, skin, and claws are found in trade, with the USA reporting both the highest number of imports, and Canada reporting the highest exports in the CITES Trade Database. Additionally the USA reported the highest number of seizures, according to CITES Illegal Trade Reports.

Illegal to Legal big cat laundering

Mislabeling

The big cat trade is rife with examples of mislabelling, and it appears that nearly every big cat part or product that can be substituted for another is done so, whether intentionally or unwittingly, making identification of actual numbers of each big cat species in trade difficult. The biggest examples of this are mislabelling of lions, leopards (including snow and clouded), and jaguars as “tiger” to meet demand for tiger parts and products in China and Viet Nam, and substituting leopards in parts of Africa with cheetahs, servals, and other spotted cats to meet demand for leopard parts in the face of dwindling populations. This mislabelling is driven by increasing demand for certain big cat parts and products over others and a resulting decrease in populations and availability of preferred big cats in the wild and boost in price of those in captivity, often resulting in legal protections afforded to some big cats and not others. Species are also mislabelled due to a commonly accepted vernacular in some countries, such as in China, where the terms “tiger” and “leopard” are intended to include all big cats; in Viet Nam, where the terms “tiger” and “big cat” similarly are used interchangeably and both are often

accepted to mean “tiger”; and in Lao PDR where a variety of big cats is described in relation to tiger, such as “little tiger” or “like a tiger”, and examples of such mislabelling even occur in official reports. It is unclear where along the trade chain these mislabellings occur, and whether they affect seizure and legal trade information. For example, whether a country that uses “tiger” generic term for big cats may be overestimating the number of tigers in a seizure due to an error in labelling.

Mislabelling also occurs in source codes, as for specimens of CITES-listed species, the text of the Convention provides an exemption to the normal permit requirements for animals where the specimens concerned are bred in captivity in registered captive breeding facilities, the definition of which appears in Resolutions Conf. 10.16 (Rev. CoP15) (Harare, 1997). In general, Appendix I species that are bred in captivity can be treated as Appendix II species for CITES permitting purposes, as long as the Management Authority of the State of export is satisfied that a species was bred in captivity. However, with big cat products, it is difficult to determine whether a specimen is bred in captivity or sourced from the wild, and with a consumer preference for certain big cats over others and wild sourced over captive bred, the source of a specimen is often mislabelled causing an otherwise “illegal” wild caught big cat to be sold under the guise of a “legal” captive bred big cat. An exception is tigers, which should not be bred for their parts and derivatives (Decision 14.69; CITES, 2007).

Examples of mislabelling include:

- In South Africa, products such as skins and fats from a variety of big cat species are mislabelled as lion, and vice versa, and DNA results from a study that looked at products labelled as three different big cat species showed that the products were actually from eight different cats.
- In China and Viet Nam both tiger bone and lion bone glue are consumed in traditional medicine, although in many cases lion bone, often imported from captive sources with CITES permits, is substituted for tiger bone and mislabelled as such for advertisement and sale, or as a fraudulent product which the consumer believes to be real tiger bone glue.
- Similarly, there are suggestions that “bone strengthening wine” in a tiger-shaped bottle or products labelled as containing “precious animal bones”, which are assumed by users to contain tiger bone, in reality may contain lion, macaque, deer, bear, turtle shell, and a variety of other wildlife and domestic animal parts.
- In parts of Africa where leopards are valued for their spotted pelts for use in traditional ceremonies, cheetah, servals, or other spotted cat pelts may be relabelled as leopard for sale in markets. Spotted cats are also mislabelled as one another for sale in traditional medicine and curios.

Impacts of COVID-19

COVID-19 appears to have had a variety of impacts on trade and wildlife trade overall, although its specific impacts on big cat trade are still coming to light and would require continued research to understand whether there are long term impacts.

A lack of tourism has caused physical locations to close, including those that sell illegal wildlife products, as is the case in Luang Prabang and Vientiane, Lao PDR, and in many parts of Viet Nam. It is unclear how many will reopen upon resumption of tourism but indications are, from ‘For Sale’ signs, that many will not.

Movement restrictions on humans appears to have also had an effect on the movement of wildlife products across borders, where land border closures and travel restrictions have reduced the ability to move wildlife across borders. However continued container and freight transport allowed for movement of larger shipments of illegal wildlife throughout the pandemic. Traffickers have found a way to transport wildlife despite border closures. For example, an investigation into a seizure of seven young tiger cubs that occurred in Viet Nam in August 2021 provided evidence that the cubs originated in Lao PDR and were still able to be shipped across the border despite border closures in both countries.

COVID-19 moved commerce increasingly online, and many people with restricted levels of movement and reduced incomes have begun to supplement their income through online trade on platforms such as Facebook, Instagram, and elsewhere. Wildlife including big cat products also appears to similarly have moved online and an increase in wildlife advertisements via Facebook has been noted. On the flip side, posts on wildlife groups have noted a decline in disposable income due to COVID-19 and a resulting inability to buy wildlife products.

Big cats have continued to be killed during the pandemic and wildlife owners or traffickers appear to be stockpiling their products expecting things to get back to normal so they can be sold elsewhere. This may be the case in South Africa, where loss of tourism and trophy hunting incomes at 'canned' hunting facilities has led to the starvation and euthanasia of dozens or more lions. A large seizure in Viet Nam of 3,100 kg of suspected lion bones in late 2021 may be the result of 'canned' hunting stockpiles.

In China, in response to the pandemic, rumours began of COVID-19 cures and preventatives containing illegal wildlife products and products were advertised on WeChat and elsewhere. The medicines were advertised as containing tiger products in addition to bear bile, and a Chinese medicine called *Angong Niuhuang Wan,* which contains rhino horn and musk glands.

Introduction

Tigers (other than the Siberian tiger subspecies), cheetahs, clouded leopards, jaguars, leopards, and snow leopards have been listed under CITES Appendix I since 1975, meaning international trade in specimens from these species (any live or dead animal, or any readily recognizable part or derivative thereof), is prohibited except when the purpose of the trade is not commercial (e.g. scientific research, hunting trophies) and is authorised by import, export, and re-export permits issued by the Scientific and Management Authorities of the corresponding importing, exporting and re-exporting countries (CITES, 2021). An exception to this is where big cats are bred in registered captive breeding facilities, in which case, Appendix I species that are bred in captivity can be treated as Appendix II species for CITES permitting purposes (Res. Conf. 10.16 (Rev. CoP15) (Harare, 1997)).

In 1977, all big cat species, other than those listed in Appendix I, were listed in Appendix II, meaning that an export permit may be issued by the Management Authority in the country of export, or re-export, if the specimen was legally obtained and the export will not be detrimental to the survival of the species. Pumas were listed in App. II in 1977, and in 2019 the populations in Costa Rica and Panama were listed in App. I. (CITES, 2019).

In 1987, at the 6th Meeting of the Conference of the Parties to CITES (CoP6, Ottawa, July 1987) Siberian tigers (*Panthera tigris altaica*) were transferred to Appendix I after a 10-year Review of Significant Trade of App. II species, and due to concerns raised by over-exploitation of Siberian tigers across their range states and rising demand for tiger parts and products overall leading to the potential for extirpation in the wild (CITES, 1987). At CoP 9 (Fort Lauderdale, November 1994) Parties recognised that despite their Appendix I listing, tigers 'have become increasingly threatened with extinction by the continued use of their parts in the manufacture of traditional Asian medicines' (Doc. 9.13) and established a working group to undertake assessments on tiger trade. Due to a continued decline of wild tigers and concerns regarding the inability to identify captive versus wild tigers in commercial trade, at CoP14 (The Hague, June 2007) CITES Parties adopted Decision 14.69, directed to Parties, especially in Appendix I big cat rage States. Decision 14.69 states "*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.*"[1] (CITES, 2007). The level at which captive populations should be restricted to support wild tiger conservation has yet to be defined.

[1] Since its adoption at CoP14, the implementation of Decision 14.69 and the issue of restricting both domestic and international trade in Asian big cat specimens has generated considerable debate, as detailed in SC66 Doc. 44.1 (Geneva, Switzerland, 2016).

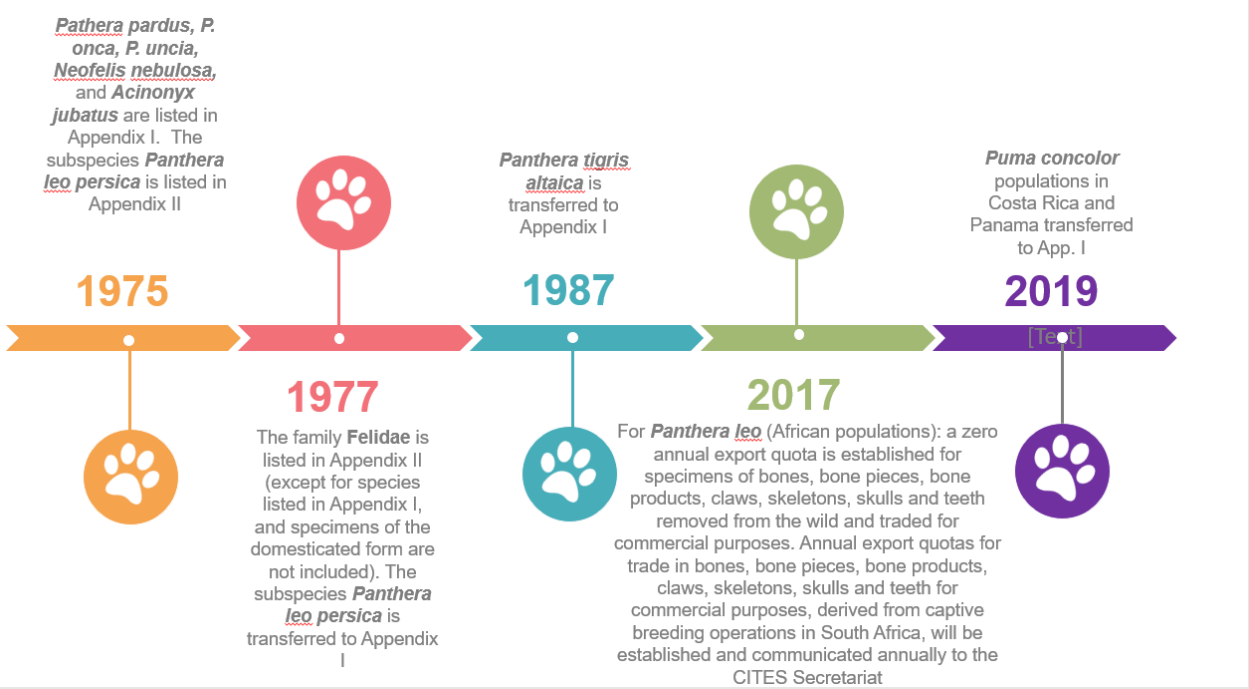

Figure 5: History of listing of big cats within CITES

At CoP17 (Johannesburg, September 2016), nine African countries proposed the African Lion be transferred from Appendix II to Appendix I due to concerns that the species' wild population was declining and the international trade increasing (CITES, 2016). The proposal was not supported, and instead, Parties reached a compromise which consisted of retaining the lion in Appendix II with an annotation (Figure 5). The annotation established a zero annual export quota for specimens of bones, bone pieces, bone products, claws, skeletons, skulls and teeth removed from the wild and traded for commercial purposes, and annual export quotas for trade in bones, bone pieces, bone products, claws, skeletons, skulls and teeth for commercial purposes, derived from captive breeding operations in South Africa, to be communicated annually to the CITES Secretariat. At the same time, several related Decisions were adopted at CoP17 (17.241 – 17.245), including Decision 17.241 e) directing the Secretariat to undertake studies on legal and illegal trade in lions, including lion bones and other parts and derivatives, to ascertain the origin and smuggling routes, in collaboration with TRAFFIC. This study, "The Legal and Illegal Trade in African Lions" was presented and discussed at the 30th Animals Committee (AC30) (16-21st July 2018) and revised for final submission to the 70th Meeting of the Standing Committee (SC70, Sochi October 2018) as SC70 Doc. 54.1.

CITES Decisions 18.251-18.253 on Jaguars (*Panthera onca*), adopted at CoP18 (Geneva, August 2019), encouraged Parties and relevant stakeholders to cooperate on matters related to jaguar conservation and the elimination of poaching and the illegal trade in jaguars. Decision 18.251 requested the CITES Secretariat to prepare a study on the illegal trade in jaguars, with the aim to:

i) map illegal trade in the jaguar throughout its range, including poaching, trade pathways and networks, and main markets that are driving this trade, and how it is connected to other wildlife trafficking activities in the region;

ii) analyse the uses of jaguar specimens, both within range states and in international markets, as well as the extent to which illegally-sourced jaguar products are entering international trade;
iii) analyse the modus operandi associated with illegal trade in jaguar specimens and possible drivers of this activity; and
iv) characterise the overall impact of illegal trade on jaguar populations throughout the species' range

This study "CITES Study on the illegal trade in jaguars (*Panthera onca*)" was made available to CITES Parties in October 2021 (Arias, 2021)

Links to big cat trade among a variety of species found in "The Legal and Illegal Trade in African Lions" (SC70 Doc.54.1) raised questions as to the broader trade in big cat species, so at CoP 18 Decision 18.246 a) was adopted to conduct a study on the legal and illegal trade in big cats to determine the legal and illegal trade in lions and other big cats to better understand trends, linkages between trade in different species, and the commodities in trade which contain, or claim to contain, such specimens.

This study was commissioned to fulfil Decision 18.246 a).

Data sources

Legal Trade: CITES Trade Data

The CITES Trade Database, managed by UNEP-WCMC on behalf of the CITES Secretariat, currently holds over 23 million CITES trade records. Parties to CITES report their imports and exports of CITES listed species annually through Annual Reports.

Data for all cheetah, clouded leopard, jaguar, leopard, lion, puma, snow leopard, and tiger parts and derivatives in trade were downloaded from the CITES Trade Database in January 2022 covering the period 2010 to 2019. Reports from exporters and importers are used throughout this study and major discrepancies are noted. Data reported in the CITES Trade Database are assumed to be legal. The analysis of this study focuses on direct exports and imports of big cats reported at species level.

Between 2010 and 2019, a total of 121 CITES Parties reported direct exports of big cats at species level and 129 Parties reported direct imports (Figure 6).

Throughout the report, trade data is summarised in two categories: whole organism equivalents, and parts and derivatives. Whole organism equivalents are commodities that can reasonably equate to one individual, such as a trophy or a live individual. Term codes included are trophies, skeletons, skins, skulls, bodies, and live individuals. While skins and skulls originating from one individual big cat may be reported in trade separately, this is often reported as one trophy. Where they are reported separately, it cannot be ascertained whether the skin and skull are from the same individual or two individuals. Therefore, the total whole organism equivalents in trade are a precautionary estimation, and therefore may overestimate the actual number of individuals in trade, based on best available data.

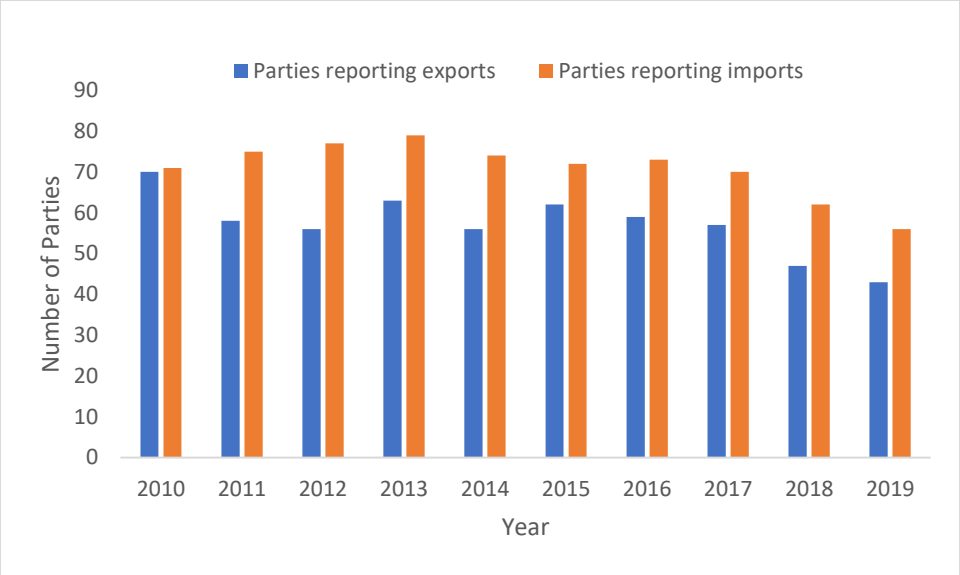

Figure 6: Number of CITES Parties reporting direct trade in big cats per year, 2010-2019 (*Source: CITES Trade Database*).

Illegal Trade Data

Information on seizures was obtained from the two sources listed below and combined into one dataset, where possible.

CITES Annual Illegal Trade Reports

CITES member Parties are required to submit yearly annual illegal trade reports (ITR) of seizures both internationally at borders and domestically (e.g. during market inspections). The United Nations Office on Drugs and Crime (UNODC) hosts a database of this trade and provided data on big cat seizures between 2016-2021 for this report. In total there were 873 reports from 61 Parties (Figures 7, 8, and 9) with the number of seizures peaking in 2016 (Figure 8).

TRAFFIC's Wildlife Trade Information Systems

TRAFFIC collects information in the Wildlife Trade Information Systems (WiTIS) database on illegal trade in species including lions on an ongoing basis to monitor patterns of trade. Data are collected from a variety of sources, including open sources that may not be verified by CITES Parties, such as from media reports and from publications and national and international court records. Additionally, the database contains some seizure records from government agencies and customs. The year range for this dataset was 2010 to 2021. In total there were 3,465 records from 104 countries (Figures 7,8, and 10) with the number of reports recorded peaking in 2019 (Figure 8). Records were manually checked for duplicates in the Illegal Trade Reports, with 312 seizure records in WiTIS duplicates found and omitted from the analysis of WiTIS data presented here. The two data sources are therefore presented separately and the data presented from WiTIS are additional to those in the ITR.

Often the only data available on illegal wildlife trade are reports of seizures, but from these data alone it is extremely difficult, if not impossible, to infer trends due to the inherent biases in the

data. TRAFFIC collects seizure data from media reports and focuses collection efforts by geographical region and target species. This creates bias in the data collected, as does the bias created by the media itself in what it chooses to publicise, as the media focus is skewed in both the countries and species it focuses on. TRAFFIC data is more complete in recent years due to increased collection efforts, versus earlier years. It is therefore not possible to assume from these data alone any trade trend conclusions. In addition to these biases, the ability and willingness of a country to make seizures is dependent on a number of factors, and countries do not all make seizures at the same rate. Just because a country makes a large number of seizures, it does not mean it is the country with the largest volume of illegal wildlife trade or that its efforts to curb illegal wildlife trade are effective. To add further complexity, the factors influencing seizure rate and reporting rate will vary over time. Due to these complexities, the use of seizures as a measure of illegal wildlife trade is unreliable and trends in the data may reflect changes in reporting rates or enforcement effort rather than trends in trade. Sometimes unjustified assumptions are made on the proportion of illegal trade that seizures represent. Reported seizures are an imperfect proxy for the volume of illegal wildlife trade; true measurement of such trade is impossible.

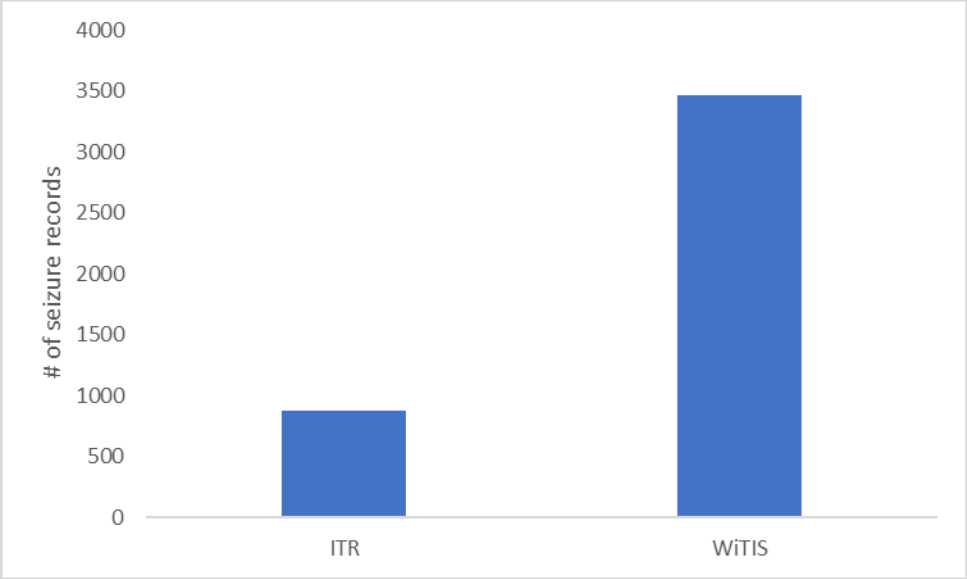

Figure 7: Number of seizure records from CITES illegal trade reports (ITR) 2016-2021 and TRAFFIC Wildlife Trade and Information Systems (WiTIS) database 2010-2021

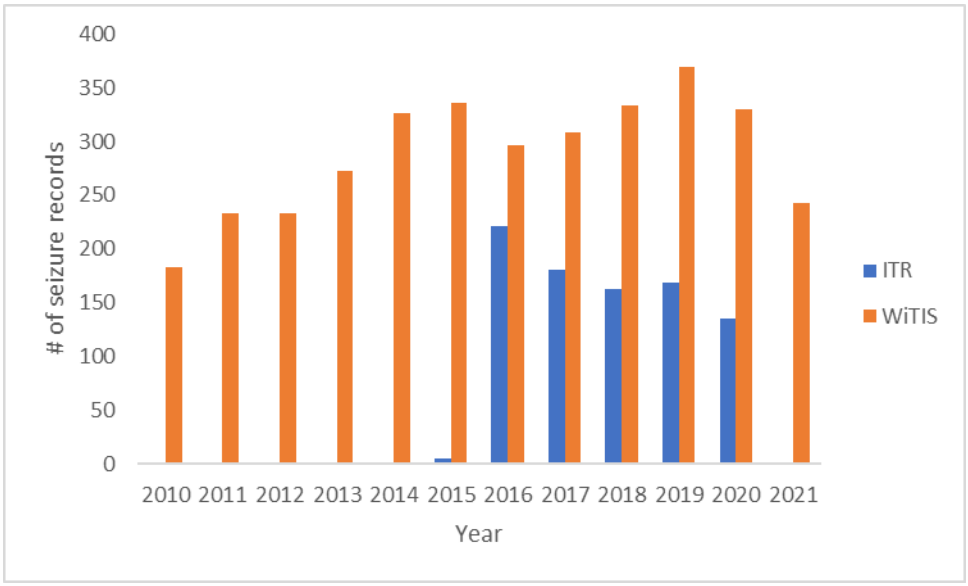

Figure 8: Number of seizure records by year CITES illegal trade reports (ITR) and TRAFFIC Wildlife Trade and Information Systems (WiTIS) database

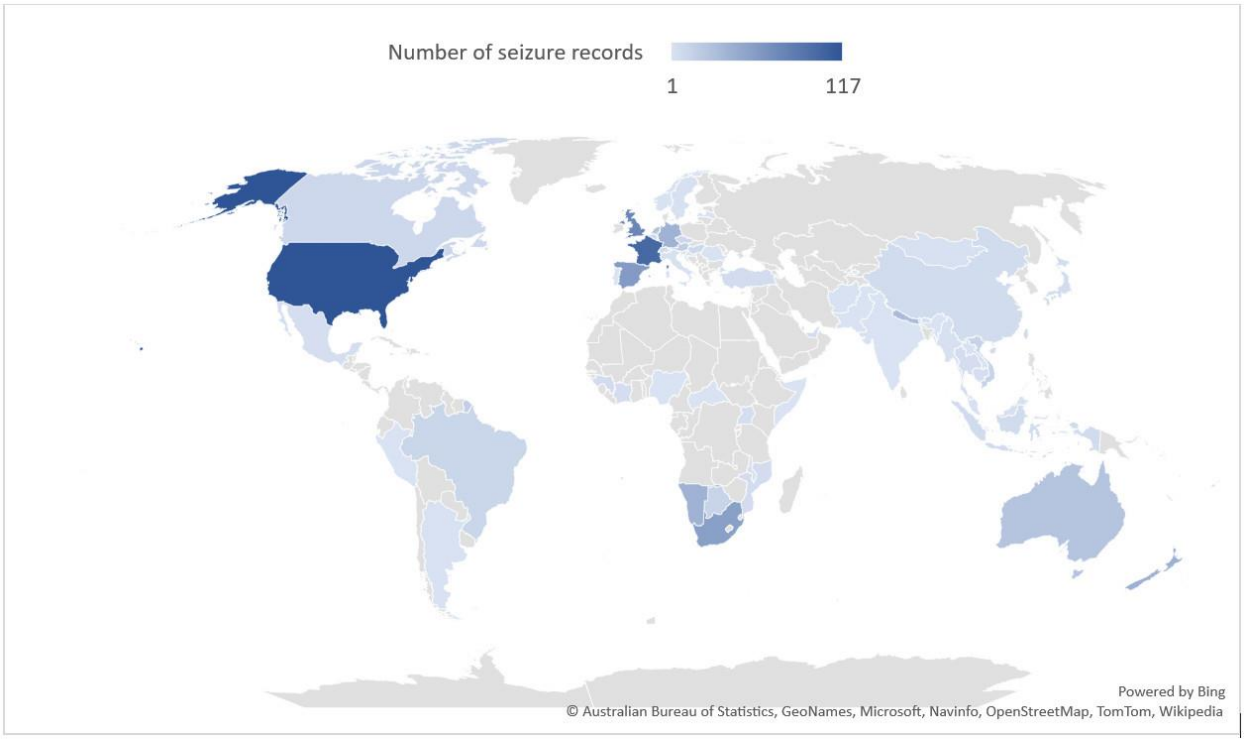

Figure 9: CITES Parties reporting big cat seizure records in CITES Illegal Trade Reports between 2016-2021 (*Source: CITES Illegal Trade Reports).*

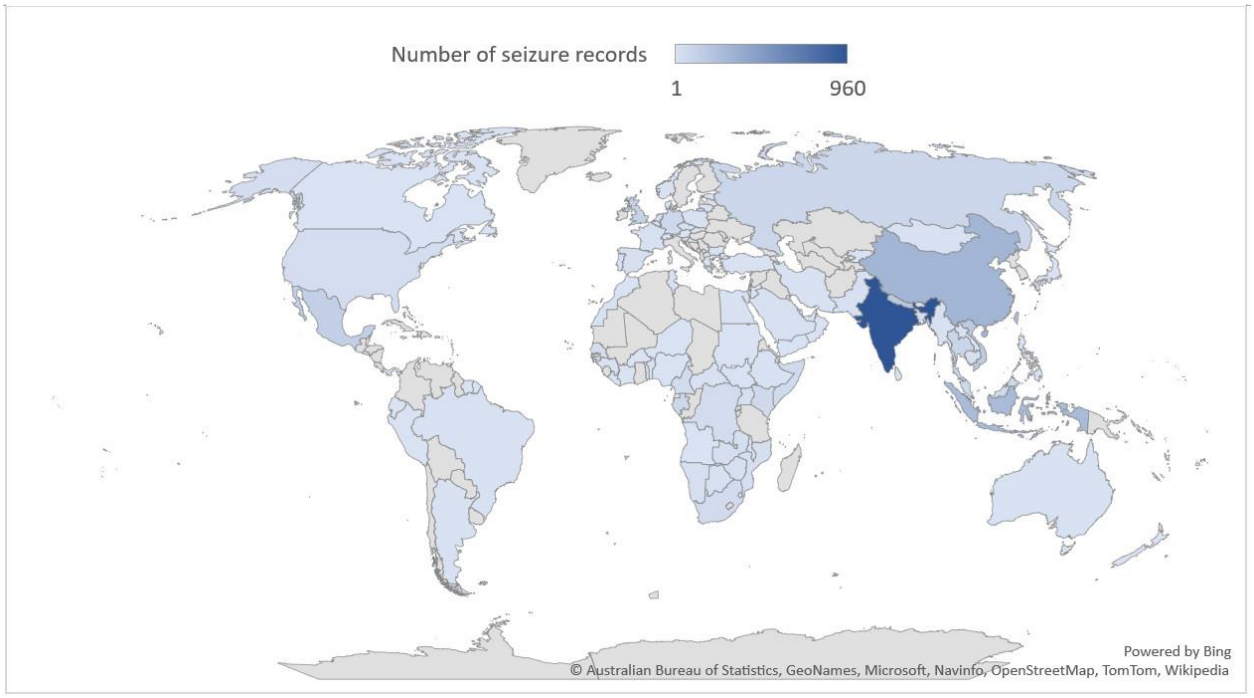

Figure 10: Countries/territories with big cat seizure records in WiTIS between 2010-2021 (*Source: WiTIS).*

Literature Review

Published and grey literature were consulted to obtain an understanding of the legal and illegal trade in big cats. Literature were consulted in the following languages: English, French, Chinese, Vietnamese, and Lao. Literature was predominantly obtained by online searches of key words, and some literature was also shared by stakeholders.

Stakeholder Consultation

Over 225 stakeholders were consulted between August and December 2021, representing national CITES authorities, government departments, researchers, industry, and national and international NGOs. Stakeholders represented a wide geographic area, including many range States. Interviews were conducted in English, French, Chinese, Vietnamese, and Lao, of experts across North and Latin America, Europe, Asia, and Africa. Many stakeholders preferred to speak under varying levels of anonymity, so generic identifying information has been used for these stakeholder citations.

Online Surveys

Online surveys were conducted to assess the availability of big cat products for sale in three countries:

Viet Nam – An online survey was conducted, which reviewed social media, e-commerce, and live-streaming platforms, all of which were open access. The survey was conducted from 20 September to 5 October 2021 using key words in Vietnamese.

Lao PDR – An online survey was conducted in which 15 closed Lao PDR Wildlife Facebook Groups and 3 Vietnamese community groups were monitored daily from 15 September until 15 October 2021.

China – An online survey was undertaken from 1 August-30 September 2021 of three different platforms, including social media, short video sharing platforms, and WeChat. Searches of key words in Chinese.

The Darknet - a rapid survey of the Darknet was conducted on 26 October 2021. Searches of key words were in English using the Videris search tool.

Physical Surveys were not possible during the course of this project due to movement restrictions caused by COVID-19.

Results

Cheetahs (*Acinonyx jubatus*)

Range Countries: Algeria; Angola; Benin; Botswana; Burkina Faso; Central African Republic; Chad; Ethiopia; Iran, Islamic Republic of; Kenya; Mali; Mozambique; Namibia; Niger; South Africa; South Sudan; Tanzania, United Republic of; Uganda; Zambia; Zimbabwe

CITES Appendix: I (01/07/1975)

IUCN Status: Vulnerable (Assessed 2014; Durant *et al.*, 2015).

IUCN number of nature individuals: 6,674 (Durant *et al.*, 2015).

Background

Cheetahs are extinct or functionally extinct across their former range in Asia, with only a remnant population surviving in Iran. Their range in Africa is only about 9% of their historic range and cheetahs have a low genetic diversity, making them highly vulnerable to the effects of climate change and habitat loss. Cheetahs are listed in CITES Appendix I with annual export quotas for live specimens and hunting trophies in Botswana (5), Namibia (150), and Zimbabwe (50), and are illegally traded as exotic pets, for tourist curios, decorations and clothing, and traditional medicine (WWF, 2020). In addition to threats from natural enemies, cheetahs' low wild population is due to habitat loss and fragmentation, poaching activities, human-wildlife conflict, and illegal trade as pets or body parts (WWF, 2020).

Legal Trade

From 2010 to 2019, direct CITES trade in cheetahs reported by number included a variety of specimens (Table 1). The majority of this trade was non-commercial, and predominantly comprised of trophies. Trophies were mainly wild-sourced (97%) and exported by Namibia (94%), on average, annually reporting the export of 73 wild-sourced cheetah trophies for hunting purposes. The main importers of trophies were EU Member States (71%, with main importers France, Austria, and Germany) followed by Mexico (11%) and Russia (8%; all importer-reported).

Trade term		Importer reported	Exporter reported
Whole organism equivalent	bodies	46	36
	live	536	685
	skeletons	3	3
	skins	52	33

	skulls	45	7
	trophies	773	777
Parts and derivatives	derivatives		50
	garments		1
	hair	5	8
	leather products (small)		2
	rug	2	5
	skin pieces	5	12
	specimens	22,231	19,749
	teeth	2	2

Table 1: Total cheetah (*Acinonyx jubatus*) products in direct trade reported by number, 2010-2019 (*Source: CITES Trade Database*)

Live cheetahs were mainly traded from captive sources[2] (69% of reported exports) and exported predominantly by South Africa (77% exporter reported -the only exported with registered captive breeding facilities), followed by the United Arab Emirates (hereafter UAE, 4% exporter reported) and Canada (3% exporter reported) from which all were reported as from captive sources. The top importer of live cheetahs was China, reporting imports of 116 live cheetahs, predominantly for zoo purposes (106 cheetahs). Other top importers were the United States of America (hereafter USA) and the UAE which reported imports of 51 and 49 live cheetahs respectively, predominantly from South Africa and from captive sources. Of these, the UAE reported importing 20 live cheetahs with no purpose code and from confiscations or seizures in 2010, with five from an unknown source and 15 from Somalia (reported by both the UAE and Somalia). The remaining live cheetahs were reported imports for personal, breeding, medical, and zoo purposes. The USA reported imports mainly for zoo purposes followed by breeding and education.

Direct trade in parts and derivatives by number mainly comprised specimens traded for scientific purposes and low levels of trade in other parts and derivatives such as derivatives, hair, and skin pieces (Table 1). Trade reported by weight and volume and other units 2010-2019 comprised low levels of trade for scientific purposes.

Indirect trade in whole organism equivalent commodities reported by number totalled 79 reported by importers and 171 reported by exporters over the period 2010-2019, and comprised mainly of captive-sourced live cheetahs (40 importer-reported, 80 exporter-reported) and wild-sourced trophies (20 importer-reported, 46 exporter-reported). The majority of live re-exported cheetahs were traded for circuses or travelling exhibitions and zoos. For wild-sourced[4] whole organism equivalents, the majority originated from Namibia (23 importer-reported, 52 exporter-reported) and Zimbabwe (two importer-reported, 12 exporter-reported). The majority of exporters (>50%) were South Africa (17 importer-reported, 58 exporter-reported), EU Member States (18 importer-reported, 37 exporter-reported), and Russia (11 importer-reported, 28 exporter-reported). EU Member States reported importing 38% (30 importer-reported, 18 exporter-reported) of re-exported whole organism equivalent cheetah commodities, followed by Russia (27 exporter-reported) and Canada (six importer-reported, 13 exporter-reported).

[2] Captive sources include source codes C, D, and F.

Indirect trade in parts and derivatives reported by number was low (below 12 for both reporter types) and was mainly of unknown origin. There was no indirect trade in parts and derivatives reported by volume or weight.

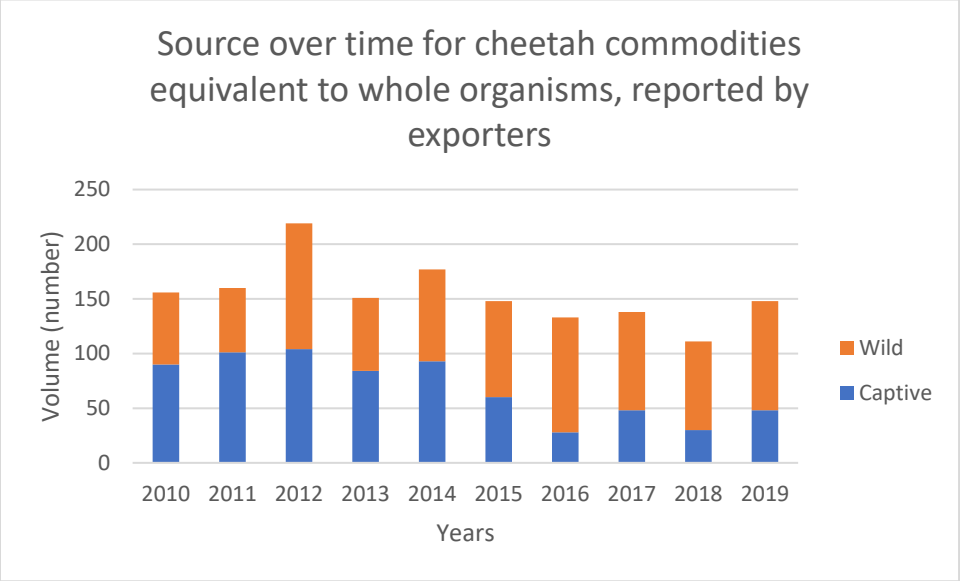

Figure 11: Wild sources include source codes W, R, U, O, I, and unreported; captive sources include C, F, and D. Purpose code S, used for trade in scientific specimens and term "SPE" (specimens) were excluded (*Source: CITES Trade Data*)

Illegal Trade

Twelve CITES Parties reported cheetah seizures in CITES Illegal Trade Reports (ITR) between 2016-2021. Namibia reported the highest number of seizures (31%), followed by South Africa (14%) (Figure 12). A total of 83 live and three dead individuals were seized over the period. Other commodities included skins (35), skulls (8), teeth (6), and skin derivatives (3) (Figure 12). No seizures reported by weight were reported in the ITR.

WiTIS holds information on 231 cases in which cheetah commodities were reported to have been seized between 2010 and 2021; seizures have been made throughout the trade chain. Seizures were most frequently recorded as occurring in Somalia (23%), followed by Kenya (13%), and Tanzania and Saudi Arabia (both 6%) (Figure 12). Live cheetahs were among the most seized items reported by number, with 336 individuals, followed by 319 teeth, 300 paws and 112. Figure 12 shows the top 26 countries in reported seizures, of a total 42 countries, and Figure 13 shows the main commodities in trade that were reported by number. Seizures of cheetahs reported by weight totalled 5 kg of meat and 2 kg of miscellaneous cheetah products.

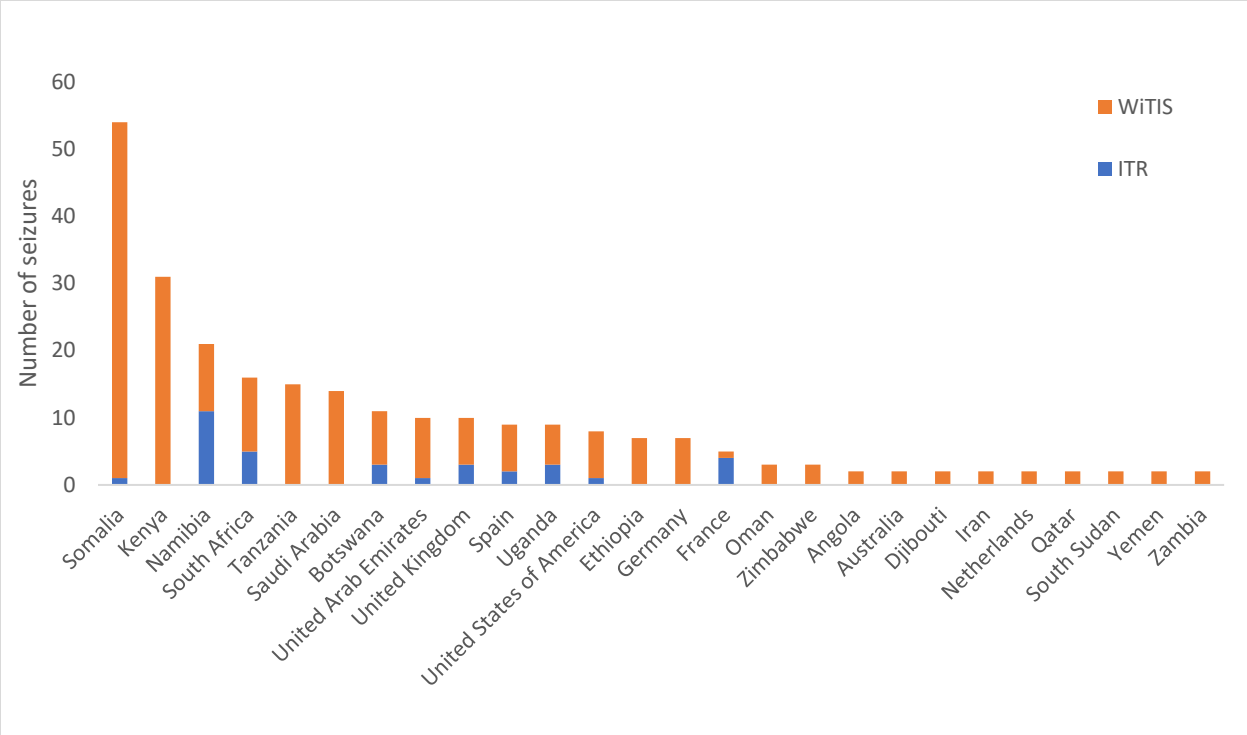

Figure 12: Top 26 countries where Cheetah commodities were reported to have been seized 2010-2021 (*Source: WiTIS* and CITES Illegal Trade Report).

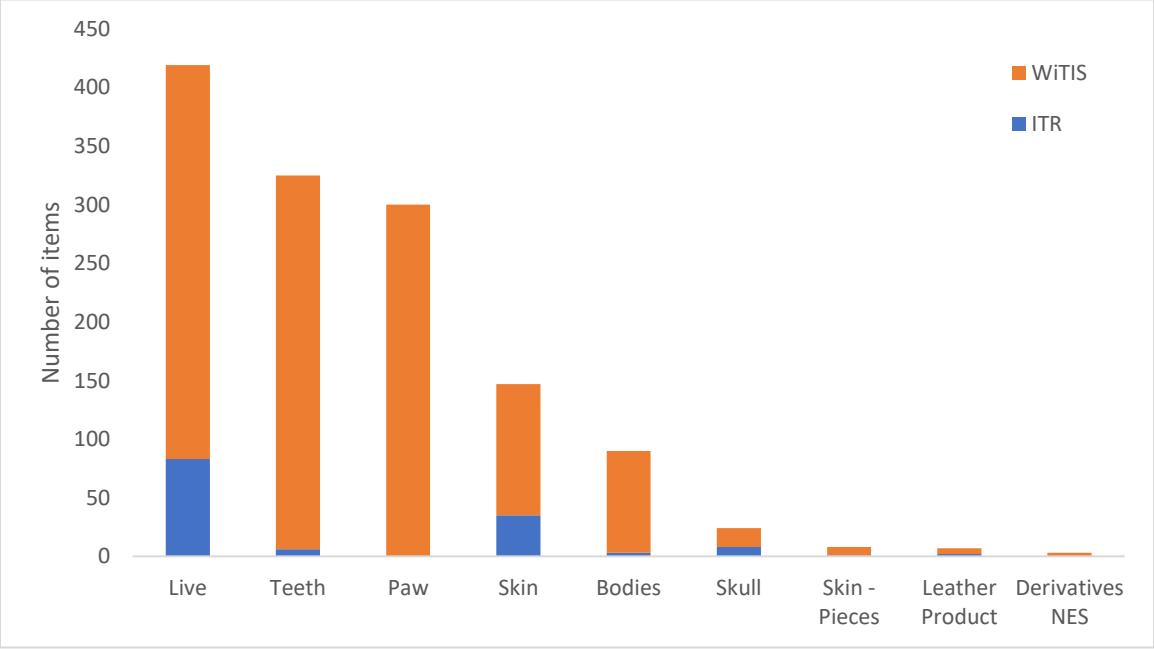

Figure 13: Cheetah commodities seized by number of items 2010-2021 (*Source: WiTIS and CITES Illegal Trade Reports*).

Role of source countries

Asia

The Asiatic cheetah *Acinonyx jubatus venaticus* is a Critically Endangered subspecies of cheetah which is likely only found in Iran (Durant *et al.*, 2015). Estimates by the Iranian Cheetah Society suggest the population of this subspecies may be less than 12 individuals (France24, 2022). Despite the small population size of this subspecies there are concerns that this population may be at risk from illegal trade (Parchizadeh *et al*., 2018). Reports of illegal cheetah trade from Iran includes a wild cheetah sold locally for USD50,000 (Guy Palme, Panthera, pers. comm.), and skins seen for sale in markets in neighbouring Afghanistan (Kretser, 2012). While the level of illegal trade appears to be low, the impact from even a low level of trade on a subspecies with such a small population would be concerning.

East Africa

Live cheetahs are poached in a range of countries in East Africa to supply demand in the Gulf States for the pet trade. Countries or regions most often implicated as sources include Ethiopia, northern Kenya, Somalia (Marker, 2019), and Tanzania. Most countries in East Africa have cited illegal trade as a concern in their National Cheetah Action plans, showing a recognition of the high risk of poaching on cheetahs (Nowell, 2014).

In these areas, cubs are often collected while the mother is absent and sold to animal traders who had previously made known to rural communities that they are interested in purchasing cubs (Nowell, 2014). However, it is unclear how and which populations may be affected. For example, there is disagreement as to whether Ethiopia is a major source of cheetah (Tricorache & Stiles, 2021), or if it is a transit point for trade from Kenya (Nowell, 2014). Some reports point to Ethiopia, specifically Ethiopia's Zephyr and Somali regions, as the main source of cheetah cubs from East Africa to feed the Gulf State pet trade, with northern Kenya as a lesser source (Nick Mitchel, Ethiopia Wildlife Conservation Authority, pers. comm., November 2021).

In Sudan there is demand for spotted cat fur, including cheetah, as a valued traditional men's slipper called a markoob (Nowell, 2014) but it may also be a transit country for live animals, as there are reports of traders of live cheetah operating out of Egypt which claim links to Sudan, suggesting an East Africa to North Africa route (Tricorache & Stiles, 2021).

There are no known captive breeding facilities for cheetahs in East Africa, and so animals sourced from this region will have originated from the wild (Nick Mitchel, Ethiopia Wildlife Conservation Authority, October 2021, pers. comm.).

North, West, and Central Africa

There are only five known wild populations of cheetah in North, West, and Central Africa (Nowell, 2014). These populations are very small, with a total of around 450 animals (Nowell, 2014). They are suggested to be at risk from the general widespread poaching and illegal trade of big cat skins for traditional ceremonies as well as talisman for traditional medicine (Nowell, 2014). However, fake skins are reported to be more commonly observed than genuine products.

Southern Africa

In South Africa, there are two captive breeding centres registered with CITES, and 16 others report live captive births to the International Cheetah Stud book. Concerns have been raised

those captive facilities may have been used to launder wild cheetah, by catching wild cheetah for captive breeding facilities and thus mislabelling them as captive bred (Nowell, 2014). A study conducted in accordance with CITES Decision 16.71 suggested that South Africa should enact and maintain strict national oversight of captive breeding and export of live cheetahs and in response, the South Africa Management Authority announced its intent to do so (AC27 Doc 18).

In Namibia, cheetah are often illegally trapped during human-wildlife conflict and then habituated for the pet trade, where possible, or sold for body parts (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021; Jo Tagg, Rooikat Trust, November 2021, pers. comm.). Cheetahs are not often, if at all, captively bred in Namibia (Youngs Mapenzi, Customs Official at the Namibia Revenue Agency, October 2021, pers. comm.). Three countries in southern Africa, including Namibia, as well as Botswana, and Zimbabwe, have quotas for the number of cheetahs (live and trophies) they are allowed to export established by the Conference of the Parties (Table 2).

	Year									
Party	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Botswana	5	5	5	5	0	5	5	5		
Namibia	150	150	150	150	150	150	150	150	150	150
Zimbabwe	50	50	50	50	50	50	50	50		0

Table 2: CITES quotas for cheetah (*Acinonyx jubatus*) 2010-2019 (*Source, Species+*)

Wild caught and captively bred cheetahs from South Africa may also be suppling trade in Southern Africa, where cheetah skins and other body parts are found in muti markets, for ornaments, medicine, and traditional Zulu robes (Vivienne Williams, October 2021, pers. comm.).

Role of trade routes

Somalia is seen as a key transit country for the illicit cheetah trade. For example, cheetah cubs are trafficked from Somalia (a source and transit country), particularly through the Port of Kismayo (Marker, 2019), before they are moved by small boat across the Gulf of Aden into Yemen. Traders in Yemen were understood to be making a considerable mark-up buying a cub for around USD400 and selling to a buyer for USD10,000 or more (Nowell, 2014). However, it has been suggested that the illegal trade of cheetah through this trading route is small and opportunistic compared to other illegal trade types (Nowell, 2014), which includes drugs, weapons, and human smuggling (Tricorache & Stiles, 2021). Cheetahs are then transported by land into the UAE or Saudi Arabia, where Saudi Arabia acts as both a consumer country and a transit to other Gulf States. Approximately two-thirds of the cubs die during transportation, and those that survive are mainly sold through the Internet as an ultimate accessory for the wealthy (BILIBILI, 2020). According to the Cheetah Conservation Fund, between February 2012 and July 2018, a total of 1,367 cheetahs were offered for sale on Instagram at considerable prices. To a smaller degree some of the Gulf States may also be transit points to buyers in Europe and Asia, particularly Russia and Armenia (Tricorache & Stiles, 2021).

While the trade route by sea across the Gulf of Aden appears to be the major route for cheetah smuggling from the Horn of Africa to the Gulf States, there are also suggestions of a possible

route via private planes, as the high degree of wealth among cheetah pet owners means consumers have access to private planes to smuggle cheetahs (BILIBILI, 2020).

Role of consumer countries

Gulf States

Cheetahs are highly valued in the Gulf States as pets, where they have an important cultural significance as royal hunting animals and are easy to tame when acquired young (Nowell, 2014). Prices for cubs were said to reach more than USD10,000 for an individual animal (Nowell, 2014). Despite the value of these animals, the size of this pet trade is large, with at least 1,000 cheetahs estimated to be kept as pets in the Gulf States (Marker, 2019). Gulf States identified as consumer states for cheetahs include Saudi Arabia, Kuwait, Bahrain, UAE, Oman, and Qatar (Marker, 2019).

According to a study, during the 10 years from 1 January 2010 to 31 December 2019, a total of 1,884 cases of illegal cheetah trading were investigated, involving at least 4,184 cheetahs. Of the 1,884 incidents, 87% were transactions of live animals, and the remaining 13% involved transactions of cheetah fur, bones, and other parts and products. Forty-two percent of these cheetahs were alleged to come from Somalia, 12% from Kenya, and 10% from Ethiopia, with most of these trafficked to or through the Gulf States, of which Saudi Arabia accounted for 60%, Kuwait accounted for 14%, and the UAE accounted for 13% (Tricorache & Stiles, 2021). The study found that the illegal cheetah trade has been exacerbated by the rise of social media, which has promoted the luxury attached to cheetah ownership (Tricorache & Stiles, 2021).

A 2016 law enacted in the UAE prohibits people from owning wild carnivores such as cheetahs without permission. The law imposes a fine of up to USD190,000 and a maximum of six months in prison, as well as confiscation of the cheetah and has apparently since resulted in a significant reduction in illegal purchases of cheetahs in the UAE, highlighting the importance of implementation of strong laws around big cat trafficking (Tricorache & Stiles, 2021).

While the Gulf States appear in literature and interviews as the main destination for live cheetahs, not all Gulf States reported live cheetah imports in CITES Annual Reports. According to the CITES Trade Database, imports by Gulf States represented 10% of live cheetah imports (both importer and exporter reported), with the UAE having imported 49 (exporters reported 66), Bahrain importing 4 (exporters reported 2), and Oman importing two (exporters reported 2) in the period from 2010-2017 (no live cheetahs were reported imported by Gulf States 2018-2019).

In addition, seizure data from WiTIS and the ITR show that of 122 seizures containing 419 live cheetahs, 80 live cheetahs were seized in Gulf States across 27 seizures, with the majority seized in Saudi Arabia (38 cheetahs over 14 seizures) and the United Arab Emirates (31 cheetahs over eight seizures).

Africa

Cheetahs from South Africa have been found to supply trade in Southern Africa, however it was unclear if these were coming from wild or captive sources. Cheetahs have been observed in muti markets, including around Johannesburg, where recent increases in the sale of cheetah skins for capes or curios were reported, following the apparent reduction of leopard skins due to

a decline in African leopard populations. These cheetah skins were suggested to be used as a replacement for spotted cat fur for tribal and traditional uses, such as Zulu traditional robes, capes, and hats for chiefs and shaman (Peter Coals, University of Witwatersrand, October 2021, pers. comm.). Cheetahs are also found in muti markets for use as tourist souvenirs, skins, claws, and teeth, and in the past, wearing cheetah was thought to give the wearer speed. Today, cheetahs are not often found in South Africa for medicinal uses (Peter Coals, University of Witwatersrand, October 2021, pers. comm.).

Linkages in trade

Between cheetahs and other big cat species

Cheetah skins are often sold interchangeably with other spotted big cat skins. This appears to be due to a desire for the spotted fur from cheetahs, leopards, or serval, as in the case with the traditional men's markoob slipper in North and Central Africa (Nowell, 2014); or to replace difficult to find leopard skins in tribal and traditional robes (Peter Coals, University of Witwatersrand, October 2021, pers. comm.); or cases of intentional mislabelling or mistaken identity among big cats, such as in parts of East Africa including Sudan, where the word for cheetah and leopard are used interchangeably (Anon., cheetah expert, November 2021, pers. comm.). As cubs, cheetah, leopards, and caracal have been sold by traders to buyers that are unfamiliar with the differences in big cats due to a vaguely similar appearance and size (Anon., cheetah expert, November 2021, pers. comm.). Gulf State interest in caracals as pets has also led to situations where cheetahs and caracal cubs are smuggled together, mostly from East Africa (Anon., cheetah expert, November, pers. comm.).

Between cheetahs and other non-big cat species

In addition to other big cats, other mammals, birds and reptiles are often smuggled and sold into the Gulf State pet trade. These have included hyenas, gazelles, and birds of prey, which have followed smuggling routes similar to cheetahs from East Africa to dealers in Saudi Arabia and to the Gulf States (Anon., cheetah expert, November 2021, pers. comm.).

Characteristics of trade

A serious concern of this trade route is the high mortality of cubs. It has been estimated that two out of three cubs poached from the wild will die before being sold into the pet trade (Marker, 2019). Of those which do survive, most do not live past two years due to malnutrition, disease, and lack of veterinary care, as well as health issues resulting from cubs being removed from their mothers too early (Marker, 2019).

For cheetahs traded from East Africa, generally they are believed to be smuggled in small boats by generalist traders along very remote coast beaches in Somalia. Traders from Yemen engaging in cheetah trade are usually generalist traffickers and will include in their cargo smuggled fuel, consumer goods, people, arms, and gemstones, as well as animals. Either one person picks up the cheetah and sells it on or the trade will go through several people (Marker, 2019).

Cheetahs are reported to come into conflict with humans in both agricultural areas and private game parks (Buk & Marnewick, 2010). In agricultural areas cheetah are seen as a threat as they may predate livestock, while in game parks cheetah may be seen as a threat to antelope (Buk &

Marnewick, 2010). The economic incentive of protecting livestock or antelope, (which in many cases generate the most income for a park through sale or hunting) is a driver of cheetah poaching in southern Africa (Buk & Marnewick, 2010).

Much of cheetahs' range is in post-conflict areas, with a low degree of wealth, and a great deal of pressure on humans and livelihoods. Cheetahs are sold to countries with a high degree of wealth, representing a potentially high monetary value to pastoralist community members. Traffickers often purchase cheetahs by offering community members compensation for loss of livestock from cheetah conflict and taking the cheetahs dead or alive. Community members have also begun to realise the value of cubs, which has increased poaching of cubs, and the trade in cheetah cubs is replacing livestock conflict as the driver of cheetah poaching (Nick Mitchel, Ethiopia Wildlife Conservation Authority, October 2021, pers. comm.).

Tigers (*Panthera tigris*)

Range Countries: Bangladesh; Bhutan; Cambodia; China; India; Indonesia (Sumatera); Lao People's Democratic Republic; Malaysia (Peninsular Malaysia); Myanmar; Nepal; Russian Federation; Thailand; Viet Nam

CITES Appendix: I (01/07/1975), previously *Panthera tigris altaica* subspecies was listed in Appendix II (01/07/1975), which was lumped into *Panthera tigris* in 2019 following taxonomic changes adopted at CoP18.

IUCN Status: Endangered (Assessed 2014; Goodrich *et al.* 2015)

IUCN estimate of mature individuals : 2,154-3,159 (Goodrich *et al.* 2015)

Legal Trade

In the CITES Trade Database, between 2010 and 2019, CITES Parties reported directly importing 1,245, and exporting 1,733, tiger (*Panthera tigris*) commodities equivalent to a whole organism (Table 3). Most of this trade was in live tigers, of which the majority were captive-bred and other captive sources (~95%). About half of this trade was reportedly for zoos and approximately a third for travelling exhibitions and circuses. In the period 2010-2019, 67 different Parties reported exporting live tigers, and this rose to 80 when reported by importers.

South Africa reported the highest total number of live tiger exports over this period despite not having any registered captive breeding facilities, reporting 375 live tigers. Other exporters included Mexico, reporting exports of 198 live tigers (25 reported by importers) and the EU Member States collectively reporting exports of 188 live tigers (211 reported by importers). The top importers of live tigers were Viet Nam (reporting 100 tigers), China (reporting 90, exporters reported 51), and Ukraine (reporting 69, exporters reported 35).

Indirect trade in live tigers totalled 444 tigers as reported by 45 importers and 698 as reported by 58 exporters. The majority of these live tigers originated from captive sources (95% importer reported, 88% exporter reported).

Direct trade in parts and derivatives was dominated by medicine (Table 3); this trade was exclusively reported by the USA and reported as sourced from seizures or confiscations, with 60% of this trade reported for commercial purposes and the remaining 40% for personal purposes having come from Viet Nam (92%) and low levels (<3%) from Cambodia, China, Thailand, Myanmar, and Lao PDR, and with 4% unknown. The second most traded was derivatives, comprising 2,885 units reported by number and 1.095 kg, virtually all of which was from confiscated and seized sources (>99%), reported for personal purposes (97%), and reported by importers only (primarily USA and New Zealand).

Trade term		Importer reported	Exporter reported
	bodies	34	29
	live	1,129	1,580

Whole organism equivalent	skins	49	60
	skulls	5	7
	trophies	28	57
Parts and derivatives	bone pieces	3	
	bones	14	1
	claws	26	
	derivatives	2,885	
	hair	7	17
	leather products (small)	1	
	medicine	10,640	
	powder	36	
	rug	19	4
	skin pieces	2	
	specimens	993	1354
	teeth	15	

Table 3: Total tiger (*Panthera tigris*) commodities in direct trade reported by number in the period 2010-2019 (*Source: CITES Trade Database*)

Illegal Trade

From 2016 to 2021, 32 Parties reported a total of 238 tiger seizures through CITES Illegal Trade Reports, comprising over 18,492 items seized. Most seizures were reported by the USA (21%), followed by the UK (14%), Australia and France (9% each) (ITR, Figure 14). Derivatives and bone were reported in the highest volumes reported by number, totalling 10,079 (55% of all items) and 8,098 (44% of all items) respectively. Meat was the highest seized commodity by weight, comprising 41 kg in total, with 6 kg of bone and 2 kg derivatives (Figure 16).

The WiTIS database holds additional seizure information on 1,442 seizures between 2010 and 2021, comprising over 11,750 items across 47 countries. Seizures were most frequently recorded as occurring in India (29%), followed by Indonesia (15%), China (12%) and Viet Nam (8%) (WiTIS, Figure 14). Derivatives, bones and claws were reported in the highest volumes where reported by number, totalling 3,782 (32% of all items), 2,730 (23% of all items) and 1,300 (11% of all items) respectively. Bone was the highest seized commodity by weight, comprising 1,410 kg in total, meat (756 kg) and derivatives (224 kg) the next most frequently seized items recorded (Figure 16).

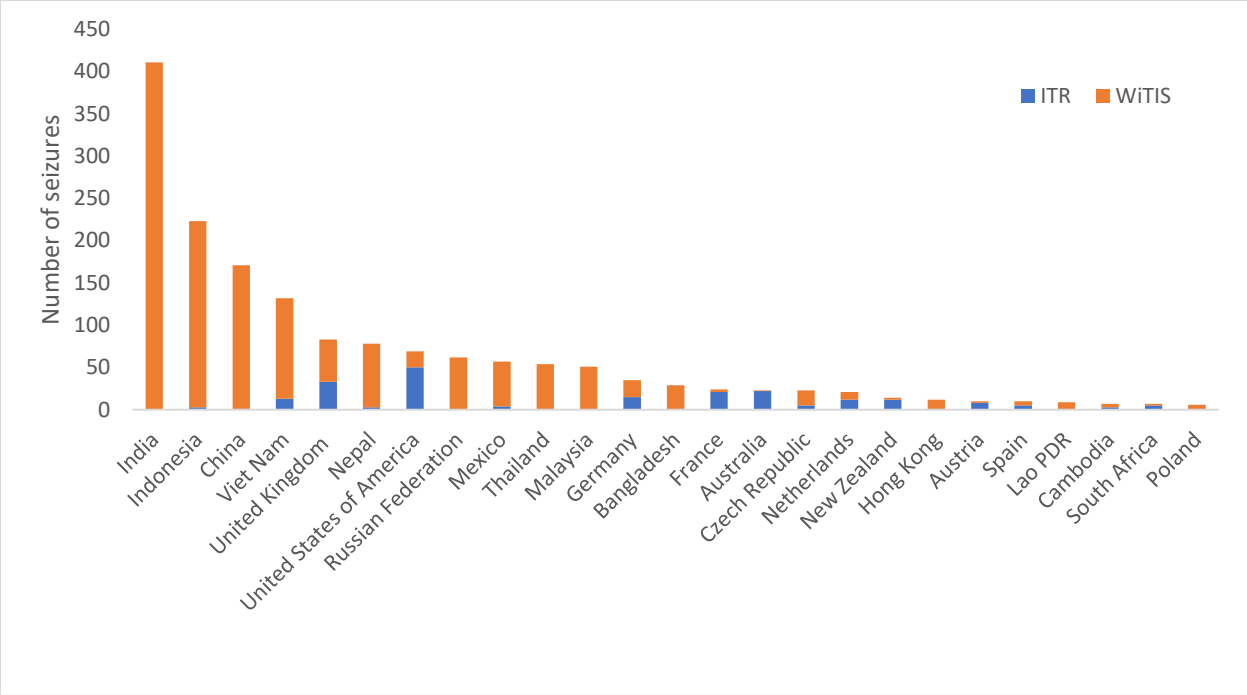

Figure 14: Top 25 countries with reported seizures of tiger (*Panthera tigris*) in ITR 2016-2021 and WiTIS 2010-2021 (*Source: CITES Illegal Trade Reports and WiTIS*).

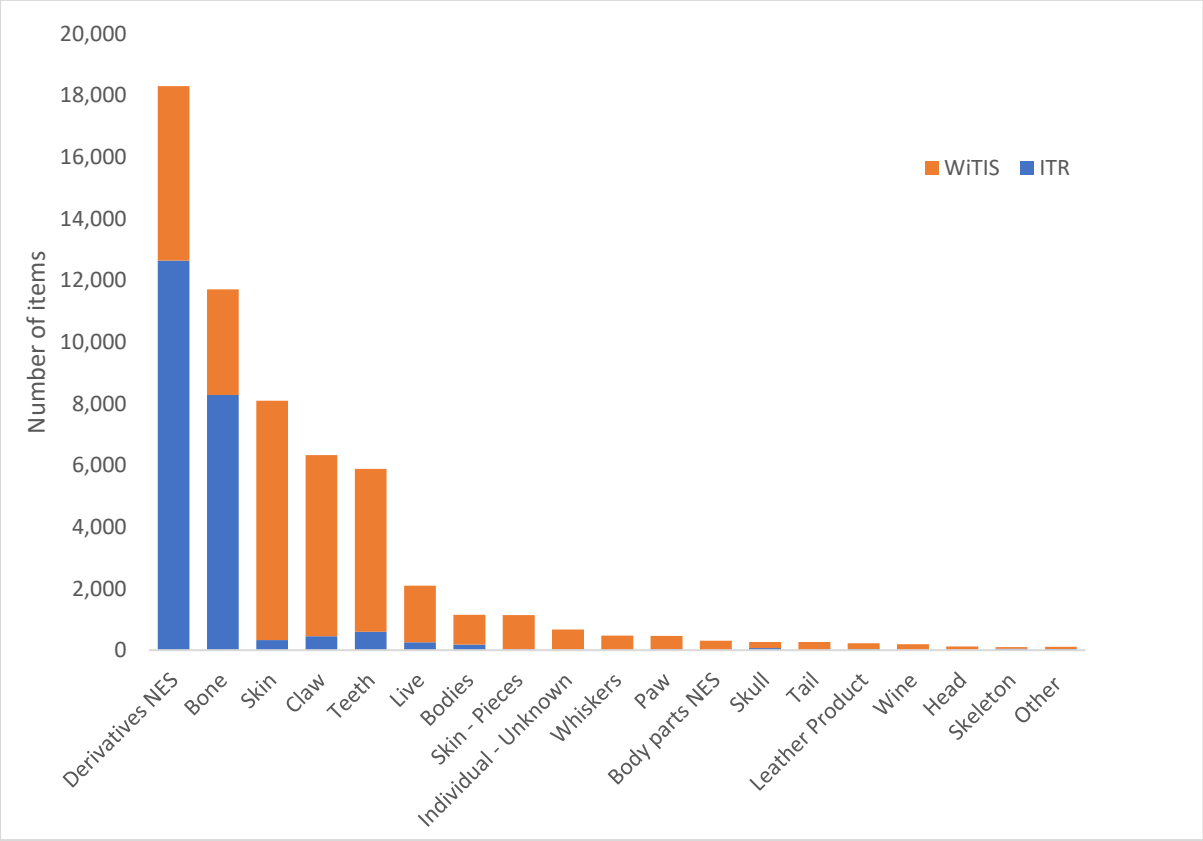

Figure 15: Tiger items seized as recorded in ITR 2016-2021 and WiTIS 2010-2021 where reported by number with 99% of seized items shown (*Source: WiTIS and CITES Illegal Trade Reports*).

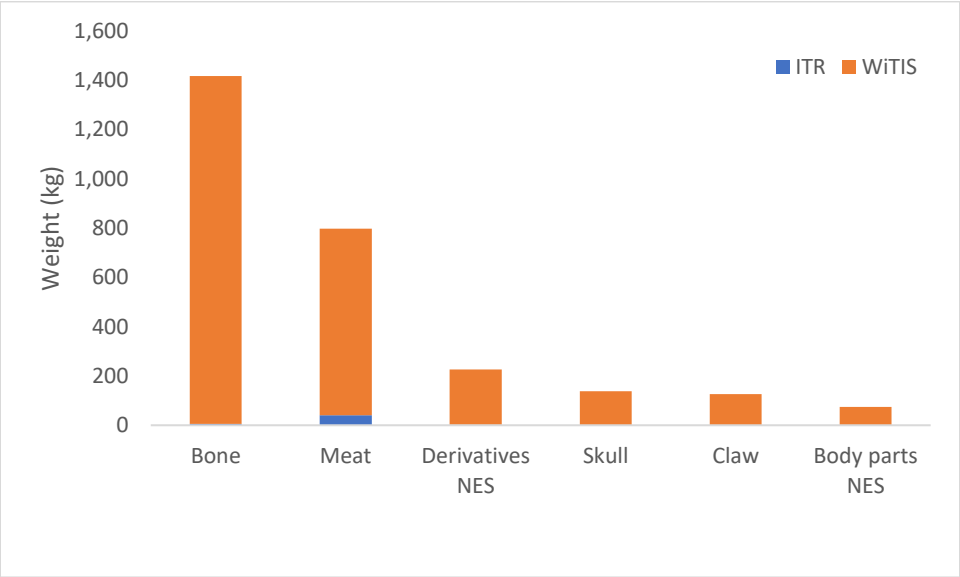

Figure 16: Tiger items seized as recorded in ITR 2016-2021 and WiTIS 2010-2021 where reported by weight with 99% of seized items shown (*Source: CITES Illegal Trade Reports and WiTIS*).

Role of source countries

Wild tiger

Hunting, poaching, and habitat loss have led to the extirpation of wild tiger from much of its historic range. In particular, tigers are likely to be extinct (or functionally extinct) from the wild in Viet Nam and Lao PDR and are likely to have been mostly lost from China and Cambodia compared to their historic distribution (Davis *et al.*, 2020). The majority of the current wild tiger population live in India (Qian, Y., 2020). While there are significant protections in place in India, poaching from the wild still occurs (Qian, Y., 2020).

Parts from wild poached tigers from Russia are believed to be used by Chinese nationals in Russia or sold to overseas markets, other than the fur/pelts of the tigers, which are burned at the poaching site to hide their obvious markings. Tigers that are caught killing livestock in Russia may be killed with a government permit, but in this case the entire tiger carcass must be burned (Anon., Russia, December 2021, pers. comm.).

While it is difficult to determine whether tiger products originate from the wild or from captive-bred sources, a consumer survey among 1,200 Chinese and Vietnamese citizens found that more than 55% of big cat consumers self-reported a preference for ‘wild’ big cat products, and 72% of the consumers mentioned that they believed ‘wild’ products would be better than ‘captive-bred’ ones (Nguyen Q. 2019).

Captive tiger

TRAFFIC's *Skin and Bones Unresolved: An Analysis of Tiger Seizures from 2000-2018,* showed that in 2019, 58% of tiger products seized in Thailand and 30% in Viet Nam were identified as originating from captive facilities (and the remainder from wild sources), with seizures of whole or live tigers likely to originate from captive sources, due to difficulties of moving these items from the wild (Wong & Krishnasamy, 2019).

Demand for tiger products has been suggested to have led to a proliferation of commercial tiger breeding facilities (Coals *et al.,* 2020). In a review of Asian big cat captive breeding facilities, the CITES Secretariat found 12,574 tigers in 1,038 captive breeding facilities in 68 counties (SC70 Doc.51, Sochi, October 2018). These captive tiger farms are found across Southeast Asia and China, in high numbers (Davis *et al.* 2020), as well as South Africa, Europe, and the United States. Evidence of captive-bred tigers in seizures, with at least 55 reported seizures equating to 366 tigers between 2000-2018, suggests the leakage of captive tigers into the illicit trade (Wong & Krishnasamy, 2019).

Asia

Tigers are likely extinct in the wild in Lao PDR today, and there are an unknown number of tigers living on farms and captive breeding facilities in the country. In 2016, due to international pressure, Lao PDR announced that it would resolve its issues with enforcing CITES and wildlife trade laws. Several shops selling tiger bones and other parts were closed, and three farms that stocked more than 700 tigers were ordered to close their doors or were converted into zoos or conservation centres, based on a 2018 Prime Ministerial Order. The government issued a ban on establishing new wildlife breeding institutions for commercial purposes (Anon., Lao PDR, November 2021, pers. comm.). However, this regulation has not been strictly implemented and tiger farms in Lao PDR persist (Matthew Hunt, Free the Bears, Lao PDR, November 2021, pers. comm.).

Still, there are few seizures of tiger parts and products reported in ITR and WiTIS in Lao PDR compared to neighbouring countries, despite a great deal of trade (Figure 13).

According to SC74 Doc. 36, Viet Nam has 20 tiger farms housing 360 tigers (Lyon, 2022). In August 2021, a seizure of 17 tigers in a house in Viet Nam uncovered a neighbourhood network of tiger famers with links to Lao PDR tiger farms as many people in the neighbourhood and surrounding village are reported to have worked on Lao PDR tiger farms to learn tiger farming techniques (Danviet, 2021). In the wake of the seizure, there were reports of whole 'tiger farm communities' in parts of Northern Viet Nam where 'providers' supply tiger cubs to the local residents and then re-purchasing the tigers once they have grown, thus giving each resident a stake in the commodity (Danviet, 2021). These tigers are allegedly known as 'basement' tigers due to the fact that they are often kept in the basement of private residences to avoid the detection by authorities (ENV, December 2021, pers. comm.).

According to SC74 Doc. 36, Thailand has 718 tigers in eight captive breeding facilities (Lyon, 2022). Tigers from captive facilities in Thailand may supply Lao PDR (transit), Viet Nam, and China, with one estimate that ninety-five percent of tiger products found in Viet Nam come from farms in Thailand and Lao PDR (Nguyen Le Dang, Hang Thuy Nguyen, PanNature, November 2021; ENV, December 2021, pers. comm.). Tiger farms in Thailand sometimes include a tourism component where tigers may be viewed and petted by paying visitors (EIA, 2018).

There are understood to be more than 6,000 tigers in captivity in China on more than 200 farms. Some of these farms in China are considered public zoos or circuses that act as captive breeding centres. Few tiger products found in Chinese markets are considered to have come from China, in part allegedly due to the ease of access to tigers farmed in Viet Nam and Lao PDR. However, demand for tiger parts and products in China among a large population, coupled with the high cost of raising tigers and enforcement of protections placed on them, has led to an increase in farming a variety of other big cat species in China to replace tiger parts on the Chinese market, such as lions and leopards (Anon., China, November 2021, pers. comm.).

South Africa

South Africa is not a range State for tigers; however, tigers are captively bred in South Africa and according to CITES Trade Data from 2010-2019, South Africa reported the highest total number of live tiger exports, reporting 375 live tigers (309 reported by importers). It is unknown how many tigers there are in South Africa, or how many captive breeding facilities house tigers, but media estimates at least 60 unlicensed breeders (de Waal, L., 2019). No tiger breeding facilities are listed in the CITES register for South Africa or indeed any country, so these are likely illegally sourced tigers.

A recent trade show in South Africa offered 'canned' hunting experiences for tigers (de Waal, L., 2019). At least one captive hunting farm in South Africa was understood to be owned and operated by a group of Vietnamese businesspeople, who captively bred both lions and tigers on site. Customers were hunters from Europe, the US, and Asia, and once killed, the owners of the facility were reported to have collected the bones of the lion or tiger and sold them to Vietnamese customers, mislabelled as 'tiger' in Viet Nam in the case of lion bone, thus exporting 'legal' lion bones as an illegal product (Lam *et al.*, 2020).

Europe

Tigers may be legally held in captivity in many parts of Europe, but there is a devolved control of captive breeding rules, including for recording births, deaths, and disposal, leading to potential instances of illegality. A 2019 Interpol report highlighted several EU Member States among the top 30 global exporters and importers of tigers between 1975 and 2018, including Belgium, Germany, France, Italy, and the UK (Interpol, 2019). Private owners in the EU must either apply for a license or register themselves with the relevant authorities, and while inspections are typically carried out prior to the approval of registering a facility by the competent local or regional authorities, further inspections are infrequent and often limited (Musing, 2020).

According to SC74 Doc. 36 on Asian Big Cats, (Lyon 2022), of those Parties that responded to Notification to the Parties No. 2020/039, Austria reported keeping Asian big cats in captivity only in approved zoos and registered scientific institutions. The Czech Republic cited SC70 Inf. 24 and SC 70 Inf. 23 submitted to the 70th meeting of the Standing Committee (SC70, Sochi, October 2018), stating there were 177 live tigers in captivity in the Czech Republic, and that there was a decline in the annual number of newly registered captive tigers (33 in 2018 and 16 in 2019). Netherlands said possession of big cats is illegal, and that big cats are only housed in zoos and special rescue centres. Slovakia reported that in 2018, an inventory was conducted of ten facilities that keep Asian big cats in captivity and one circus from the Czech Republic. Spain reported 27 facilities in the country that keep Asian big cats in captivity for non-commercial purposes.

Farms in the parts of Europe have illegally become sources of tiger products to Asia, where a belief appears to have developed that a "European tiger" represents quality and strength, despite them being clearly captive-bred and not sourced from the wild (Martin T., 2018). For

example, Czech Republic tiger farmers cite Viet Nam as the main destination for their tiger products and Asian demand for traditional medicine products containing tiger as the reason behind the increase in Czech Republic tiger farms (Compiled responses from Czech Environmental Inspectorate, Headquarters, CITES and Biodiversity Department, December 2021 and Czech Ministry of Environment, CITES Management Authority December 2021, pers. comm.).

According to the CITES Trade Database, in the past decade (2010-2019), EU Member States reported direct imports of a total of 49 live tigers (exporters reported 67), and direct exports of 188 live tigers (exporters reported 211). All exported tigers were reported from captive sources and were mainly in trade for circuses/traveling exhibitions and zoos, however a total of 54 (reported by EU Member States) were exported directly for commercial purposes. These live, captive-bred tigers originating in the EU were predominantly exported to Thailand (11 tigers) and the UAE (17 tigers, in 2010 and 2011), and five live tigers were exported to Switzerland (4 in 2010 and 1 in 2019). Germany and Spain reported the highest number of commercial exports, 28 and 17 live tigers respectively from 2010-2019. Trade (both direct and indirect) in other tiger commodities was generally low in comparison and comprised mainly trophies and skins. During this period, from 2016-2021, European countries also reported a total of 212 seizures involving 15 tiger commodities through CITES Illegal Trade Reports, with the UK, Germany, France, Czech Republic and The Netherlands reporting the most seizures.

United States

The United States has the highest number of tigers in private hands, with more than 10,000 tigers held as pets or in private zoos. Currently, 30 of 50 states in the United States specifically allow private ownership of tigers, and nine states have no laws or regulations prohibiting tiger trade (Popescu, 2021). Although Texas specifically prohibits private ownership of tigers, Texas has the largest number of privately owned tigers in the United States (Enorth, 2010).

A quick search of the Darknet (October, 2021) showed twenty-four offers for illegal sale of tigers and other big cat cubs; 12 of these offers contained the information “ships from the United States to worldwide”, while an additional six simply stated “ships worldwide”. Four of the unspecified origin locations showed IP addresses originating in the US, although these may have been cloaked with a VPN. Two advertisements stated that they shipped from Germany, and the remaining six advertisements did not contain location information. While more research is needed to understand the nature of big cat sales on the dark web, the prevalence of tigers and other big cats in private ownership in the US, points to the potential for sales of cubs on the dark web marketplace.

The role of illegal trade routes

Many of the countries in Southeast Asia have been implicated in the illegal trade in tigers and specifically the Golden Triangle region (Myanmar, Lao PDR, and Thailand) has been identified as being a key transit region for the illicit tiger trade (Wong & Krishnasamy, 2019). Tigers and their parts may be sourced in Thailand, Lao PDR, Malaysia, and India and then trafficked across boarders into Myanmar where then they are then stored and sold wholesale to local and international buyers. The products and animals are then largely moved to China and Viet Nam, and in some cases are moved on to further destinations (Oswell, 2011).

More recently, trafficking routes suggested for tiger include through Viet Nam and Thailand into Myanmar, then Lao PDR and China. There is also suspected trade from Viet Nam into China; a

second route from Malaysia, into Thailand and up to the Myanmar/Lao PDR boarder; and a third from Russia to China (Debbie Banks, EIA, November 2021, pers. comm.). Nepal, Bhutan, and Bangladesh may also be transit countries, and tiger may be transported through one of these routes from India into China (Anon. Lao PDR, November 2021, pers. comm.). To a smaller degree there are also suggestions of an illicit trade in tiger from Africa through the US and Mexico, and into Europe (Wong & Krishnasamy, 2019).

Consumer countries

Viet Nam and China have been identified as the main consumer countries for tiger products and are both source (captive) and destination countries. In both countries, tigers are primarily consumed for medicinal purposes, or their teeth and claws for talisman, but the skins are also of value (Davis *et al.*, 2020). A consumer survey among Chinese and Vietnamese citizens conducted by World Animal Protection found that more than 80% of participants believed in the medicinal effects of tiger products and that more than 40% of Chinese participants self-reported using remedies and products derived from big cat species, and 25% of Vietnamese participants used tiger bone glue (Nguyen, Q., 2019)

While Lao PDR and Thailand also appear to be consumer and source countries, their role as a consumer is less defined than that of China and Viet Nam.

The United States is also a major consumer of tiger products for skins/trophies and some medicines (Khanwilkar *et al.*, 2022).

China

In China, the terms “tiger” and “leopard” are used to describe any big cat, and there is reportedly mostly national demand for tiger and leopard products (Anon., China, October 2021, pers. comm.). Other big cats, such as lions, are often relabelled as tiger or leopard for sale. In a recent online survey conducted by TRAFFIC in China found 170 advertisements of declared tiger products, which consisted of bone, wine, teeth/claws, and a variety of other products (Table 4). Tiger bone wine is a key commodity, which is made by steeping bones in wine and has an important role in traditional Chinese medicine. Tiger products are also believed to be a sign of prestige and wealth (Coals *et al.*, 2020). As well as tiger bone wine, tiger bone glue is also increasingly an important commodity in trade (Coals *et al.*, 2020). Tiger bone glue is made by boiling the bones of a tiger until it becomes a sticky glue (Davis *et al.*, 2020). Tiger bones in China are expensive on the black market, and China’s tiger bone ban has thus faced severe implementation challenges (Caixin, 2016).

Commodity	Number of advertisements
Bone*	92
Teeth/claw*	42
Others**	16
Wine *	12
Skin	8

Table 4: “Tiger” products advertisements on online platforms in China from 1 August - 30 September, 2021 (*Source: TRAFFIC China*)

* Claimed tiger products advertisements. Some dealers were living in Myanmar, but used Chinese platforms to post advertisements.
**Others includes tiger glue/oil/ointment, meat, heart, penis, beard, eye, etc.

In 2016, the government of China enacted an updated Wild Animal Protection Law that allows the possibility of legal use of tiger bone from captive-bred tigers that died from natural causes if the use meets the relevant laws and regulations of related medicine management, which was voted through at the 21st meeting of the Standing Committee of the 12th National People's Congress (Beijing times, 2016). This law threw TCM legislation into a grey area, as a 1993 ban was still in effect forbidding tiger bone and rhino horn to be used in TCM (China Net, 2016).

Similarly, according to Chinese law, special units such as zoos and circuses are able to buy and sell a certain number of wild animals, including tigers, at an allocation price set by the State, and zoos are only responsible for animal deaths where the death could not be deemed a natural cause. A National Specimen Collection Certificate may be obtained in such cases, which allows an enterprise to submit to the State Forestry Administration relevant documents and photos to apply for a specimen collection, and once received, the specimen can be sold and circulated in China (Southern Weekend, 2013).

There are allegations that Chinese nationals living overseas have become a conduit for tiger trade, and for the parts and products of other big cats that looks like those of tiger parts and products (Arias, 2021). In Russia, wild tigers are killed by Russian poachers, despite there being no reported demand for tiger products from Russian nationals. Instead bones and teeth are understood to be sold to Chinese intermediaries to process (e.g., grind bones into powder) before shipping overseas, especially to China. Tiger products found in Russia are often labelled in Chinese for sale (Anon., Russia, December 2021, pers. comm.).

Viet Nam

Viet Nam's reputation for demand for tiger parts and products seems to have made the country a terminus for big cat species whose bones, teeth, and claws resemble those of the tiger, and which can be relabelled as such. Countries in Africa and Europe have listed Viet Nam not only as the main destination for their poached and captively bred big cats (Compiled responses from Czech Environmental Inspectorate, Headquarters, CITES and Biodiversity Department, December 2021 and Czech Ministry of Environment, CITES Management Authority December 2021, pers. comm.). In Viet Nam the domestic trade in wild and captive tiger is illegal, although around 11% of respondents of one survey in Hanoi and Ho Chi Minh City self-reported using tiger products (Davis *et al.,* 2020). Consumers reported either buying the products for self-use or for gifts and suggested that quality and whether the products were genuine were the major factors influencing consumption (Davis *et al.*, 2021).

A recent online survey conducted by TRAFFIC in Viet Nam across social media platforms showed a total of 4,521 individual items of big cat products offered for sale across 1,143 advertisements (Table 5). Tigers were specifically included in 339 advertisements, lions in four, and the remaining 801 were listed under the generic term "big cat" in the genus *Panthera* (Table 5). The generic term for big cats in Viet Nam, *Báo'*, usually refers to cheetahs, leopards, jaguar, and puma, although these are rarely advertised by their specific name, as demand is largely for tigers (Viet Nam CITES MA, November 2021; Viet Nam CITES SA, IEBR, November 2021, pers. comm.). However, the prevalence of '*Báo'* in online surveys is thought also to have been an attempt to evade authorities and would be assumed by consumers to mean 'tiger'

(Anon., Viet Nam, December 2021, pers. comm.). An experienced buyer would likely request more information from the seller, so it is unclear how many of these 'big cats' may be tiger products.

The majority of tiger product usage in Viet Nam is thought to be tiger bone glue (Davis *et al.et al.* 2021). Other commodities in Viet Nam include claws, teeth, meat and skins, but these were consumed by less than 10% of reported consumers of tiger (Davis *et al.et al.* 2021).

To make tiger bone glue, vendors boil tiger or other big cat bones. After processing, one skeleton would make around 60 tiger/big cat cakes/bars, which are further divided for sale. When cooking the tiger bone, the vendors often put marijuana inside the pot to increase the effectiveness of the bone glue (Danviet, 2021). According to one tiger bone glue vendor interviewed by Leach (2021), tiger bone glue was derived only from 'farmed' tiger bone and not wild tigers.

Tiger Commodity	Number of advertisements	Number of items	Panthera Commodity	Number of advertisements	Number of items
Bone	7	36	Bone	4	20
Claw	131	515	Claw	524	2119
Derivatives (bone glue)	62	542	Derivatives (bone glue)		
Genitalia	2	2	Genitalia		
Individual dead	1	1	Individual dead		
Skeleton	3	3	Skeleton		
Skin	21	24	Skin		
Skin, leather product	17	44	Skin, leather product		
Skin pieces	43	194	Skin pieces	3	3
Skull	11	11	Skull	21	23
Teeth	37	152	Teeth	246	489
Whiskers	6	109	Whiskers		191
Wine	6	36	Wine		

Table 5: Tiger and other big cat product advertisements on online platforms in Viet Nam from 15 September - 5 October, 2021 (*Source: TRAFFIC Viet Nam*)

The demand for tiger products in Viet Nam and other parts of Southeast Asia is outpacing dwindling wild tiger populations, and Vietnamese are turning to other big cats to meet this demand. These other big cats are often relabelled as "tiger" for sale on the Vietnamese market. In 2018, 78% of lion bones exported from South Africa were reported in the CITES Trade Database to be destined to Viet Nam, but only five products labelled as "lion" appeared in the recent online survey and no products labelled as "lion" appeared in the online or physical market survey for the previous lion trade data report (Outhwaite, 2018). The reason behind this was cited to be Vietnamese preference for wearing tiger teeth and claws as jewellery, and lions' ability to be easily used in place of tiger due to the near identical appearance of their parts (Leach A. 2021). In Viet Nam, tiger claws have long been believed to bring good luck and avoid evil spirits. Superstition, belief, self- esteem and official bribery were deemed among the main factors driving the demand for tiger products (Leach A. 2021). Similarly, Mozambique (lions), the Czech Republic (tigers; Compiled responses from Czech Environmental Inspectorate, Headquarters, CITES and Biodiversity Department, December 2021 and Czech Ministry of Environment, CITES Management Authority December 2021, pers. comm.), and South Africa

(Mole & Newton, 2021; IUCN, 2018) have all reported Viet Nam as the main destination for their big cat bones, teeth, and claws. In July 2021, Viet Nam authorities seized 3,100 kg of suspected lion bones, implying that there is still a market in the country for tiger bone alternatives, while a market survey of Vietnamese online platforms turned up only products labelled “tiger” or “big cat” and only five items labelled “lion” (3 teeth, 2 skins), showing a clear preference, and mislabeling of lion products as tiger products for the Vietnamese market.

Targeted poaching in Mozambique for trade in Africa and Asia has been linked to a decline in Mozambique’s wild lion population with one assessment observing that if these events continue on the current trajectory, Mozambique’s wild lion populations will become increasingly threatened (Africa Geographic, 2020). The CITES Trade Database does not record Mozambique as a country of export for lion parts from 2010-2019, so it appears that the trade in lion parts from Mozambique to Viet Nam occurs in an unregulated manner (Mole & Newton, 2021).

Tiger commodities

The use types for tiger parts include tiger bone glue, tiger bone wine, skins, live animals, whiskers, claws, and teeth. Tiger bone glue and tiger bone wine were reported to be traded for a range of uses in Chinese, Vietnamese, Korean, Japanese, Indonesian and Bangladeshi, traditional medicine (Sarah Durant, ZSL, November 2021, pers. comm.). Skins were reported to be used for ornamental use. Live tigers were reported to be in the pet trade in Russia (Sarah Durant, ZSL, November 2021, pers. comm.).

In China, Viet Nam, and elsewhere, all parts of a tiger are thought to be used, including teeth and claws as handicrafts and amulets; tiger penis and meat as exotic food; tiger whiskers as toothpicks and amulets; and skin and fur as luxury clothing for display, or collection (International Fund for Animal Welfare (IFAW) China, October 2021, pers. comm.).

Whole bodies of dead tigers are found in wine in Lao PDR and elsewhere, understood to bring the benefit of the tiger to the drinker and penis bone wine and the carved patella of a tiger are sold as a status symbol thought to bring good luck (Matthew Hunt, Free the Bears, Lao PDR, November 2021, pers. comm.).

The CITES Trade Database reports the largest commodity exported is live tigers (1,580), followed by scientific specimens (1,354) and skins (60). Conversely, the largest importer reported commodity is medicines (10,640) followed by derivatives (2,885) and live (1,129), of which all medicines and derivatives were sourced from seizures and/or confiscations.

There have been some recent changes in the trade of big cats, for example, most Chinese wines initially were advertised as tiger wine, but now many are advertised as ‘bone wine’, although it is suspected to be mostly tiger or tiger alternatives (WCS China, November 2021, pers. comm.). This could be done either to covertly sell illegal tiger bone products, or to pass a product off to consumers as a potential traditional medicine product.

Records from 238 seizures reported in ITR between 2016-2021 included a total of 21 different items, with a further four items reported in 1,442 seizure records in WiTIS between 2010-2021. The commodity seized in the largest quantity by number in both sources was derivatives (ITR 10,079; WiTIS 3,782), followed by bone (ITR 8,098; WiTIS 2,730) with much smaller volumes of other items (Figure 15). Derivatives include traditional medicine products, such as balms, creams, patches/plasters, cosmetic products, pills, and tablets containing extracts of tiger.

Evidence of linkages in trade between species

Lion and tiger

Due to demand for tigers and tiger products, there is an increase in farmed lions in Southeast Asia, which are reported to be kept often in tiger breeding facilities (Coals *.et al.*, 2020). Similarly, targeted lion poaching in parts of Africa for trade in Africa and Asia has been linked to a decline in wild lion populations (Africa Geographic, 2020) with the most common destinations for lion parts being Asian countries, specifically Viet Nam, where it is suspected they are relabelled as tiger products (Mole & Newton, 2021, IUCN, 2018). Lion teeth and claws are also substituted for tiger teeth and claws for use as amulets and jewellery, as they are considered to be indistinguishable to the ordinary consumer (WCS China, November 2021; International Fund for Animal Welfare (IFAW) China, October 2021; Xu Hongfa, China, October 2021, pers. comm.).

In China and Viet Nam both tiger bone and lion bone glue are consumed, although in many cases lion bone is substituted for tiger bone and mislabelled as such for advertisement and sale, or as a fraudulent product which the consumer believes to be real tiger bone glue (Nowell, 2011). The lion parts may have been exported legally or illegally, and both have been observed. Tiger bone glue had been listed in the pharmacopeia of both China and Viet Nam for hundreds of years whereas lion has not, thus there is no a demand specifically for lion bone glue (Save Threatened Wildlife, WWF-VN, December 2021; International Fund for Animal Welfare (IFAW) China, October 2021; Xu Hongfa, China, November 2021, pers. comm.).

According to a news article, tiger and lion hybrids in captive breeding facilities, known as the "liger", are becoming more valued as their heavy bones can create a higher yield for tiger bone glue (The Beijing News, 2007).

Leopard and tiger

EIA investigators report seeing leopard skulls and bones sold as a young tiger (EIA, 2017a) and in China tiger bone was first replaced by leopard bone as leopard were more prevalent, legal, and easier to obtain than tigers, before eventually turning to different species (Sina News Center, 2005). Leopards are more widely distributed and are also more populous and are therefore easier to poach, and enforcement attention and awareness on leopard trade is lower than that on tigers.

Jaguar

Jaguar in Latin America are sometimes relabelled as tiger products, or "South American tigers" largely by Chinese Nationals and people of Chinese descent living in jaguar range States (Bale, R., 2020), although there is no conclusive evidence about the importance of illegal trade of jaguars to China.

Tigers and non-big cat animals

When the "Tiger Temple" in Thailand was raided, police discovered a menagerie, including Malay bears, hornbills and other wild animals in addition to tigers (New culture news, 2016). Similarly, in the USA, backyard tiger breeders display a variety of animals in "zoos" for photographic experiences, and breed cubs and sell parts and products of adults for international trade (Guynup, 2019).

In the trade from Russia to China, often tiger products are mixed with a variety of legal and illegal products to cross land borders into China, including musk sac or powder, ginseng, illegal and legal hardwood, and bear products (Anon., Russia, pers. comm., December 2021).

Bear claws and teeth are reported to be the most seized commodity alongside tiger (Wong & Krishnasamy, 2019).

The process of making tiger bone glue includes adding parts from a variety of species to bolster the weight and amount of glue made, and to increase profits. Species whose parts have been found in the making of bone glue include turtle shells, macaque, and chamois bones, deer antlers and a variety of other species (Lam Anh *et al.*, 2020). Domestic animals, such as dogs and house cats, are also a common substitute for tigers in bone glue.

In China, with leopard bones now more difficult to obtain, monkey bones and bear bones are reportedly more often used instead. Leopard bones are considered to have similar curative effects as tiger bones, but monkey and bear bones are thought to have lesser curative properties. Domestic animals, including dogs and cats, are considered to have similar curative properties to tiger bones (Sina News Center, 2005).

A farm in Lao PDR that keeps tigers, bears and other animals such as peacocks, deer and macaques allow tourists to visit the farm for free and they can select tiger claws, bear paws, and other wild animals through a ‘menu’ (Lam Anh *et al.* 2020).

Lions (*Panthera leo*)

Range Countries: Angola; Benin; Botswana; Burkina Faso; Cameroon; Central African Republic; Chad; Congo, The Democratic Republic of the; Eswatini; Ethiopia; India; Kenya; Malawi; Mozambique; Namibia; Niger; Nigeria; Senegal; Somalia; South Africa; South Sudan; Sudan; Tanzania, United Republic of; Uganda; Zambia; Zimbabwe

CITES Appendix: II (04/02/1977 family listing *Felidae spp*.)/I (populations in India, 04/02/1977, originally listed as *Panthera leo persica* which was lumped into *Panthera leo* in 2019 following taxonomic changes adopted at CoP18)/ (populations in Africa, 02/01/2017, a zero annual export quota is established for specimens of bones, bone pieces, bone products, claws, skeletons, skulls and teeth removed from the wild and traded for commercial purposes. Annual export quotas for trade in bones, bone pieces, bone products, claws, skeletons, skulls and teeth for commercial purposes, derived from captive breeding operations in South Africa, will be established and communicated annually to the CITES Secretariat).

IUCN Status: Vulnerable (Assessed 2014; Bauer *et al.* 2017).

IUCN estimate of mature individuals: 23,000-39,000 (Bauer *et al.* 2017).

Legal Trade

According to the CITES Trade Database from 2010 - 2019, over 22,065 lion specimens equating whole individuals (16,991 according to importers) and over 10,412 parts and derivatives (5,929 according to importers) reported by number were directly exported (Table 6). The purpose of this trade was primarily reported for commercial and hunting trophy purposes (~38%). According to exporters, most of this trade was in captive-sourced commodities (72%) and 26% was wild-sourced.

Importers reported a higher proportion of wild-sourced commodities (33%) and about an equal share of captive-sourced. This discrepancy is due to importers reporting less trade, especially concerning captive-bred commodities, as well as importers reporting a large number of wild-sourced skeletons while exporters reported skeletons primarily as captive-bred. This can be attributed to a large number of wild-sourced skeletons being reported by Thailand and Viet Nam as imports for commercial purposes in 2013 and 2014 respectively, while the reported exporter, South Africa, only reported 14 skeletons in 2013 destined for Thailand. In addition, South Africa reported exporting a total of 407 kg and 2564 individual captive-bred lion skeletons as well as 2167 bones and 480 kg of bones to Lao PDR in 2010-2017, which were not reported by Lao PDR. This additionally resulted in a large discrepancy between importer and exporter reported lion bones over the period (Table 6).

Trade term		Importer reported	Exporter reported
Whole bodies		1,714	1,119

	live	1,860	3,364
	skeletons	5,667	6,466
	skins	789	1,045
	skulls	360	1,073
	trophies	6,601	8,998
Parts and derivatives	bone carvings	3	
	bone pieces	51	
	bones	575	4,173
	carvings	22	
	claws	1,184	1,591
	derivatives	30	79
	feet	9	14
	garments	19	
	hair	183	43
	jewellery	5	
	leather products (large)	2	
	leather products (small)		11
	rug	44	11
	skin pieces	25	14
	specimens	3,655	4,196
	tails	5	4
	teeth	110	275
	unspecified	7	1

Table 6: Total lion (*Panthera leo*) commodities in direct trade reported by number in the period 2010-2019 (*Source: CITES Trade Database*)

Similarly, a higher proportion of lion trophies was reported as wild-sourced by importers (47%) than exporters (19%). This discrepancy could be due to differences in reporting. For example, while South Africa reported exporting a total of 3,682 trophies to the United States in 2010 - 2019, of which 4% wild-sourced and 96% captive-bred, the United States reported 3,445 trophies of which 45% wild-sourced and 54% captive-bred. Trophies were the product traded in the highest volume by number, and were predominantly from captive sources (52% importer reported, 80% exporter reported; Figure 17). Wild-sourced trophies were reported mainly by South Africa (469, and importers reported 1828), Zimbabwe (215, importers reported 399), and Tanzania (194, importers reported 439). Trophies from captive-bred lions were exported almost exclusively by South Africa (>99% reported by both importers and exporters). The USA was the largest importer of both wild-sourced and captive-bred lion trophies, reporting imports of 2,278 (exporters reported 597) and 1,851 (exporters reported 3,521) respectively. Other importers included EU Member States, collectively reporting 1,123 captive-bred lion trophies and 431 wild-sourced trophies (exporters reported 1,845 and 577 captive and wild-sourced respectively), followed by Mexico reporting 181 captive-bred trophies (170 reported by exporters) and 119 wild-sourced trophies (64 reported by exporters) and China reporting 23 captive-bred trophies and 58 wild trophies (278 and 74 reported by exporters respectively). Levels of trade in trophies were highest in 2014 and 2015 and declined until 2019, when more lion trophies from captive sources were reported by exporters (Figure 17).

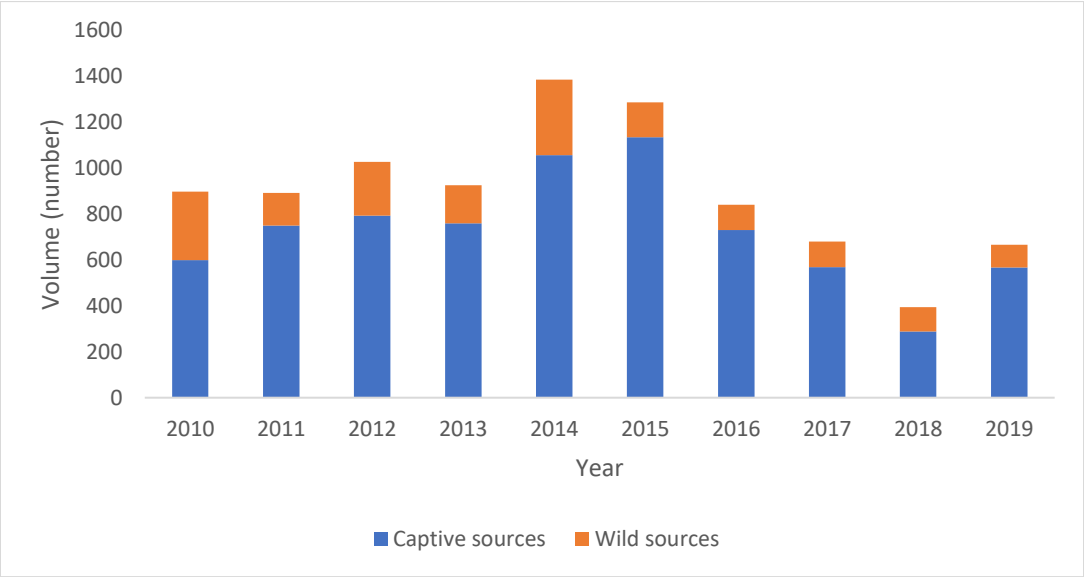

Figure 17: Trade in lion (*Panthera leo*) trophies as reported by exporters from 2010 to 2019 by source; Captive sources include source codes C, F, and D, and wild source codes include W, U, R, I, O, and not reported. Trade reported by number of trophies (*Source: CITES Trade Database*)

Lion trophy imports by the USA decreased from 2016, from an average of 577 per year between 2010-2016 to 68 on average 2017-2018[5], while imports by EU Member States were relatively stable with and average of 157 lion trophies imported annually 2010-2019. The decline in imports by the USA likely occurred due to the listing of *Panthera leo* in the Endangered Species Act and the amendment to the Act in 2015 stating only import permits may be issued if the hunting trophy contributed to the conservation of the species.

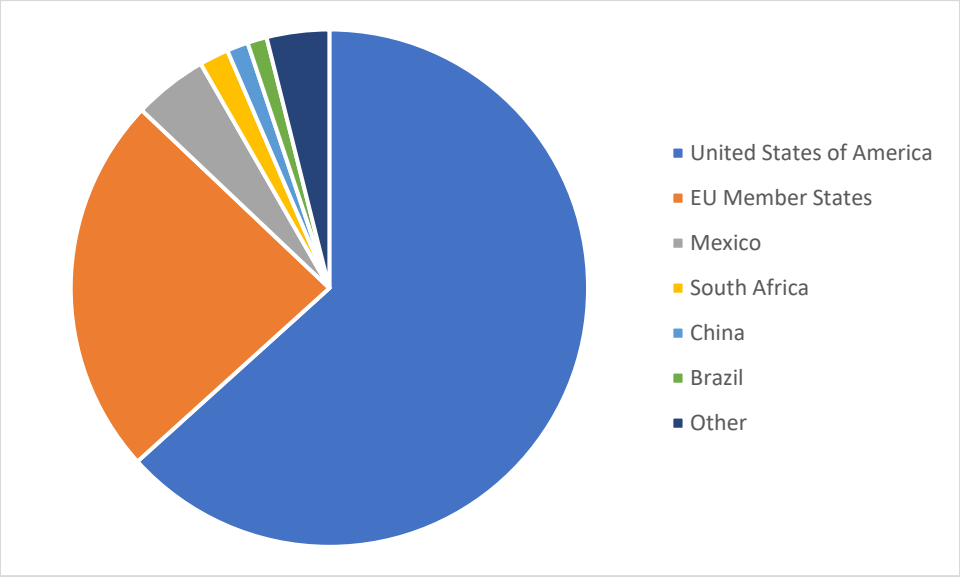

Figure 17: Main direct importers of *Panthera leo* trophies from all sources and all purposes, 2010-2019, reported by importers (*Source: CITES Trade Database*).

Illegal trade

From 2016 to 2021, 33 Parties reported a total of 178 lion seizures through CITES Illegal Trade Reports, comprising over 978 items seized. Most seizures in the ITR were reported by France (17%), followed by South Africa (16%), and Spain (13%) (Figure 18). Claws and teeth were reported in the highest numbers, totalling 299 and 349 respectively (Figure 19). Additionally, 88 live lions were reported as seized over the period, as well as 42 bodies. Bone was the highest seized commodity by weight, totalling 645 kg (Figure 19).

The WiTIS database holds additional seizure information on 368 seizures between 2010 and 2021, comprising 9,444 seized items reported by number, across 180 countries/territories. The highest number of seizures were reported as occurring in Tanzania (21%), followed by Mexico (10%) and China (9%) (Figure 18). Teeth, skins, and claws were reported most frequently, with 3,394 teeth (36%), 2,675 skins (28%), and 2,395 claws (25%) seized (Figure 19). Lion products seized by weight primarily comprised bones, totalling 3,278 kg (91%) (Figure 20). Other commodities seized reported by weight included meat, skulls, and other derivatives (Figure 20).

According to these seizure data, lion bones were the highest seized commodity reported by weight from 2010 - 2021 (Figure 20).

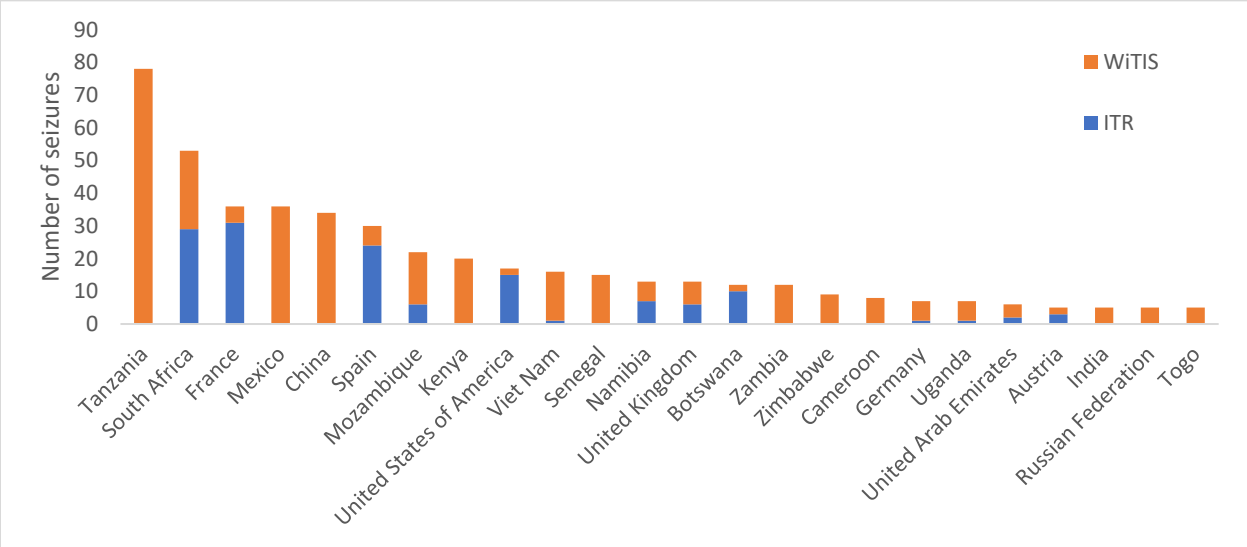

Figure 18: Countries reporting over five seizures of lion (*Panthera leo*) in ITR 2016 - 2021 and WiTIS 2010 - 2021 (*Source: WiTIS and CITES Illegal Trade Reports*).

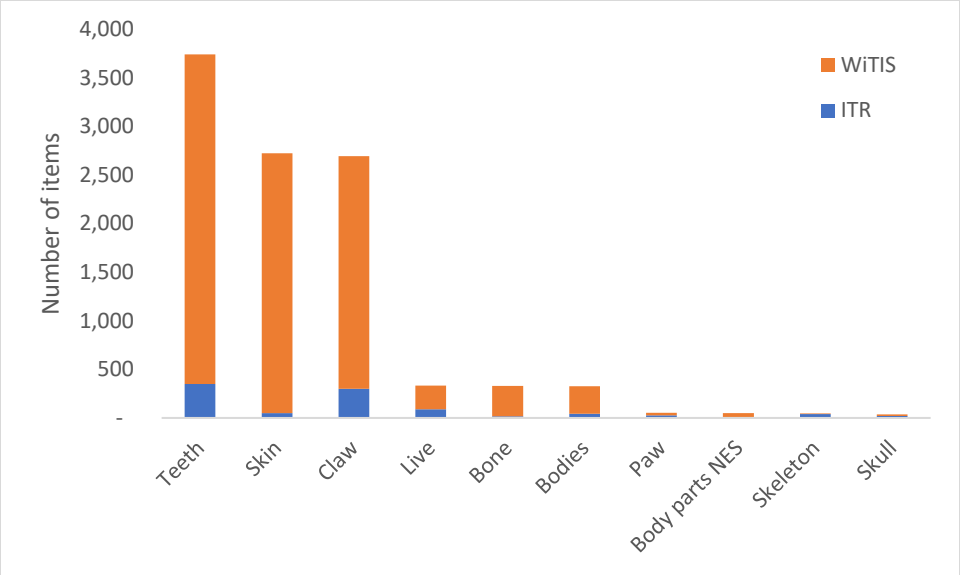

Figure 19: Lion items seized as recorded in ITR 2016-2021 and WiTIS 2010-2021 where reported by number with 99% of seized items shown (*Source: WiTIS and CITES Illegal Trade Reports*).

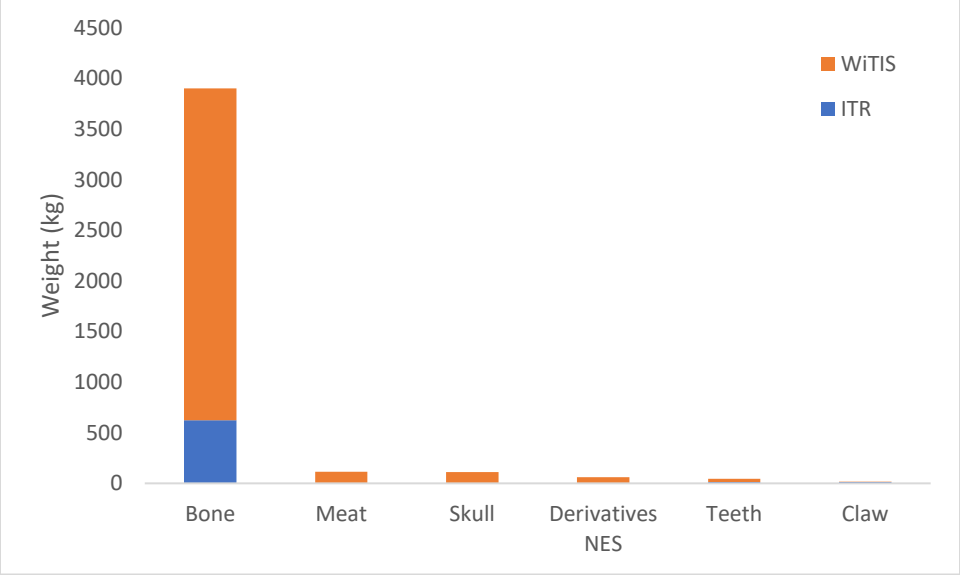

Figure 20: Lion items seized as recorded in ITR 2016 - 2021 and WiTIS 2010 - 2021 where reported by weight, with 99% of seized items by weight shown (*Source: WiTIS and CITES Illegal Trade Reports*).

Bones and skeletons reported by weight

Trade in bones and skeletons by weight in the CITES Trade Database 2010-2019, represented between 100 to 150 lions in trade reported in skeletons (94 to 142 according to exporters), 111 to 166 lions in trade when reported as bones (106 to 159 according to exporters). In seizure data from CITES Illegal Trade Reports for 2016-2021, bones reported by weight represented between 58 to 87 lions. For seizures held in WiTIS for 2010-2021, trade in bones corresponded to between 303 and 455 lions in trade (Figure 21). These 'skeleton-equivalents' were calculated using a mean weight of 9 kg (±1.8 kg) for a full lion skeleton, as estimated by Williams *et al.,* 2015.

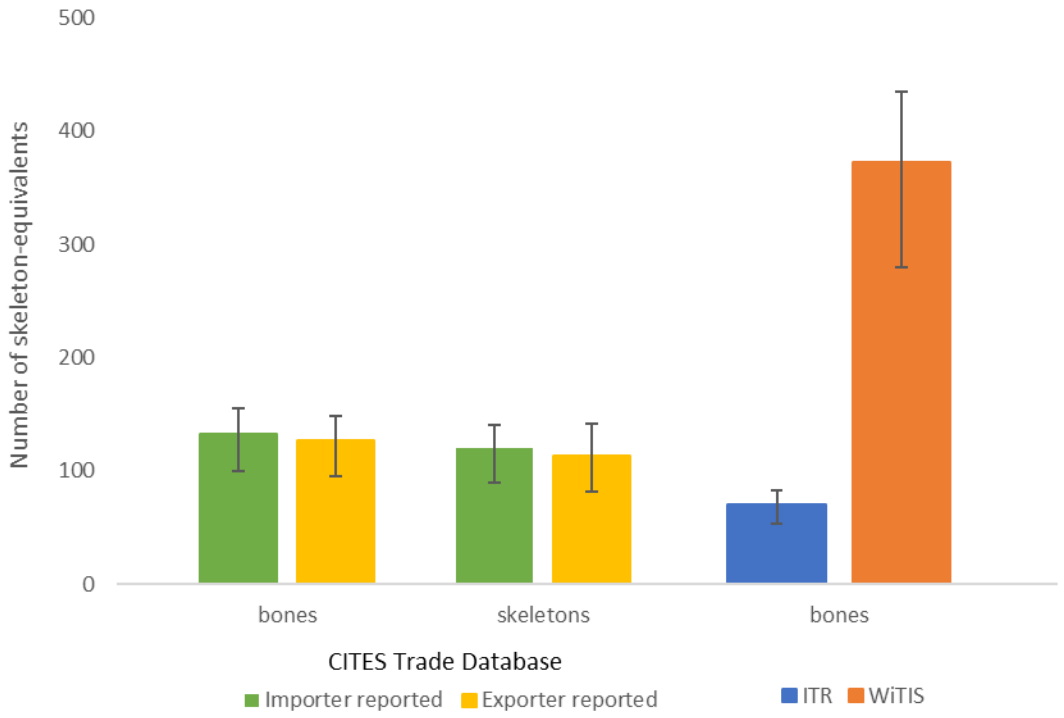

Figure 21: Skeleton-equivalents of *Panthera leo* bones and skeletons reported by weight, converted using a mean weight of 9 kg (±1.8 kg) for a full lion skeleton, as estimated by Williams *et al.*, 2015, with error bars showing the standard deviation, for CITES trade data (both importer- and exporter-reported) for 2010 - 2019, CITES Illegal Trade Report data (ITR) for 2016 - 2021, and seizures from Wildlife Trade Information Systems (*WiTIS*) for 2010 - 2021.

The role of source countries

East Africa

Wild Caught

Tanzania reported exporting an average of 19 wild-sourced lion trophies annually between 2010 and 2019 in the CITES Trade Database, totalling 194 over the whole period (importers reported 439 wild-sourced trophies). In addition, the country reported exporting a total of 66 and 69 skins and skulls respectively between 2010 and 2015, and in 2012 South Africa reported importing 175 wild-sourced bones from Tanzania for hunting purposes (this trade was not reported by Tanzania).

A study by Coals *et al.* (2020), which looked at parts removal of wild lions in East Africa, looked at long term field data on lion mortality in Hwange National Park, Zimbabwe, and in the Ruaha landscape, Tanzania, to determine if there was evidence of targeted poaching for parts (Coals *et al.*, 2020). The study found that rather than targeted poaching events, parts were thought to be removed opportunistically from lions which had been killed in human-wildlife conflict. The uses of the parts were then predominantly linked to traditional and ceremonial purposes, rather than for international trade, and appeared to differ based on the culture of the communities involved (Coals *et al.*, 2020).

Similar findings were made by TRAFFIC in a study which used community and expert interviews combined with data from management authorities to look at the trade in lion parts in Tanzania (Mole & Newton 2021). This study found that most lion parts were used locally for traditional use, often opportunistically following retaliatory killings (Mole & Newton 2021). Similar to the study by Coals *et al.* (2020), distinctions in uses were found to vary along cultural and regional lines (Mole & Newton 2021)

Poaching data for Tanzania are thought to be underestimated and this may explain the disparity in information on lion population declines predicted by the International Union for Conservation of Nature (IUCN) and the Tanzania Wildlife Research Institute (Mole & Newton 2021). These findings suggest that either the full extent of trade is not being detected or anthropogenic lion mortalities (i.e. poaching, retaliatory killings) are not being adequately reported (Mole & Newton, 2021). Of the 368 seizures of lion commodities in the WiTIS database across 52 countries/territories, Tanzania (78) is the country in which the most lion seizures were reported. These seizures in Tanzania were reported mainly through court records and government agencies. Tanzania was followed by South Africa (53, 29 of which were reported in ITR) and France (36, 31 of which reported through ITR) in number of seizures reported. Tanzania has not reported lion seizures through the CITES Illegal Trade Reports.

For pastoralist communities in East Africa, killing a lion in a traditional manner and displaying the parts of the animal often have important cultural values and confers honour and prestige on the hunter (Coals *et al.*, 2020; Mole and Newton, 2021). For example, lion hunts were reported to be an important rite of passage for a boy becoming a man in Maasai culture. While these were banned in the 1970s, there are reports that they continue in some areas (Mole & Newton, 2021).

Coals *et al.* (2020) discuss the importance of continued vigilance and that further data collection needs to be done, particularly as these areas both have programmes which aim to reduce human killings of lions, so killings may be different in other areas.

Southern Africa

Wild caught

Surveys on the removal of parts from wild poached lions in Southern Africa have raised concerns that lions may be being targeted for the parts trade. One study conducted by Everatt *et al*. (2019) looked at lion deaths between 2011 and 2018 in the Mozambican portion of the Greater Limpopo Lion Conservation Unit, an area which includes Limpopo National Park. The study found evidence that over the area, 35% of lion deaths showed hallmarks of targeted poaching, and this figure rose to 61% of lion deaths in the Limpopo National Park with most targeted poaching actions against lions occurring between the Mozambique Limpopo National Park, and South Africa's Kruger National Park (Everatt *et al.*, 2019).

Further, since 2014 there are observations of an increase in both carcasses with parts removed, and the types of parts which have been removed (Everatt *et al.* 2019). Prior to 2014 the only parts removed from lions in Southern Africa were reported to be skin and meat, and these were thought to have been removed following human-lion conflict mortalities. However, since 2014 there has been the reported emergence of targeted killings with faces, heads, and paws reported to be the most commonly removed parts from lion carcasses and, since 2017, there is an increase in carcasses which had had their skeletons removed (Everatt *et al.*, 2019). Likewise in Mozambique an increase in body part removal has been observed even in suspected human-lion conflict cases (Africa Geographic, 2020),

In Malawi, lions are highly threatened with extinction from high human density, degradation of natural habitat, and intense poaching inside protected areas of both lions and their prey, mostly through indiscriminate snaring. Outside protected areas, human-lion conflict is high among local communities and lions are often eliminated through official operations of Problematic Animal Control (PAC), with an equivalent of 20% of the national resident lion population was eliminated by PAC operations between 2006 and 2010. Illegal killing of lions by people was mostly attributed to poaching, either unintentional in the quest of bushmeat (mostly through snaring) or intentionally in retaliation and for ritual purposes (Mesochina et al 2010).

Lion poaching in Zimbabwe and Zambia is significant and increasing (Paul Funston, Panthera, October 2021, pers. comm.), and the main source of lion products and commodities from these countries is from human-wildlife conflict, with the caveat that the cultural practice of hunting lions, human-wildlife conflict, and poaching are often hard to distinguish (Peter Coals, University of Witwatersrand, October 2021, pers. comm.). In Zimbabwe particularly, lions are often caught as bycatch in snares and indiscriminate hunting (Peter Coals, University of Witwatersrand, October 2021, pers. comm.). In Zimbabwe, the source of both lion and leopard products are from wild populations and while there are some captive lion facilities in Zimbabwe, they do not appear to be supplying big cat products into trade (Peter Coals, University of Witwatersrand, October 2021; Dr. Peter Lindsey, Lion Recovery Fund, Wildlife Conservation Network, November 2021, pers. comm.).

In Namibia, retaliatory killings are the main source of lions from the wild, which is exacerbated by dispersal, where juvenile male lions disperse and cause trouble in villages and on farms and are shot in human-wildlife conflict (Independent consultant for the Ministry of Environment and Tourism in Namibia, October 2021; Jo Tagg, Rooikat Trust, November 2021, pers. comm.). Namibia authorities are generally mindful of this practice and try to keep these animals out of trade. There are lions bred in captivity in Namibia, which could be a possible source trade in live lions, although this requires further investigation (Independent consultant for the Ministry of

Environment and Tourism in Namibia, October 2021; Jo Tagg, Rooikat Trust, November 2021, pers. comm.).

In South African muti markets, there is some evidence that lions found in the markets have been poisoned, which raises concern about the impact this would have had on the wider ecology of the area, as well as to the potential consumers (Vivienne Williams, November 2021, pers. comm.). There were similar concerns expressed about the levels of tuberculosis in the South African lion populations, contracted from their ungulate prey base, and the impacts which that may be having on the workers who process the carcasses for the export of bones to South Asia (Vivienne Williams, November 2021, pers. comm.). These concerns require further study.

These findings were similar to a TRAFFIC study which used community and expert interviews combined with data from the management authority to look at lion trade in Mozambique. Studies also suggested that there was targeted poaching of lions for parts, particularly teeth, claws and skins (Mole & Newton, 2021). It has been suggested that these targeted poaching incidents could be linked to current elephant and rhino poaching syndicates which have added lions to the animals which they trade (Everatt *et al.* 2019). Support for this theory comes from observations of 138 kg of rhino horn in a 2021 seizure also containing 3,100 kg of suspected lion bones in Viet Nam, as well as observations of elephant remains being used to bait lions (Everatt *et al.*, 2019). These studies have raised important concerns about poaching trends of lions, however there is also a pressing need for further monitoring and studies on this issue across range states of African lions (Everatt, 2019.; Coals *et al.*, 2020). According to the WiTIS database, 16 seizures involving lions were reported in Mozambique (2010-2021), and Mozambique reported 6 seizure incidents through the CITES Illegal Trade Report (2016-2021). In total, these incidents comprised 420 teeth, 397 claws, and four paws.

Central, and Western Africa

Wild caught

Lion carcasses found in Benoue National Parks complex in Cameroon have been found without teeth, tibias, and femurs during field patrols (Tadro Patrick, Garoua Wildlife School, November 2021, pers. comm.). The WiTIS database holds records on eight seizures involving lions in Cameroon, totalling 35 teeth, 10 skulls, and 3 skins.

Southern Africa

Captive bred – legal trade

There are more than 200 lion farms in South Africa, with approximately 8,000-12,000 lions kept in captivity (Imray, 2021). Most captive sourced lion parts are from the captive trophy hunting industry, also called ‘canned’ hunting, particularly in South Africa. For trophy hunting, lions from captive sources are estimated to account for at least 95% of trophies from successful hunts (Williams *et al.*, 2015). In the captive hunting industry in many cases the cubs are removed from their mothers to allow the female to produce more cubs more quickly, and then are raised by paying “volunteers” and for photographic experiences. When the cubs outgrow their use in the tourism industry they are sold to land owners who may breed them or raise and market them for ‘canned’ hunts (Funston *et al.*, 2016), where for around a third of the price of a wild hunt, a hunter can hunt the animal in an enclosed space (Funston *et al.*, 2016). Here, customers will receive e-mail brochures with photos of each lion, and they can choose one of them as the

target they choose to hunt. Prices range from USD88,000 to USD380,000 depending on the size and quality of the lion's mane (Sina, 2019).

The parts from these hunts are then often exported for further profit particularly in the bone industry (Funston *et al.*, 2016). Prior to lifting the lion bone export quota in 2019, income derived from live sales for trophy hunting and actual hunting drove the industry, with sales from lion parts a secondary income stream (Williams *et al.* 2021). Trophy exports of captive-bred lions were reported by South Africa (7,179, importers reported 3,392), and captive-bred skeleton exports totalled 6,219 (importers reported 2,590) (Table 7). While the trade in skeletons and trophies are of similar magnitude over the whole period 2010 - 2019, it is unclear whether these skeletons may be sourced from the same individuals that were traded as trophies.

There are many challenges to estimating the number of animals entering the trade from the captive trophy hunting industry. One source of information in South Africa is the professional hunters who record completed hunts in professional hunting registers. However, between 2004 and 2010, 1,138 more trophies were exported than the number of lions reported to have been hunted, leading to concerns about the transparency of this type data (Williams *et al.*, 2015).

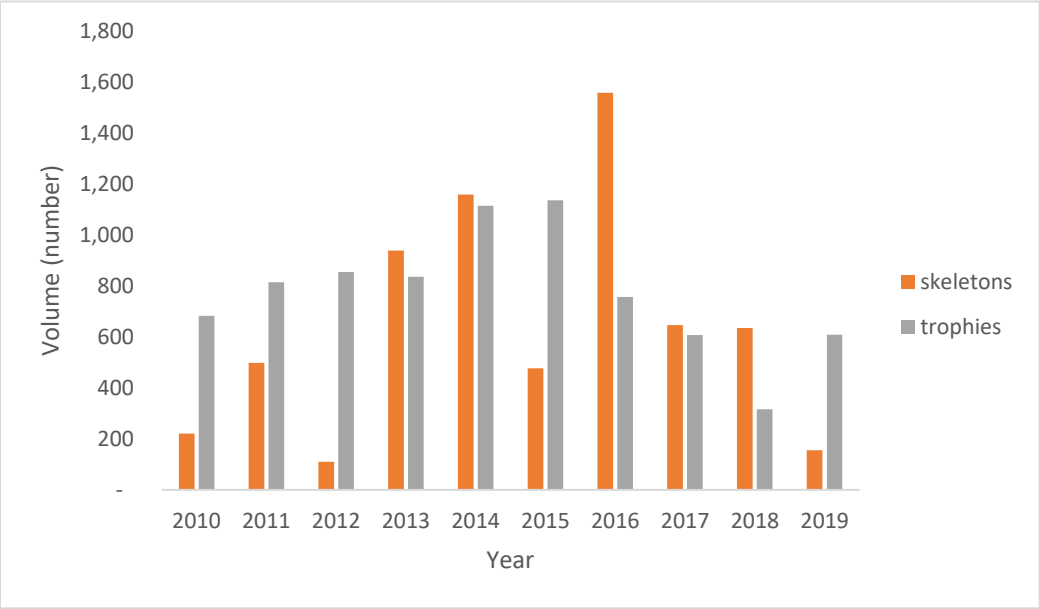

Figure 22: Direct captive-bred lion (*Panthera leo*) skeleton and trophy exports reported by South Africa, (Source: CITES Trade Database)

The high price of raising a lion to maturity, coupled with the very high potential income gained of a lion sold for hunting meant that the bones were traditionally likely have been a by-product of the industry, rather than the lion being farmed specifically for bones (Williams *et al.*, 2015). Juveniles and females, which are no longer needed for breeding, may also be culled for their bones (Williams *et al.*, 2015). According to the CITES Trade Database, Viet Nam reported direct imports of 2,619 lion skeletons (3,210 reported by exporters) between 2010 - 2019. Of these, 2,558 were reportedly imported from South Africa (predominantly captive-bred) and 61 from Namibia (all wild-sourced). Thailand reported imports of 2,910 wild-sourced

skeletons and 135 captive-bred skeletons from South Africa, of which South Africa reported exporting 370 captive-sourced skeletons and 14 wild-sourced skeletons.

Additionally South Africa reported exporting a total of 2,725 lion skeletons to Lao PDR, the majority of which was from captive-bred lions. South Africa reported that all trade in skeletons was exported for either commercial (6,139) or hunting purposes (258). In addition to skeletons reported by number, Viet Nam reported imports of 1,080 kg of skeletons (exporters reported 540 kg) and South Africa reported 480 kg to Lao PDR (this was not reported by Lao PDR).

	Reported by	
Importer	Exporter	Importer
Lao PDR	2,564	
Thailand	370	135
Viet Nam	3,155	2,445

Table 7: Direct trade in captive-bred lion (*Panthera leo*) skeletons from South Africa, reported by number (*Source: CITES Trade Database*).

According to Williams *et al.* (2021), exports of lion skeletons from captive sources to Southeast Asia has been increasing, going from approximately 50 in 2008 up to an estimated maximum of 1,771 in 2016 (Williams *et al.*, 2015).

CITES Trade Database shows that exports of captive-bred lion skeletons from South Africa to southeast Asia (only Lao PDR, Thailand, and Viet Nam) peaked in 2014 and 2016 according to South African annual reports (Figure 23) and appears to be in decline since 2016. This decline coincides with the CITES annotation on exports at the 17th Meeting of the Conference of the Parties, establishing a zero export quota on lion exports (Johannesburg, 2016), which exempted trophy hunting.

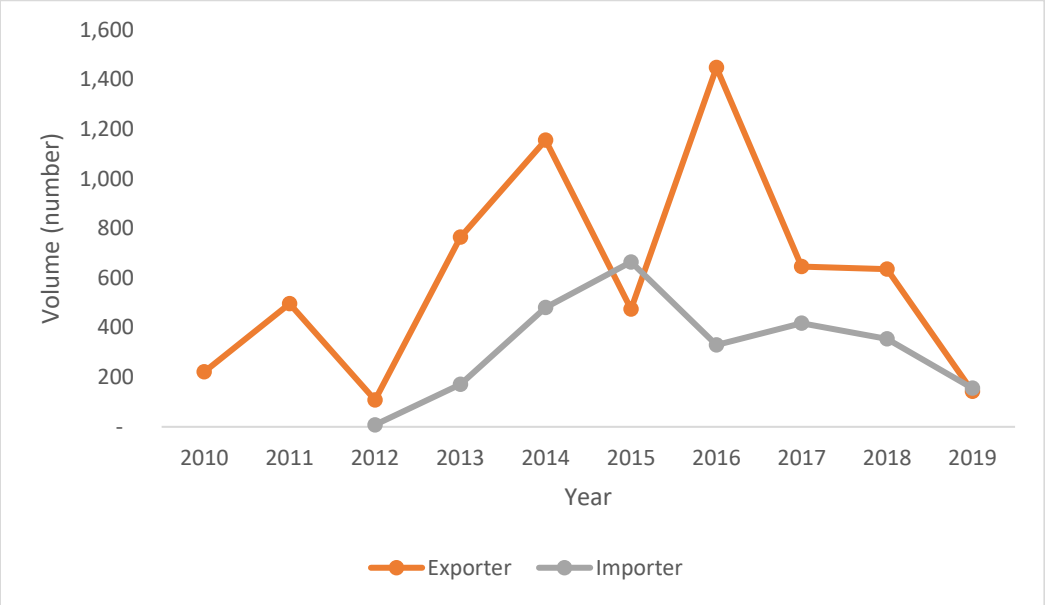

Figure 23: CITES trade in lion (*Panthera leo*) skeletons from captive-bred lions from South Africa, reported by importers (grey line) and exporters (orange line). Importers include Lao PDR, Thailand, and Viet Nam, exporter was exclusively South Africa (*Source: CITES Trade Database*)

However, a large seizure in Viet Nam in 2021 of 3,100 kg suspected lion bones (80% of all lion bones reported by weight seized from 2010 - 2021, according to the WiTIS database and ITR) coincides with South Africa's 2019 suspension of its lion export quota, possibly from captive breeders trying to offload stock after the suspension.

Compliance to the lion export quotas in South Africa is implemented by Department of Environment, Forestry and Fisheries (DEFF). For a detailed analysis of the process see Williams *et al.*, 2021. Part of this process requires skeletons to be genetically tested and weighed, and then reweighed before export, and a subset of skeletons to be genetically retested before export. There is some evidence that this forensic approach can be successful in detecting laundering, as in 2018 a tiger skeleton was detected being traded as lion skeleton (Williams *et al.*, 2021). This highlights the importance of genetics in detecting illicit activity in supply chains. However, improvements to this process have been suggested. For example, Williams *et al.* (2021) highlighted a need for consistency in factors like processing and packaging if using weight to detect compliance, as well as a need to consider the possibility of traders reconstituting skeletons from multiple animals (Williams *et al.*, 2021). Lion traders in South Africa were caught using various illegal methods to bypass the South Africa export quota. One of these was processing lion carcasses into consumer-use products, like bone glue 'cake' (Leach, A. 2021).

Lion trade to Asia has created a pressure on the wild lion population in South Africa where due to the cost of feeding and care, and increasingly captive lions are also poached to meet this rising demand. Limpopo province in South Africa is known as the emerging lion poaching hotspot of captive lions (Leach, A. 2021).

In 2021, the South African High Court judgement ruled that the 2017 and 2018 annual lion bone export quotas were "illegal and constitutionally invalid" because the government ignored the welfare of captive animals. The ruling does not end bone trading nor captive breeding, nor does it prevent the government from setting quotas in the future; but it requires officials to consider animal welfare issues when making these decisions (Tencent News, 2019).

Trophy hunting across Africa

Tanzania's trophy hunting quota was reduced from 165 lions set from 2008 to 39 lions set from 2015 (Benyr *et al.*, 2017). The decrease in the number of lions hunted for trophies in Tanzania declined from 52 in 2012 to 27 in 2017 (annual average: 40 lions) which has been attributed to restrictions on the age of lions that can be hunted, and regulatory changes in major importing destinations, namely the USA (58% of lion trophy hunters are American) and the EU (Outhwaite, 2018). In West Africa, trophy hunting is allowed in Benin, Burkina Faso, and Senegal (Chardonnet *et al.*, 2005), with an annual average harvest in the W-Arly-Pendjari (WAP) ecosystem by Benin and Burkina Faso of approximately 15 lions together between 1999 and 2014 (Bouché *et al.*, 2016). The wild population in Senegal, (Henschel *et al.*, 2014), is not considered large enough to support trophy hunting (Outhwaite, 2018).

In Central Africa, trophy hunting is permitted in Cameroon, Central African Republic and Chad, and each year trophy hunters harvest on average 17 adult lions among them (Chardonnet *et al.*, 2005, Mésochina *et al.*, 2010). Trophy hunters in West and Central Africa are mostly European, and take home many of the body parts (skull, bones, skin, teeth, claws) although local buyers are known to purchase lion products directly from professional hunters and trackers for local uses, e.g. in Benin (Sogbohossou, 2006; Othwaite, 2018).

South Africa accounted for most of the lion trophy exports from wild sources (470) from 2010 - 2019, and nearly all the captive lion trophy exports (7,250) in the same time frame (see Tables 8 and 9) (Williams *et al.*, 2015).

	Reported by	
Exporter	**Importer**	**Exporter**
Burkina Faso	31	303
Benin	3	18
Botswana	11	4
Central African Republic	7	41
Cameroon	5	28
Ethiopia	3	1
Kenya		2
Mozambique	122	93
Namibia	101	126
United Republic of Tanzania	439	194
South Africa	1,830	470
Zambia	159	247
Zimbabwe	399	215
Total	**3,110**	**1,742**

Table 8: Total direct trade of lion trophies from wild sources (source codes W, U, R, and unreported), 2010 - 2019, reported by number (*Source: CITES Trade Database*).

	Reported by	
Exporter	**Importer**	**Exporter**
Belgium	2	
Canada	4	
France	7	
Namibia	1	1
Saudi Arabia	2	
United Republic of Tanzania	3	
United States of America	1	
Unknown	5	
South Africa	3,416	7,250
Zimbabwe	2	
Total	**3,443**	**7,251**

Table 9**:** Total direct trade of lion trophies from captive sources (source codes C, D, and F), 2010-2019, reported by number (*Source: CITES Trade Database*)

In trophy hunting of wild sourced lions, it is common practice to destroy any parts of the lion carcass that are not to be taken as a trophy (including bones) in the field, and some countries have requirements for dealing with the body parts that are not exported (Outhwaite, 2018). For example, in Zambia the bones are to be destroyed by burning, in Zimbabwe everything should be destroyed except the skin, and in Tanzania, hunting operators are required to conduct inventories of lion (and leopard) bones, so they do not enter illegal trade. However, in some cases these "by-products" of wild hunts do seem to enter domestic or international trade (Outhwaite, 2018).

Asia

With a former range spanning from Turkey across Asia, Asiatic lions are only currently found in the wild in the Gir Forest, India, numbering in the hundreds. The population is listed in CITES Appendix I, and in addition to trade it is threatened by habitat loss and human encroachment (ZSL, 2021).

According to a big cat expert at WWF Pakistan, wildlife laws fall under provincial jurisdiction and as such, across most of the country, wildlife breeding in general and sale is allowed for entertainment and commercial purposes. Individual ownership is allowed and while breeding facilities are required to be registered with authorities, many are not and there is weak monitoring of sales. Reports of lion auctions from zoos' surplus lions and government auctions do not include a track of sales or transfer of ownership and many lions are exported to China, with lions and pumas being sold together (Uzma Khan, WWF Pakistan, October 2021, pers. comm.). Lion skins and trophies are used for decoration to display wealth and power, to a lesser extent fat is used for *Hakim* traditional medicine practices, and parts are used for as aphrodisiacs. These are bred in country from private sources (Uzma Khan, WWF Pakistan, October 2021, pers. comm.).

Lions are captively bred in China, and most of the trade of lion products within China is considered to be legal since the lions on Chinese farms were imported legally some years ago and have been raised and bred in China's facilities legally for many years (Anon., China, November 2021, pers. comm.). China zoos and circuses also raise and breed lions, and as with tigers, lions that die in captivity may be broken down for parts and sold for profit (China News, 2016). The Chinese government has specifically approved the trade of some lion products, such as lion bone wines, but products such as lion teeth, claws, and bone have not been specifically approved and may be illegal to sell for commercial purposes. There is a perception that international trade in lions has been well controlled and that imported lion products are likely legal, although as there appears to be little to no market for products labelled "lion" in China, and it appears that lion products are mostly relabelled as "tiger" products to meet Chinese demand (Anon., China, November 2021, pers. comm.).

Trade routes

Lion cubs sourced in Ethiopia follow a similar trade route to those of cheetahs shipped via Ethiopia, transiting through Somalia or Djibouti. Lion cubs sourced illegally appear to follow a similar trade route to those that are sourced legally. Those lions sourced from Somalia transit through Ethiopia, possibly onto Yemen, then onward to the Gulf states for the skin or pet trade (Louisa Musing, TRAFFIC, November 2021, pers. comm.). Mozambique or Tanzania were often sources of lion for the lion trade, which transit through Kenya and Europe, while Viet Nam, China, and Lao PDR were identified as consumer countries (Louisa Musing, TRAFFIC, November 2021, pers. comm.).

Southern African lions destined for Asia are often sourced from South Africa, before transiting through Lao PDR or Viet Nam for consumption in mostly China or Viet Nam. Lions are transported often by tiger farms through shell companies who have either obtained CITES permits, or who facilitate trafficking (Anon., Lao PDR, November 2021, pers. comm.).

The role of consumer countries

East Africa

Coals *et al.* (2020) suggested that most trade of wild sourced lion parts in Eastern Africa were consumed locally as traditional medicine, or used for cultural practices (Coals *et al.*, 2020). From East Africa there appeared to be trade primarily for pets and traditional uses. For the pet trade, occasionally lion cubs were reported to be traded from East Africa to the Gulf States taken as cubs from the wild (Anon., Somalia, October 2021, pers. comm.). CITES Trade Data shows that while from 2010 - 2019, 115 live lions were reported as direct imports by the UAE (123 according to exporters), and 15 by Qatar (9 according to exporters), this only accounts for a relatively small number of the approximately 1,860 live lion imports that were reported by exporters during that time (exporters reported 3,364).

For traditional use however there appeared to be a wider use of lion parts. Mole & Newton (2018) identified international trade and cultural uses of lion parts; fat was used at a local level, possibly regional, to put on fences, for example, to keep bush pigs away, or rendered into oil to cure rheumatism and other ailments as part of traditional healing practices. The throat of a lion is believed to have spiritual value that allows the user to be listened to and respected. Teeth and claws were used locally as a status symbol and internationally was sold in the trinket trade. Skin was used locally as a status symbol, and the paws and tail had local celebratory use for the one who killed the lion (Louisa Musing, TRAFFIC, November 2021, pers. comm.).

A survey in Malawi (Shelley, et al 2015) noted that lions may be intentionally poached for cultural, commercial or medicinal purposes, and that cultural killing occurs mainly in Mzimba District, where Zulu people (originating from South Africa) use lion skin as a symbol of power during dances. The survey reported that lions may be killed for medicinal purposes across Malawi, but that more often, lions were unintentionally caught in wire snares set for ungulates. An illegal wildlife trade review report in Malawi documented that the causes of poaching included for medicine (11.9%), traditional ceremonies (13.6%) and witchcraft (8.5%) (Shelley W, et al 2015).

Southern Africa

In South Africa there is some traditional domestic use of lion parts. An independent investigator highlighted having seen teeth and claws in South African muti markets, suggested to have been taken from 'canned' hunting, as well as amulets and pendants, which were reported to be traded to China (Vivienne Williams, October 2021, pers. comm.). In recent years, the investigator also found reports of availability of lion parts, including skins, bones, and teeth in South African muti markets where this had not previously been seen (Vivienne Williams, October 2021, pers. comm.). Teeth and claws appear to be the main commodities in Mozambique (Sam Ferreira from SANParks, November 2021, pers. comm.).

In Zambia and Zimbabwe, lion skin is used in traditional attire mainly for cultural celebrations and ceremonial activities (Paul Funston, Panthera, October 2021, pers. comm.). For example,

the Barotse tribe in Zambia use lion mane in their hats. In Namibia, where lion fat is used for muti trade largely in the North-East of Namibia (Zambezi region), skin is also traded opportunistically for use as rugs and ornaments (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021; Jo Tagg, Rooikat Trust, November 2021, pers. comm.). Within Zambezi in the Kavango-Zambezi region and Zimbabwe it is mostly claws, skins and teeth which are being used locally for traditional medicine and witchcraft related activities, although some fat was also in trade (Roseline Mandisodza-Chikerema, Chief Ecologist from Zimbabwe Parks and Wildlife Management Authority, September 2021; Youngs Mapenzi, Customs Official at the Namibia Revenue Agency, November 2021, pers. comm.).

Central, and Western Africa

In Central and Western Africa, teeth, skulls, bones, claws, paws, skins, tails, and bile or urine is used for a variety of purposes, but mainly for traditional medicine, magic rituals, decoration. Cultural and traditional belief plays an important role in lion killings and trade in West Africa where, for example, lion bones are soaked in water and drunk by men to impart virility and attract happiness (Abba Sonko, CITES Management Authority in Senegal, September 2021, pers. comm.). Lion is also associated with power and some kings are called *Zaky* (*meaning lion*) and *Ogboaw agu (killer of Lion)* as a traditional title given to somebody who has killed a lion which creates a sense of emulation, pride, and exaltation (Dr Joseph Onoja, Nigeria Conservation Fund, October 2021, pers. comm.).

In Nigeria, there has been an increase in the trade of live lions for use as pets in the last two years, intended to reflect wealth and power for rich and influential people in Nigerian society (Okuguna Matthew, Nigeria CITES MA, November 2021, pers. comm.). The live lions are thought to originate either in Cameroon or South Africa (Okugina Matthew, Nigeria CITES MA, November 2021, pers. comm.).

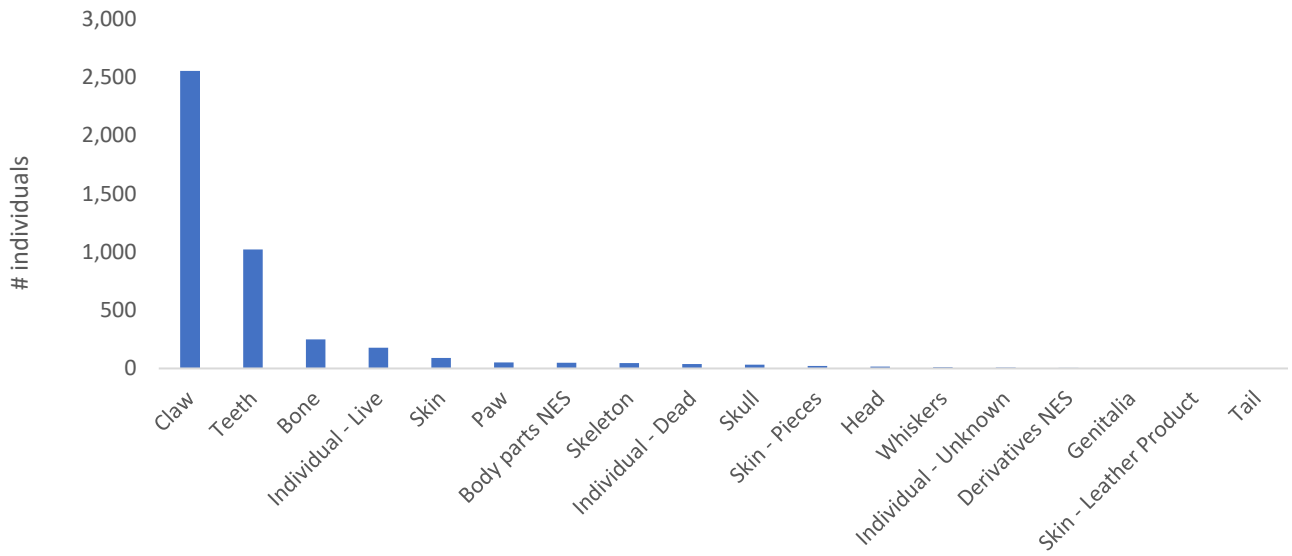

Figure 24: Lion commodities seized where number of individuals was reported 2010 – 2021 (*Source: WiTIS*)

Asia

In recent years, due to the increasing scarcity and price of tigers, traders in Asia have begun to replace tiger products with lion products (Outhwaite, 2018). Viet Nam and Thailand have been large importers of lion skeletons and bones from 2010 - 2019, both from wild and captive sources, according to the CITES Trade Database. In 2012 - 2016, Viet Nam reported imports of 1,080 kg of captive-bred lion skeletons for commercial purposes, in addition to 1198kg of bones; 739 kg was from captive-bred sources and for hunting purposes and 459kg was reported as captive-bred and for commercial purposes. South Africa reported bone trade as wild-sourced and for hunting purposes, reporting exports of 739 kg bones to Viet Nam in the same period and 540 kg of captive-bred skeletons for hunting purposes. In addition, Viet Nam reported a total of eight captive-bred lion bones from South Africa in the period 2010 - 2019 (South Africa reported a total of 740 lion bones, the majority was captive-bred).

While Lao PDR did not report any lion bone imports from 2010 to 2019, South Africa reported exports totalling 2,396 lion bones to Lao PDR from 2010 - 2017. The majority (>99%) were exported for commercial purposes and from captive-bred lions (90%), and the rest was wild-sourced (10%).

In 2010 - 2019, Thailand reported imports of 153 lion bones from South Africa for commercial purposes, 133 of which were from captive-bred lions and 20 from wild lions. South Africa reported exporting 67 captive-bred lion bones to Thailand in the same period. Thailand did not report bone imports by weight.

In 2019, Viet Nam imported 155 skeletons and Thailand imported one skeleton. However, recent large-scale seizures of 3,100 kg of suspected lion bones in Viet Nam shows that trade in lion bones and skeletons persists, despite a cessation of lion bone quotas.

In Viet Nam, evidence from online surveys shows a likelihood that lion bones, teeth, and claws are relabelled as tiger as there is simply not a demand for items listed as lion in Viet Nam, and a survey of online commerce platforms in Viet Nam in 2021 showed a total of five pieces labelled "lion" (3 teeth, 2 skins) in four advertisements. Importers of lion products are typically people who own tiger farms, however it was suggested that traders choose to import lions because it was less expensive than raising lions. Lao PDR is less of a consumer country for wildlife-based traditional medicine and jewellery, so lion parts likely go to Viet Nam, Lao PDR, and China (Anon., November 2021, pers. comm.). Targeted lion poaching events point to Viet Nam as the main source of demand for bones, teeth, and claws (Everatt *et al.* 2019) and lion bones, teeth, and claw trades in Southeast Asia are often merged with supplies of tiger and are used for TM and other traditional practices like tiger bone glue (Debbie Banks, EIA, November 2021, pers. comm.).

According to seizure data held in WiTIS and reported by CITES Parties in the ITR, lion bones were the highest seized commodity by weight from 2010 - 2021, and 349 lion bones were reported in the same time period, 15 of which were reported through the CITES ITR as well as 47 skeletons, 40 of which were reported by CITES Parties in the ITR (Figure 25).

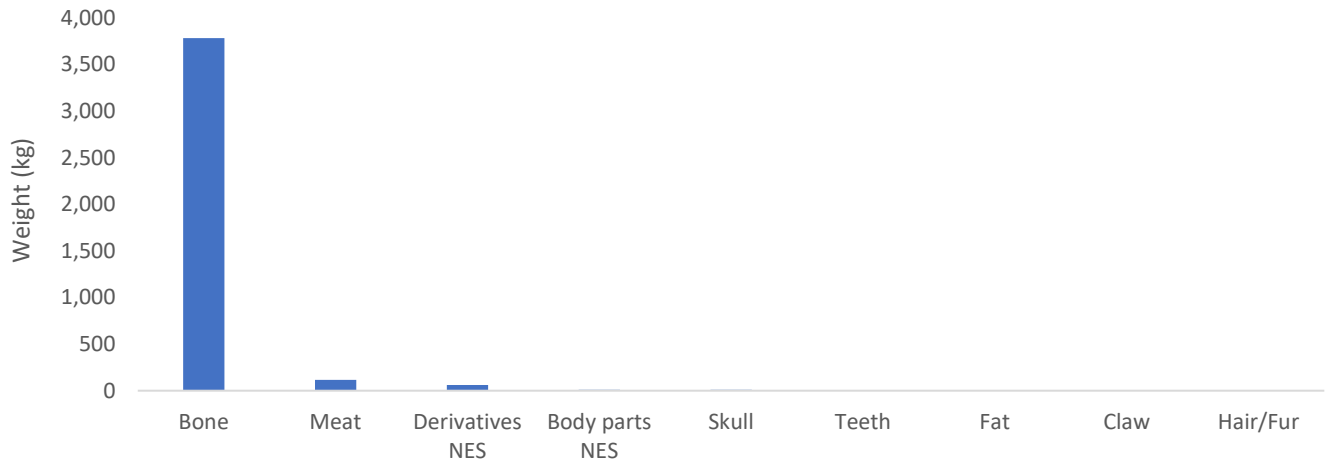

Figure 25: Lion commodities seized where weight (kg) was reported 2010 – 2021 (*Source: WiTIS*)

There is limited seizure data that shows the direction of travel of wild lion parts from Southern Africa. Some consumption is thought to occur in-country with some demand for medicinal or traditional ceremonial products, as well as demand from tourists (Everatt *et al.* 2019).

Other Regions

Between 2010 and 2019 according to the CITES Trade Database, the USA was the second largest global importer of lion trophies after Brazil, and the third largest importer of lion bones. The USA reported imports of 151 lion bones, 145 from South Africa (80 captive-bred, 57 wild,

eight from seizures/confiscations) and six from Tanzania (not reported by Tanzania, from seized and/or confiscated sources). South Africa reported exporting 757 captive-bred lion bones and 34 wild-sourced bones to the USA. Additionally, Zimbabwe reported exports of 45 wild-sourced lion bones to the USA which were not reported by the USA. In the USA, lion bone imports may be made into TCM products.

As well as a significant legal trade, seizure data from 2000 - 2018 (Outhwaite, 2018) showed evidence of an illegal trade involving the USA: 664 items were seized in the USA based on the available data the USA seized the third highest quantity (after Viet Nam and Tanzania). However, the dataset of seizures used in this study is skewed towards countries that report seizures to CITES for the CITES Illegal Trade Database and/or who publicise seizures in the media: the USA does all three. Therefore, it cannot be concluded that the USA has the third largest market for illegal products (Outhwaite, 2018).

Lions are also found in trade in South America, where seizures were mostly of live lion, with lots of seizures from zoos without the correct documents, from private houses where they were being kept as pets, as well seizure of cubs being smuggled through airports. While live trade made up the bulk of the trade, there were also reports of some seizures of skins (Musing, TRAFFIC, November 2021, pers. comm.).

Intra-African trade

Countries that see the highest number of wild lions being hunted illegally for body parts most are either next to South Africa or in the case of Tanzania, on the eastern seaboard and easy conduits for the export of body parts to Asia. South Africa and Mozambique followed by Tanzania may be the most likely source countries of many lion products with Zimbabwe, Zambia, Botswana, Mozambique, and Angola highlighted as potential transit countries. Senegal, along with Asian counties Viet Nam, Lao PDR, and China, where highlighted as consumer countries (Paul Funston, Panthera, October 2021, pers. comm.).

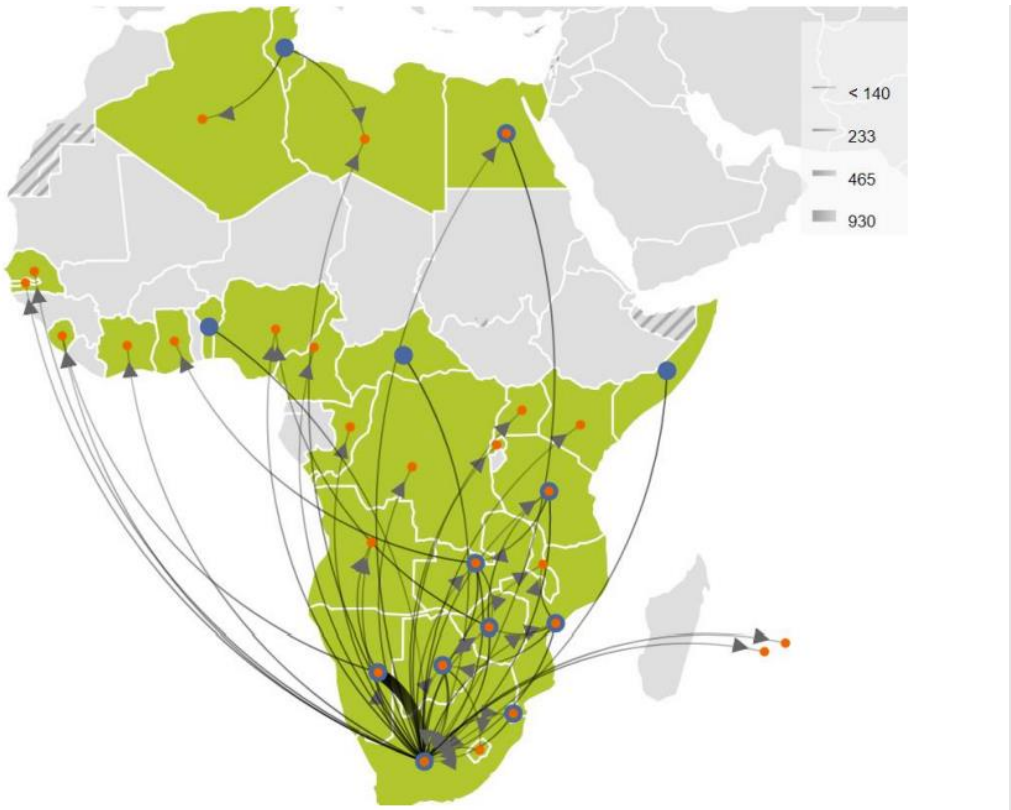

Figure 26: Trade routes for lion products within Africa (reported as number of individual items, reported by exporting country, direct exports only) 2007 – 2016. Blue circle= exporting country, orange circle = importing country, and orange and blue circles = both importing and exporting country (*Source: CITES Trade Database*; Outhwaite, 2018). In the CITES Trade Database from 2010-2019, South Africa reported imports of 175 bones from Tanzania, 14 from Zimbabwe (Zimbabwe reported 42), and one from Zambia (Zambia did not report this trade), all of which were wild-sourced and for hunting purposes.

For lion, (leopard, and cheetah) Namibia is a source country with Angola/Zambia as likely transit and destination countries. This is likely due to the Kavango-Zambezi region where people have local family connections across the border who they can trade with. The geography of the area and porous borders lend themselves to this cross-border trade (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.). While products are transported into Namibia either by air or by land, more often a land border would be used as it is easy to move from neighbouring countries through unmanned entry points and big cat products are most often concealed or hidden under the boot of the car or in luggage (Youngs Mapenzi, Customs Official at the Namibia Revenue Agency, September 2021, pers. comm.). A guidebook was recently created by Namibian Customs to help border guards identify big cat parts and new methods of transport (Youngs Mapenzi, Customs Official at the Namibia Revenue Agency, September 2021, pers. comm.).

Skins are often also used in cultural regalia, and claws are used in East Africa while teeth removal is a more recent phenomenon. Often, skin pieces and claws are removed after cultural lion hunting as a show of bravery, and similarly, zootherapeutic and magic/spiritual associations with strength and bravery throughout Southern and East Africa. The curio trade tends to draw regional tourists from South Africa, Kenya, and elsewhere. There is a broad spectrum of drivers

and complicated trade chains of lions within Africa (Peter Coals, University of Witwatersrand, October 2021, pers. comm.)

In Uganda, the lion population in Queen Elizabeth National Park is under threat by local demand for body parts, with evidence on carcasses of removal of skull bones and paws (Olukya, G., 2021), and there is evidence of local trade in skin, bones, and claws (WildAid, 2019).

Evidence in linkages in trade between species

Lions and tigers

Trade in lion and tiger specimens appear to be linked and other big cats are now also increasingly being used as substitutes for tiger bones, teeth, and claws, which is being driven by demand in Asia (Paul Funston, Panthera, October 2021; Jo Tagg, Rooikat Trust, November 2021; Sam Ferreira from SANParks, October 2021, pers. comm.). In addition to lions being relabelled as tiger for the Asian traditional medicine market, tiger has also been labelled as lion when exported from South Africa to dodge customs and minimise the risk of seizure and prosecution and maximise the transfer of product into a growing market (Peter Coals, University of Witwatersrand, October 2021; Paul Funston, Panthera, October 2021, pers. comm.).

In addition to tigers bred in South African captive lion facilities, there is also information about an increase in farmed lions in Southeast Asia, which are often reported to be kept in tiger breeding facilities (Coals *et al.*, 2020). There have also been instances where tiger and lion bone coming from legal captive-breeding facilities in South Africa have been seized in connection with the same organised criminal groups (UNODC, 2020).

In China and Viet Nam both tiger bone and lion bone glue are consumed, although in many cases lion bone is substituted for tiger bone and mislabelled as such for advertisement and sale, or as a fraudulent product which the consumer believes to be real tiger bone glue (Nowell, 2011). However, in both countries tiger bone glue is favoured over lion bone glue, and this preference is linked to the medicinal uses and value of tiger as well as their use value for protection, prestige, and gifts (Coals *et al.*, 2020).

Lions and other big cats

Products such as skins and fats from a variety of big cat species are being mislabelled as lion, and vice versa. Skins too have been substituted for lion skin, including those from caracal, other similarly coloured big cats, or even various herbivores (Peter Coals, University of Witwatersrand, October 2021, pers. comm.). The further down the trade chain one goes, it is thought the more likely it is that has been relabelled as something else, and there are linkages between lion, leopard, cheetah, and small spotted cats sold in markets for traditional medicine and curios (Peter Coals, University of Witwatersrand, October 2021, pers. comm.).

Lion cubs have been found in illegal trade to the Gulf States from East Africa, along with cheetah, leopard, and caracal cubs, although as cheetah are the highest valued of these big cats in the pet trade to the Gulf States, it is generally assumed that they are the likely target of poachers, with lions in this case captured opportunistically (Paul Funston, Panthera, November 2021, pers. comm.).

Between lions and other non-big cat species

Targeted poaching incidents for lions have been linked to elephant and rhino poaching syndicates which have recently begun to add lions to the animals which they trade (Everatt *et al.*

2019). Support for this theory comes from increasing observations of ivory seizures also containing lion parts (Carnow, S., 2020), as well as observations of elephant remains being used to bait lions (Everatt *et al.*, 2019).

An illegal wildlife trade review report in Malawi documented that causes of lion poaching include for medicine, traditional ceremonies, and witchcraft, and that wildlife parts that are commonly used for such purposes in addition to lion include, but are not limited to, felid and buck skins and tails, feathers, quills, hippo teeth and genitals, carnivore teeth and claws, elephant skin, toenail, and the tip of trunks (Jurisic, 2019).

Characteristics of illegal trade

Lions from otherwise possibly legal sources are winding up in illegal trade, mainly in Southeast Asia as mislabelled tiger products. For example, lions have been legally imported to China, Viet Nam, or Lao PDR with CITES permits, but often through false shell companies (Anon., Lao PDR, November 2021, pers. comm.). In addition, lions may have been smuggled to Viet Nam and Lao PDR after having been sourced from 'canned' hunting experiences in South Africa, in which sellers may turn lion/tiger bone into bone glue prior to transport so it can be registered as 'clear and black jellies'' for a gift for a family member (Lam Anh *et al.* 2020).

Laws around lion part ownership and transfer can be vague and confusing and legality may also differ between lion products, with live lion trade being mostly legal, and trade in teeth, bones, and claws, mostly illegal (Sam Ferreira from SANParks, November 2021, pers. comm.). Similarly, in Namibia, it is legal to shoot a lion if it threatens your life or your cattle, but if that human-wildlife conflict killing is not reported, then sourcing parts and products from the lion (also cheetah and leopard) will become illegal (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.). If the killing is reported, there is no clear protocol to deal with the carcass, putting the lion in a legal grey area, and in Namibia, products moving across even informal borders are considered illegal trade (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.).

A freelance academic at the University of Witwatersrand (October 2021, pers. comm.) and the Director of the Lion Recovery Fund, Wildlife Conservation Network (November 2021, pers. comm.) both considered the possibility that South African captive trade has stimulated or increased demand for wild products is very possible, but also has not been proven. The experts speculate that closure of the captive industry could also mean more demand for wild products, especially given Asian demand and laundering as tiger products, but this would remain to be seen (Peter Coals, University of Witwatersrand, October 2021, pers. comm.)

Since 2019, the European Union has banned the importation of lion and other big cats' products, except trophies, which may have prompted the closure of some safari companies, as European clients had been a large source of business. The European ban is reported to have had a positive impact on the recovering lion population and other big cats in Northern Cameroon, which has in turn led to a higher incidence of human-wildlife conflicts as young, inexperienced lions are driven closer to pastoralist communities and their livestock, and leading to a rise in retaliatory killings (Tadro Patrick, Garoua Wildlife School, November 2021, pers. comm.).

Impact of Covid-19

As each stage of a captive lions' lifecycle is commodified and the care and feeding requires money from tourism and trophy hunts to support large captive population, there are reports of lions in captive facilities starving to death or being euthanised due to lack of tourism funding. It is speculated that recent seizures of lion skeletons in Viet Nam and 3,100 kg of suspected lion bones are a by-product of these lion deaths (Louisa Musing, TRAFFIC, November 2021, pers. comm.).

Leopards (*Panthera pardus*)

Range Countries: Afghanistan; Angola; Armenia; Azerbaijan; Bangladesh; Benin; Bhutan; Botswana; Burkina Faso; Burundi; Cambodia; Cameroon; Central African Republic; Chad; China; Republic of the Congo; Democratic Republic of Congo, The Democratic Republic of the; Côte d'Ivoire; Djibouti; Egypt; Equatorial Guinea; Eritrea; Eswatini; Ethiopia; Gabon; Ghana; Guinea; Guinea-Bissau; India; Indonesia (Java); Iran, Islamic Republic of; Iraq; Kenya; Liberia; Malawi; Malaysia; Mali; Mozambique; Myanmar; Namibia; Nepal; Niger; Nigeria; Oman; Pakistan; Russian Federation; Rwanda; Saudi Arabia; Senegal; Sierra Leone; Somalia; South Africa; South Sudan; Sri Lanka; Sudan; Tanzania, United Republic of; Thailand; Turkey; Turkmenistan; Uganda; Yemen; Zambia; Zimbabwe

CITES Appendix: I (01/07/1975; see Resolution Conf. 10.14 (Rev. CoP16)

IUCN Status: Vulnerable (Assessed 2015, Stein *et al.*, 2020).

IUCN estimate of mature individuals: Unknown (Stein *et al.*, 2020).

Legal Trade

According to the CITES Trade Database, direct trade in leopards (*Panthera pardus*) from 2010 - 2019 mainly comprised trade in trophies (Table 10). Trophies were primarily wild-sourced (98% reported by both importers and exporters) and traded for hunting and personal purposes (>99%). South Africa was the only party reporting exports of captive leopards, reporting nine captive-bred leopards and five captive-born leopards. Namibia reported the most trophies (1,157, importers reported 1105) followed by Zimbabwe (751, importers reported 1,625) and Tanzania (608, importers reported 1501). In 2010 - 2019, annual trophy trade was relatively stable, with an average of 389 trophies reported by exporters and 582 reported by importers annually. The USA was the main importer of leopard trophies 2010 – 2019, reporting 2,929 trophies (exporters reported 2010). EU Member States reported 1,757 trophy imports (exporters reported 1080) over the same period, with France reporting 24%, Germany 18%, and Spain 13% of these trophies.

Skulls and skins were the second most traded leopard commodity in 2010 - 2019. Skulls were primarily wild-sourced and traded for hunting purposes (>99% both importer and exporter reported). They were mainly exported by Zimbabwe, reporting 615 exports (importers reported 161), followed by South Africa which reported 288 (importers reported 32), Tanzania (reporting 258, importers reported 91), and Mozambique (reporting 250, importers reported 68). The largest importers of leopard skulls were South Africa, reporting 189 skulls (exporters reported 126) and the USA, reporting 78 skulls (exporters reported 848). Similarly, direct leopard skin exports were mainly wild-sourced and for hunting purposes, primarily reported by Zimbabwe (552 reported and 93 reported by importers), Tanzania (270 reported and 65 reported by importers), Mozambique reporting 240 (importers reported 21), and South Africa reporting 201 (importers reported 23). The main importers included South Africa (101 skins imported, exporters reported 96), Canada (60 skins imported, exporters reported 15), EU Member States (56 imported, exporters reported 321), and the USA, reporting imports of 15 skins while exporters reported 742. Additionally, Oman reported exports of 50 wild-sourced leopard skins for scientific purposes in 2016 which was not reported by the reported importer, Great Britain.

Trade term		Importer reported	Exporter reported
Whole organism equivalent	bodies	57	37
	live	316	277
	skeletons	1	1
	skins	317	1374
	skulls	450	1495
	trophies	5,823	3,885
Parts and derivatives	bone carvings	2	
	bone pieces	2	
	bones	68	250
	claws	157	93
	derivatives	502	57
	feet		6
	fur product (small)	2	
	garments	3	2
	hair	31	20
	hair products	1	
	leather products (large)	1	
	leather products (small)	26	
	medicine	18	
	rug	5	5
	skin pieces	67	13
	specimens	5,741	4,795
	tails		12
	teeth	39	59
	unspecified		4

Table 10: Total leopard (*Panthera pardus*) commodities in direct trade reported by number in the period 2010 - 2019 (*Source: CITES Trade Database*)

Illegal Trade

From 2016 to 2021, 37 Parties reported a total of 288 leopard seizures through CITES Illegal Trade Reports, comprising over 3,021 items seized. Most seizures were reported by France (13%), followed by the UK and USA (10% each), Nepal (9%), and New Zealand (8%) (Figure 27). Derivatives, skin, and bones were reported in the highest volumes where reported by number, totalling 2,525 (94% of all items), 186 (6% of all items), and 164 (5% of all items) respectively (Figure 25). Meat was the highest seized commodity by weight, comprising 45kg in total, with negligible volumes of other items (Figure 29).

The WiTIS Database holds seizure information on 1,200 seizures between 2010 and 2021, comprising over 10,546 items across 56 countries. Seizures were most frequently recorded as

occurring in India (44%), followed by Nepal (8%), Gabon (6%), China and the UK (4% each) (Figure 27). Skin, claws, and derivatives were reported in the highest volumes, where reported by number, totalling 4,251 (40% of all items), 2,024 (19% of all items), and 1,875 (18% of all items) respectively. Bone was the highest number item by weight, comprising 208 kg in total, with smaller volumes of bile products (90 kg), meat (77 kg), and other items (Figure 29).

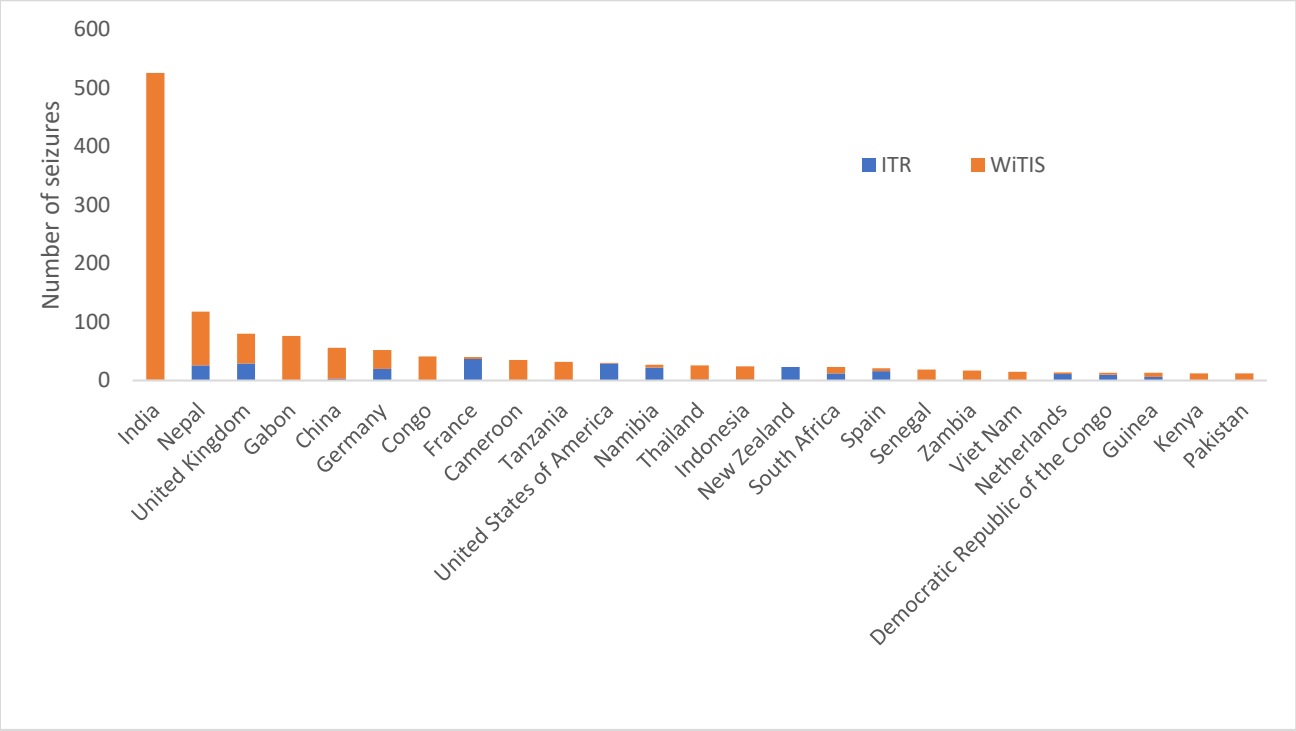

Figure 27: Top 25 countries of reported seizures of leopards (*Panthera pardus*) in ITR 2016 - 2021 and WiTIS 2010 - 2021 (*Source: WiTIS and CITES Illegal Trade Reports*).

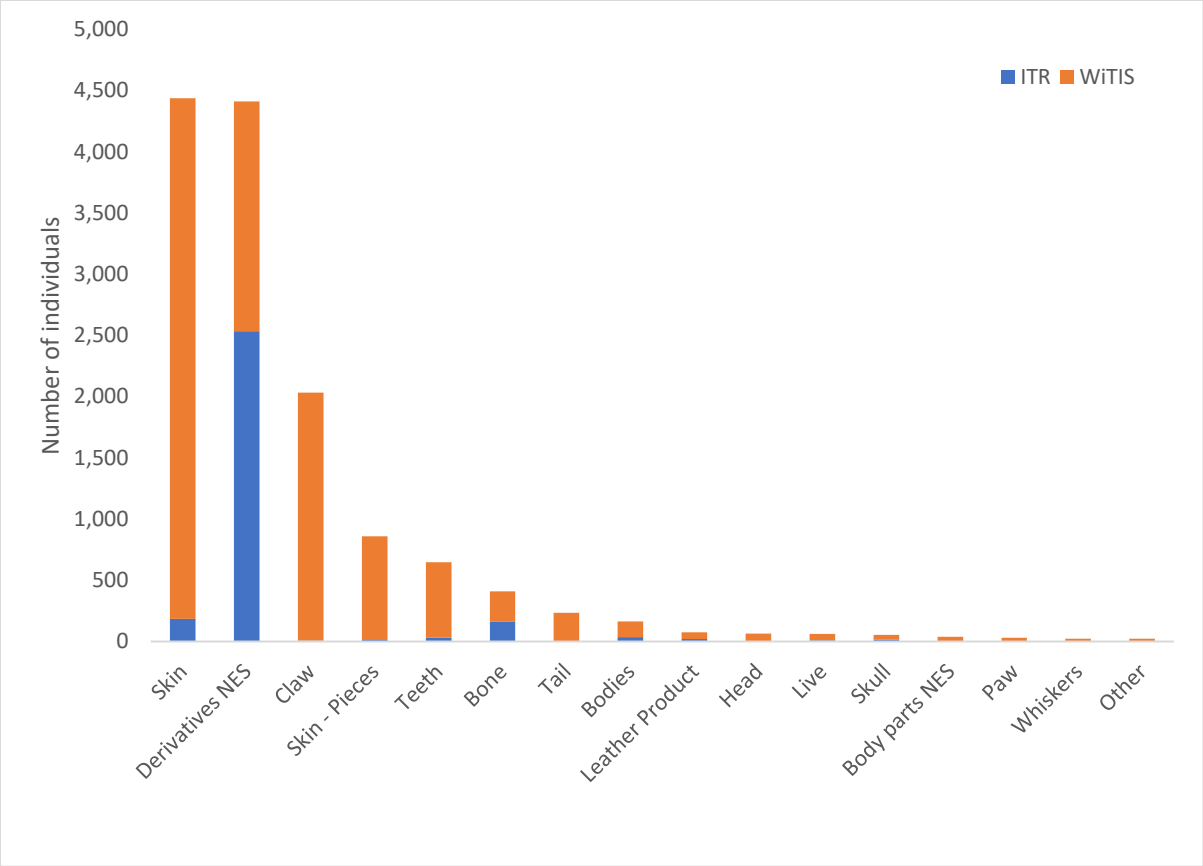

Figure 28: Leopard items seized as recorded in ITR 2016 - 2021 and WiTIS 2010 - 2021 where reported by number with 99% of seized items shown (*Source: WiTIS and CITES Illegal Trade Reports*).

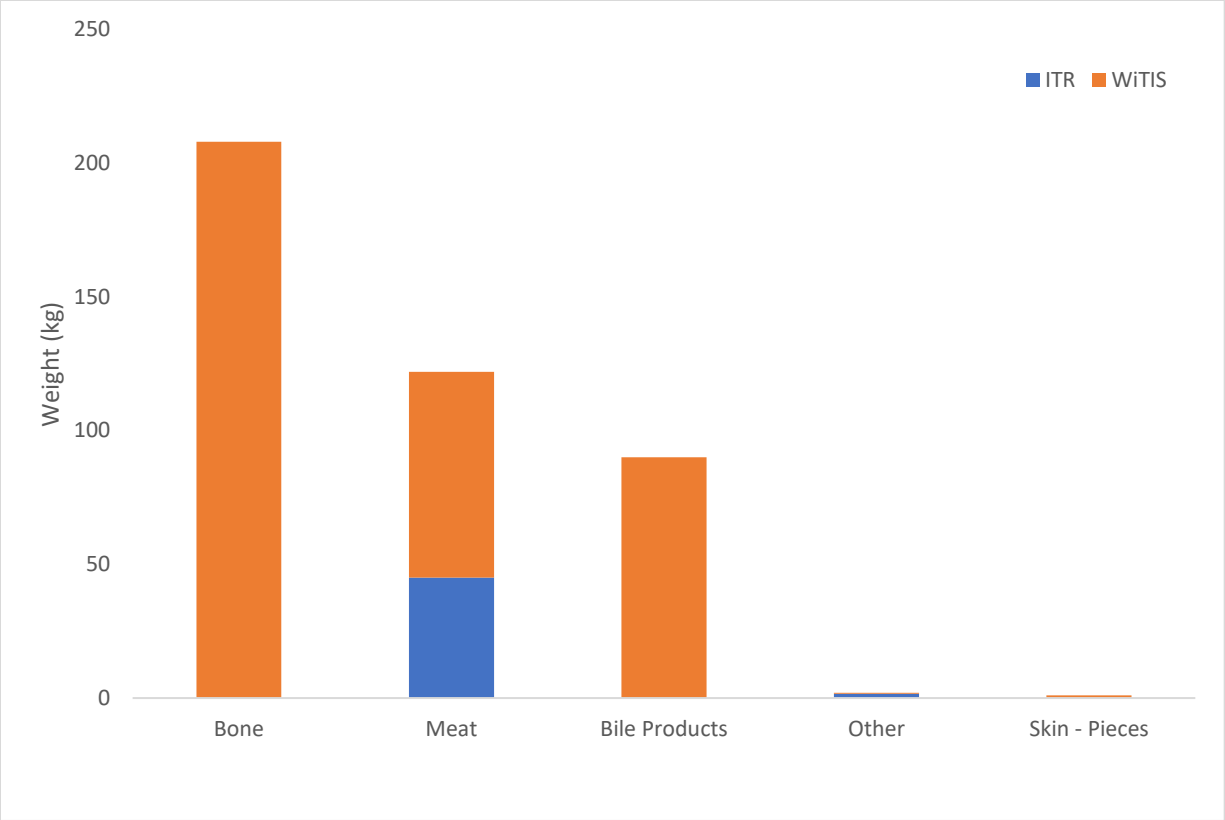

Figure 29: Leopard items seized as recorded in ITR 2016 - 2021 and WiTIS 2010 - 2021, where reported by weight with 99% of seized items shown (*Source: WiTIS and CITES Illegal Trade Reports*).

Role of source countries

While there are distinct subspecies of African leopards (*Panthera pardus pardus*) and Asian leopards (*Panthera pardus orientalis, P. p. tulliana, P. p. nimr, P. p. fusca, P. p. delacouri*, *P. p. melas*, and *P. p. kotiya*), CITES Trade Data and seizure reports refer more generally to leopards at the species level (*P. pardus*) making distinctions in trade for the purposes of this report impractical to characterise. Thus, this report reviews leopards at the *P. pardus* species level.

Africa

Leopards are most often caught from wild sources either as bycatch from wildmeat (snares), human-wildlife conflict (poisoned bait), or targeted poaching (firearms, baits, and snares). In Zambia there are anecdotal reports of targeted poaching for skins and in South Africa cage traps are set for leopards for their skins (Gareth Wittington-Jones, Panthera, November 2021, pers. comm.). In Namibia, human-wildlife conflict is the main source of leopard products (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.) and Mozambique, Zimbabwe, Zambia (lesser extent), Malawi and Tanzania (potentially) are likely sources for leopard products including leopard skins (Gareth Wittington-Jones, Panthera, November 2021, pers. comm.).

According to CITES trade data from 2010 to 2019, China reported direct imports of 66 leopard commodities that could be equated to a whole organism (exporters reported 57), mainly comprising live leopards and trophies, as well as low levels of skins, skulls, and bodies. The majority were sourced from South Africa. Over the same period, Viet Nam reported direct imports totalling nine live leopards (exporters reported five) from South Africa.

Asia

Leopards have become extinct in Lao PDR, Viet Nam, and Singapore. They are also on the verge of extinction in Cambodia and China (Li, 2020). There are currently less than 450 wild leopards left in China (Li, 2020). Importers reported trade from China between 2010 - 2019 in the CITES Trade Database; New Zealand and the USA reported 476 individual units and 13.05 kg of derivatives reported a small amount of medicine. This appeared to have been confiscated upon import. Leopard parts and derivatives were also reported as sourced from seizures and/or confiscations by New Zealand and the USA from Cambodia (claws, hair), Viet Nam (claws, medicine), Thailand (skin pieces), and Malaysia (derivatives) in the same timeframe.

India and Pakistan do not appear to be source countries for legal trade in leopards, neither country reported direct trade in this species according to the CITES Trade Database. Since 1999, India has suspended all trade in wild-sourced CITES-listed animals traded for commercial purposes (CITES Notif. No. 1999/39; CITES Notif. No. 2018/031). Other CITES Parties did report trade in pre-convention leopard commodities that originated in India, totalling 11 units over 2010 - 2019 (exporter reported, importers reported three), comprising skin pieces (4), skins (3), and trophies (2) among other commodities (all exporter reported). Leopard commodities originating from Pakistan totalled eight units over the same period, with exporters reporting seven skins and one scientific specimen (importers did not report this trade). Only the specimen originating in Pakistan was wild-sourced, all other trade originating in India or Pakistan was reported as pre-convention. Out of 288 records for 37 countries in ITR, India reported only one leopard seizure and Pakistan none. However, out of 1,200 leopard seizures in WiTIS featuring seizures from 56 countries, India was reported to have seized the most leopard products (Figure 27), with 525 reported, 510 of which were for items originating from within the country.

In addition to trade, leopards in Asia face threats from habitat loss and human-wildlife conflict (WCS China, November 2021, pers. comm.).

The role of illegal trade routes

Mozambique (Gareth Wittington-Jones, Panthera, pers. comm.) and Uganda were identified as potential transit countries, with Uganda cited as a transit and logistics hub for wildlife trafficking, including illegal trade in leopards and other big cats (Rossi, 2018).

The Angola and Zambia's Kavango-Zambezi region is also a transit point, as porous borders and regular human foot traffic allow people moving across the border to walk across and poach wildlife and then return, providing mostly for regional trade. Leopard deaths in this region are usually caused by human-wildlife conflict, and sellers will look for opportunities to sell these products while middlemen look for easy access to border areas (Karen Nott, Independent

consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.).

Leopard cubs smuggled from East Africa to the Gulf States pet trade were likely sourced from Somalia and possibly other parts of Ethiopia. Leopard skins are collected in Central African Republic then transit to Chad before being sold in Sudan and in Nigeria (Abdramane Chaibo Hamid, Director in charge of wildlife and protected area of Chad, September 2021, pers. comm.).

There may be a trade flow from North-East Namibia to Angola and Zambia and then on to Southeast Asia, in which Nigeria is also a source and transit country, with Viet Nam and China as destinations (Nigeria Federal Ministry of environment, November 2021; Jo Tagg, Rooikat Trust, November 2021, pers. comm.).

Other trafficking routes include from Mali, Burkina Faso, or Niger and transiting through Senegal or Nigeria via road to ports or airports, where large quantities of leopards and other contraband can be shipped. Leopards may also be collected in DRC and Republic of Congo then transited through Cameroon and to Nigeria before being shipped to Asian countries. Further some live specimens collected in southern African countries like Namibia and Zimbabwe are entering countries like DRC to then fly to Ethiopia and Kenya and later to Asia (Okuguna Matthew, Nigeria CITES MA, November 2021, pers. comm.)

The role of consumer countries

Asia

Where today, India, Nepal, Pakistan, and China may be source countries for leopard, Nepal, Bhutan, Bangladesh, and Myanmar may act as transit countries, and China, Viet Nam, Myanmar and other Southeast Asian countries are consumer countries for leopard products. South Asia's extant leopard population is particularly vulnerable to trade (Debbie Banks, EIA South Asia, November 2021, pers. comm.).

Leopard bones are also a commonly traded commodity often found in traditional Chinese medicine. However, in China the word "leopard" can mean a variety of big cats and most commonly refers to any one of the leopard species, including snow leopard and clouded leopards. Leopard bones found in traditional medicine are reported by China to come from a stockpile of leopard that was capped in 2006 in China, but questions have arisen as to whether this source has long since been exhausted and is therefore being illegally supplemented (Ning, 2018).

Leopard bones were the most seized commodity by weight in WiTIS records from 2010 - 2021, with 49 seizure reports resulting in 208 kg bones seized (Figure 29), all within Asia (118 kg India, 65 kg Nepal 25 kg China). Overall nine out of 288 seizures reported in ITR were for bones

and 49 out of 1,200 in WiTIS, with 81% of these seizures reported as occurring within Asian countries.

China

Similar to tigers, the term “leopard” is a catch all term in China that includes a variety of big cats. For this reason, it is hard to separate products labelled “leopard” from those that may contain other big cat products. A market survey of Chinese internet platforms conducted by TRAFFIC in China in 2021 showed 14 advertisements for leopard products over a two-month period (see Table 11). Where Chinese traditional medicine historically lists tiger and leopard products as being imbued with a particular medicinal quality, there is evidence that non-leopard big cats are entering the Chinese market to be relabelled as “leopard” for Chinese consumption. Also similar to tigers, China is both a source and consumer of leopard products, although the number of leopards in China is not enough to support Chinese demand for, or products that purportedly contain, leopard (CFCA, 2018).

Commodity	Number of advertisements
Bone	6
Skin	4
Penis	3
Teeth/claw	1

Table 11: Leopard products advertisements on online platforms in China from 1 August - 30 September 2021 (Source: TRAFFIC China)

According to statistics, there are 45 kinds of Chinese patent medicines containing leopard bones in China. Medicines listed as "Leopard Bone" found in the drug standard query database include Leopard Bone, Leopard Bone Wine, Leopard Bone Papaya Wine, Leopard Bone Zhuifeng Cream, and Leopard Bone Huoluo Pills. At present, most of the domestic leopard bones are reported to come from leopards in Myanmar, snow leopards in Inner Mongolia, Qinghai, Tibet and Xinjiang of China, and lynxes from northwest China (CFCA, 2018). Plasters bearing the image of leopards sometimes do not contain any traces of leopard, but the image is used to psychologically attract customers (Anon., November 2021, pers. comm.).

A ban on hunting wild leopards has been in place in China since 1 January 2006. After China issued the "Notice of the State Council on Prohibiting the Trade of Rhino Horn and Tiger Bone" in 1993, leopard bones began to be used as a substitute for tiger bones (CFCA, 2018). In the year 2000 leopard bones were removed from the raw materials portion of the Chinese Pharmacopoeia (CFCA, 2018), but they are still found in the section on formulations. In 2006, China banned the use of leopards sourced from the wild in traditional Chinese medicine (TCM), with the understanding that they would continue to use a pre-existing stockpile of leopards for TCM products until the stockpile was exhausted. The quantity of leopard bones in this stockpile was not disclosed. As of 2020 EIA found at least 24 TCM manufacturers in China manufacturing

and selling plasters and pills containing leopard bone ingredients from the stockpile (Li, 2020). Ning (2018) studied one such leopard bone product, Hongmao medicinal wine, and found that based on annual consumption, at least 1,000 leopards per year would be required for processing the wine, meaning approximately 14,000 leopards from the time of the 2006 stockpile closure to the 2020 EIA report have been used for one product alone (Ning, F.G., 2018). It appears that companies are still able to include leopard bones in TCM products upon approval of the Forestry Bureau, and Hongmao medicinal wine has the "Special Mark for Wildlife Management in China" issued by the National Forestry and Grasslands Administration, approval number: Lin Hu Xu Zhun [2016] No. 0795, indicating "Leopard Bone Products" (Zhou, X.Y., 2018). Advertisements of Hongmao medicinal wine have since been stopped, but it's unclear as to whether sales have also ceased (Chen, J.H., 2018).

Africa

Similar to the African lion, uses for leopards in Africa varies by country. Very occasionally leopard cubs were reported to be traded from East Africa to the Gulf States poached from the wild (Adamo, African Wildlife Foundation, November 2021, pers. comm.). In South Africa, muti markets have been reported as a source of local trade of leopard parts. Skulls and skins have been observed by an independent investigator in the Mai Mai and Faraday muti markets in Johannesburg. The investigator suggested that the leopard skins were used for traditional purposes including made into capes and crowns to be worn by Zulu tribal elders. As well as skins, trophies from leopards were also reported to be displayed at different public places in South Africa, it was suspected that these were by-products from trophy hunters (Vivienne Williams, October 2021, pers. comm.).

Skin is the main commodity in trade in the African leopard trade, which is used for cultural purposes, religious and ceremonial attire, and as a status symbol and symbol of wealth. In the Shembe church, for example, in South Africa, Zimbabwe, Mozambique, and Zambia, leopard skins are worn by congregations during the religious ceremonies (Jo Tagg, Rooikat Trust, November 2021; Dr. Peter Lindsey, Lion Recovery Fund, Wildlife Conservation Network, November 2021, pers. comm.). A study on the illegal use of leopard skin as ceremonial regalia among followers of the Shembe Church suggests that leopard offtake from within South Africa to support traditional demand for skins exceeds the capacity of the South African leopard population. Thus, additional leopard skin is likely obtained from international sources outside South Africa, which may place pressure on leopard populations throughout many other countries in Africa (Naude, et al., 2020).

Leopard skin was the fourth most exported commodity over the period 2010 - 2019 according the CITES Trade Database, mainly wild-sourced and for hunting purposes, primarily reported by Zimbabwe (552 reported and 93 reported by importers), Tanzania (270 reported and 65 reported by importers), Mozambique reporting 240 (importers reported 21), and South Africa reporting 201 (importers reported 23). The main importers included South Africa (101 skins imported, exporters reported 96), reporting imports of wild-sourced skins for hunting purposes mainly from Tanzania and Zimbabwe (31 and 32 reported respectively), followed by Zambia (15 skins reported by South Africa), and Mozambique (9 skins reported by South Africa). South

African leopard skin imports peaked 2010 - 2012, with an average annual import of 28 skins. After 2012, annual imports averaged four as reported by South Africa.

The Ngoni in Zambia, Tanzania, and South Africa also use leopard and serval skins in religious ceremonies and for traditional festivals, with leopard skins largely restricted to more senior members and serval skin is mostly worn by other members (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.). Similarly, leopards are extinct in Burundi, but leopard skins are worn in ceremonial costumes of dancers called “intore” during ceremonial events. Fresh skins are often seen during ceremonial events, meaning dancers now either use lookalike costumes (cheetah or serval) or leopard skins provided from abroad that have been poached (Alfonse Fofo, Burundian Office for Environment Protection (OBPE), October 2021, pers. comm.).

In addition to skins used in traditional ceremonies and for decoration, the trade in leopard parts and products in West and Central Africa includes teeth, claws, sex organs, and urine. Cubs and juveniles are also sold as pets to tourists (Anon., Congo, November 2021, pers. comm.). Leopard parts are also used as totems in some tribes in Congo and Cameroon where a king cannot be enthroned without a leopard skin. Leopard skins show status in Sudan where leopard skin shoes demonstrate wealth and respect (Anon., Senegal, November 2021, pers. comm.). Leopard urine is used to scare sniffer dogs at ports and airports to dissuade them from detecting illegal products. Other parts like teeth and claws are mostly used for decoration and sometime for protection from mystical attacks in traditional medicine (Corneille Moukson, WWF Gabon, October 2021, pers. comm.).

Evidence in linkages in trade between species

Between leopards and other big cats

In China, the term “leopard” is a general term, which can mean one of several types of big cats. The 45 kinds of Chinese patent medicines containing leopard bones in China, and medicines listed as "Leopard Bone" found in the drug standard query database that include ‘Leopard Bone’, have been found to contain leopards, snow leopards, and lynxes (CFCA, 2018). Similarly, bones of leopards, snow leopards, and clouded leopards have also been found in TCM listed as ‘leopard’ (ZYSJ, 2021).

In the Horn of Africa, the words “leopard” and “cheetah” are often used interchangeably, leading to confusion along the trade chain and to the reporting level. Further, cubs have been found to be interchangeably labelled “leopard”, “cheetah”, or even “caracal” due to their size and similar appearance (Anon., cheetah expert, October 2021, pers. comm.). As cheetah cubs were reported to be the most sought after and commonly seen big cat being traded from East Africa, cheetahs here may have been the target, with leopards and caracals being more opportunistic and substituted (Anon., cheetah expert, November 2021, pers. comm.).

In parts of Africa, links between trade in leopard and other big cats appear to be due to a desire for a spotted pelt (Gareth Wittington-Jones, Panthera, November 2021; Peter Coals, University of Witwatersrand, October 2021, pers. comm.). While it is unclear whether buyers and sellers are unaware that species such as serval and sometimes cheetah are mislabelled as leopard in markets, even non-cat species such as civets and genets have been passed off as "leopard" due to their spotted pelts (Gareth Wittington-Jones, Panthera, November 2021, pers. comm.).

Other spotted big cats have also been used in place of leopard skins used in ceremonies. For example, members of the Lozi tribe in Zambia may wear leopard, serval, or cheetah skins in a skirt when participating in ceremonies. While here leopard is the preferred skin, cheetah or serval are used when leopard is not available (Gareth Wittington-Jones, Panthera, November 2021, pers. comm.). Similarly, those in the Zululand Shembe church, and other religious groups such as the South African Methodist church, wear leopard skins, or other spotted cats (serval or cheetah) when leopards are not available, as hats or ceremonial robes. (Gareth Wittington-Jones, Panthera, November 2021; Dr. Peter Lindsey, Lion Recovery Fund, Wildlife Conservation Network, November 2021, pers. comm.) Demand reduction campaigns are underway by leaders of Lozi tribe in Zambia and leaders of the Shembe church to encourage synthetic skins to be worn during ceremonies and to reduce demand for leopard, serval, and cheetah skins among these groups (Gareth Wittington-Jones, Panthera, November 2021, pers. comm.).

This preference for spotted skins is seen in markets also, where lions, leopards, cheetahs, and small spotted cats sold in muti markets for traditional medicines and curios (Peter Coals, University of Witwatersrand, October 2021, pers. comm.).

In Namibia, seizures of leopards, lions, and cheetah are sometimes found together. These seizures often take place prior to the products reaching Customs at borders, and the traders are community members looking for someone local to sell products to (Karen Nott, Independent consultant for the Ministry of Environment and Tourism (MET) in Namibia, October 2021, pers. comm.).

There are cases of leopard and tiger bones seized together, which may be an indication that bones of the species are being mixed for traditional medicine or other purposes in Asian markets (WiTIS). Leopards are more widely distributed than tigers and are also more in number and therefore potentially easier to poach. Enforcement attention and awareness on leopard trade is also lower than for tigers. In addition to bone glue, tiger and leopard claws and teeth look very similar and in markets are freely mixed and easily accepted by consumers.

Snow Leopards (Panthera uncia)

Range Countries: Afghanistan; Bhutan; China (Yunnan, Qinghai, Tibet [or Xizang], Sichuan, Gansu, Xinjiang, Inner Mongolia); India (Himachal Pradesh, Sikkim, Jammu-Kashmir, Uttaranchal, Arunachal Pradesh); Kazakhstan; Kyrgyzstan; Mongolia; Nepal; Pakistan; Russian Federation; Tajikistan; Uzbekistan

CITES Appendix: I (01/07/1975, originally listed as Uncia uncia, which became a synonym of Panthera uncia in 2019, following taxonomic changes adopted at CoP18)

IUCN Status: Vulnerable (Assessed 2016, McCarthy et al., 2017).

IUCN Number of mature individuals: 2,710 - 3,386 (McCarthy et al., 2017).

Legal Trade

CITES trade from 2010 to 2019 in snow leopard (Panthera uncia) commodities that could be equated to a whole organism mainly comprised trade in live snow leopards (92 as reported by importers, Table 12). These were primarily from captive sources, with 87% captive-bred and 13% captive-born live snow leopards in trade (reported by exporters, importers reported 83% and 14% respectively). The purpose of this trade was mainly for zoos and breeding. About half of this trade, for zoo and breeding purposes from captive sources, was reported as exports by EU Member States; other exporters included Canada (13 reported exports), Switzerland (10 reported exports), and Russia (eight reported exports). However, two captive-bred live snow leopards were imported by the UAE 2011 - 2012 for personal purposes and one in 2015 for commercial purposes from Switzerland, Spain, and Austria (not reported by exporters). Additionally, Ukraine reported imports of two live captive-bred snow leopards for commercial purposes from the USA in 2019. Live snow leopards from wild sources totalled three as reported by importers and two reported by exporters. Kyrgyzstan reported exporting two live snow leopards from unknown origin and unknown source to Kazakhstan in 2012 for zoo purposes (Kazakhstan did not report this trade). Russia reported imports of wild, live snow leopards; two were reported imported in 2018 and one in 2019 and both were direct imports from Tajikistan for breeding purposes (Tajikistan did not report this trade).

One wild-sourced skin was reported as imported by Germany in 2018 for educational purposes from Bhutan. In 2019, Bhutan reported exporting one skin from seized or confiscated sources for scientific purposes to Germany. The USA additionally reported imports of one garment from Afghanistan from seized or confiscated sources and traded for personal purposes in 2014 (this was not reported by Afghanistan). Other trade comprised specimens for scientific purposes and pre-convention commodities traded for educational or traveling exhibition purposes.

Trade term		Importer reported	Exporter reported
Whole organism equivalent	bodies	1	
	live	92	86
	skeletons		1
	skins	1	3
	skulls	1	2
Parts and derivatives	garments	3	
	hair	25	
	specimens	279	753
	unspecified		2

Table 12: Total snow leopard (Panthera uncia) commodities in direct trade reported by number in the period 2010 - 2019 (Source: CITES Trade Database).

Illegal Trade

Six CITES Parties reported a total of 11 snow leopard seizures in CITES Illegal Trade Reports (ITR) between 2016 - 2021. China and Mongolia reported the highest number of seizures (both reporting three), followed by Nepal, reporting two (Figure 30). A total of three skins, two bodies, and one skeleton, leather product, and derivative were seized over the period (Figure 31). Other commodities reported by weight totalled 16 kg of meat and 3.7 kg of skins.

WiTIS holds information on 50 cases in which snow leopard commodities were reported to have been seized between 2010 and 2021. Seizures were most frequently recorded as occurring in China (66%), followed by Mongolia (16%), and India and Kyrgyzstan (both 4%) (Figure 30). Snow leopard skins were among the most seized items reported by number, with 66 skins, followed by 50 individuals (unknown whether alive), 14 bodies and 4 skeletons (Figure 31). Figure 30 shows the countries reporting seizures, and Figure 31 shows the main commodities in trade that were reported by number.

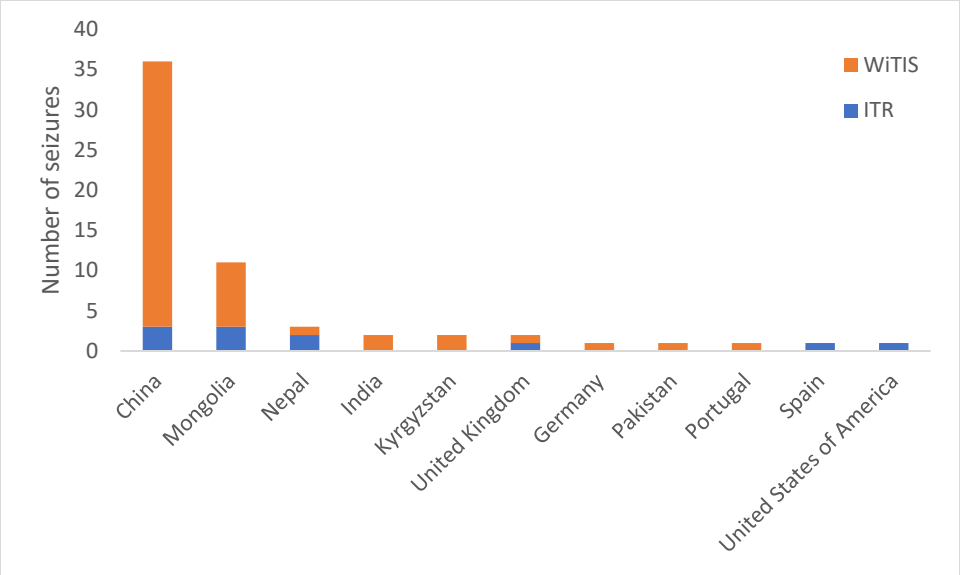

Figure 30: Countries reported in seizures involving snow leopard (Panthera uncia) in ITR 2016 - 2021 and WiTIS 2010 - 2021 (Source: WiTIS and CITES Illegal Trade Reports).

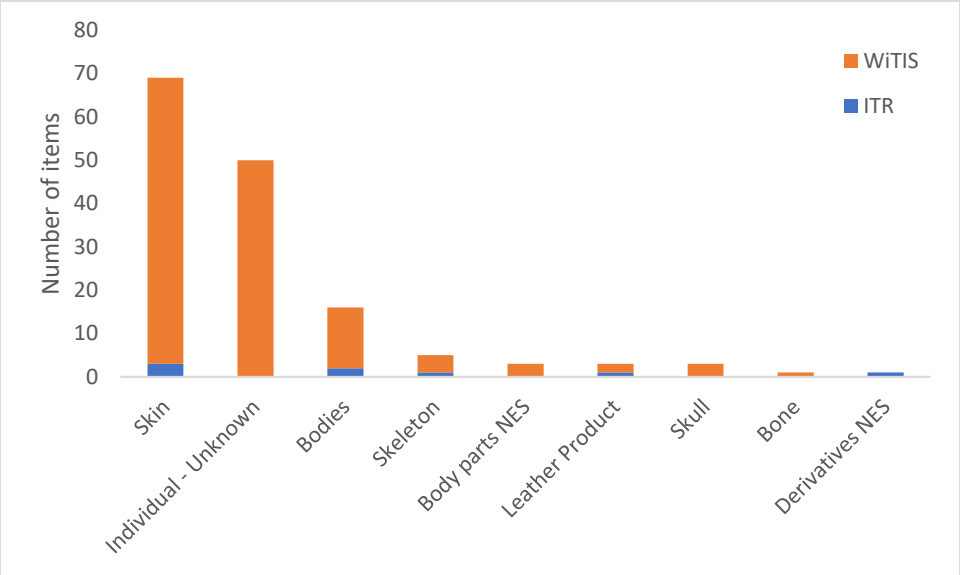

Figure 31: Snow leopard items seized as recorded in ITR 2016 - 2021 and WiTIS 2010 - 2021 where reported by number (Source: WiTIS and CITES Illegal Trade Reports).

Role of source countries

Snow leopards are a plateau species, distributed across 12 countries in East, South, and Central Asia, although 90% of snow leopard poaching cases are suspected to mainly occur in five countries: China, Mongolia, Pakistan, India and Tajikistan. In 2013, snow leopard range States signed the "Bishkek Declaration", demonstrating their determination to collaborate to

protect snow leopards (Sohu, 2019). Individual snow leopards have very large home range and live in difficult to protect terrain, thus making conservation of the species challenging (Jennifer Snell Rullman, Snow Leopard Trust, November 2021, pers. comm.).

Threats to snow leopards are: an increase in livestock, which competes with wild herbivores for resources, and has led to a decrease in prey and habitat degradation; retaliation from herders as snow leopards hunt livestock; and Illegal trade in bones and other body parts (Sohu, 2019). Imported snow leopard products are most frequently found in China and Russia (Cankaoxiaoxi, 2016). Afghanistan is also one of the main illegal markets, while snow leopard seizures in Afghanistan, Bhutan, and Kazakhstan are relatively low, indicating the need for strengthened enforcement (Sohu, 2019).

Sixty percent of snow leopard habitat is in China and in the past 20 years, the number of snow leopards has fallen by approximately 20% or more due to habitat degradation, prey reduction, poaching, and retaliatory killings (Snow Leopard Alliance, 2013). Based on cases discovered, it is believed that at least 432 snow leopards were killed in China from 1990 to 2011, of which around a fifth were due to retaliatory killings and the rest were due to poaching. However, the cases discovered are thought to only be the tip of the iceberg, and the actual loss of snow leopards is likely to be much higher. The value of snow leopard skin and its scarcity makes it a target for poachers. Related investigations found that China is the world's largest market for snow leopard products, and the number of snow leopard products entering the Chinese market from Central Asia is difficult to estimate (Xu, 2015).

There have been reports of changes to the trade of snow leopards, as trophy hunting networks offering illegal snow leopard hunting, as well as reports of scoping for prices of parts (Jennifer Snell Rullman, Snow Leopard Trust, November 2021, pers. comm.). No trophies were reported to the CITES Trade Database for snow leopard from 2010 - 2019. There are uncorroborated reports that skins from cubs in the Middle East have been made into stuffed animals (Jennifer Snell Rullman, Snow Leopard Trust, November 2021, pers. comm.).

The role of illegal trade routes

While the main source countries for snow leopard products are thought to be China, India, and Nepal, the transit countries are thought to be China, Nepal, Bhutan, and Myanmar. The skin trade chain may be sourced from India, Nepal, and Bhutan, which then transit through Pakistan and into China (Debbie Banks, EIA, November 2021, pers. comm.).

Role of consumer countries

According to seizure data held in WiTIS and CITES Illegal Trade Reports, China made the most seizures of snow leopard products between 2010 - 2021 (see Figure 30). Skins were the most seized item; 69 skins and 4 kg of skins reported, of which 66 were records in WiTIS and the remainder reported through ITR. Skins are used primarily for clothing, decoration (such as home

décor), and to show wealth and status. The next most seized commodities were snow leopard bodies (16) and skeletons (5) (see Figure 31). According to Jennifer Snell Rullman of the Snow Leopard Trust (November 2021, pers. comm.), bones are not as commonly found on the market, but snow leopard bones are found among those of common leopards and other big cats in traditional Asian medicines.

Snow leopards have been found in medicines in China labelled “leopard products (CFCA, 2018), and the word “leopard” in China may be used to include snow and clouded leopards, among other big cats. According to Debbie Banks (EIA, November 2021, pers. comm.), consumers in China and Southeast Asia, purchase snow leopard products predominately online and less often in physical markets and use bones for traditional medicine and skins for decoration and status. Here, snow leopards are sold for less than common leopards, but for more than clouded leopards, thought to be in line with the hierarchy of demand (Debbie Banks, EIA, November 2021, pers. comm.).

Consumer markets specifically for snow leopard products are difficult to track as they change regularly based on accessibility, availability, and enforcement measures (Jennifer Snell Rullman, Snow Leopard Trust, November 2021, pers. comm.).

In Eastern Europe and Western Asia, (Russia, Kazakhstan, Belarus), the Middle East (Saudi Arabia, UAE) the USA, and Western Europe, more often snow leopard products include skins and less often, taxidermies of individuals (Debbie Banks, EIA, November 2021, pers. comm.).

Evidence in linkages in trade between species

Between snow leopards and different species of big cat

Snow leopards have been commonly found in medicines in China labelled “leopard products” (CFCA, 2018), and the word “leopard” in China may be used to include snow and clouded leopards, among other big cats. According to "Xinjiang Snow Leopard Poaching and Illegal Trade Investigation Report (2006)", from July 2004 to May 2005, leopard bones were found on sale in five medicinal markets in Urumqi, Xinjiang, China and one pair of lynx bones, which were mislabelled as snow leopard bone. This could have been an oversight or may suggest a demand for snow leopard bones in parts of China for traditional medicine (CFCA, 2018).

Characteristics of illegal trade

A common practice in the snow leopard trade for skins appears to be to claim new skins as pre-convention skins to evade wildlife protection laws. Snow leopard skins remain supple for many years, and so without testing it is difficult to tell the difference between an old skin and a new skin (Jennifer Snell Rullman, Snow Leopard Trust, November 2021, pers. comm.). In India, snow leopard trade is illegal, but pre-convention specimens of snow leopard are commonly passed through inheritance, and this includes taxidermised snow leopards and the lining of coats. There are suggestions that skins from new snow leopard trade events are being used to replace the skins on pre-convention taxidermies and as new lining for coats. This does not

appear to be a big risk, but does seem to occur (Debbie Banks, EIA, November 2021, pers. comm.).

Clouded Leopard (Neofelis nebulosa) and Sunda clouded leopard (Neofelis diardi)

Range Countries:

Neofelis nebulosa Bangladesh; Bhutan; Cambodia; China; India; Lao People's Democratic Republic; Malaysia (Peninsular Malaysia); Myanmar; Nepal; Thailand, Viet Nam (possibly extinct).

Neofelis diardi - Brunei Darussalam; Indonesia (Sumatra, Kalimantan); Malaysia (Sarawak, Sabah)

CITES Appendix: I (01/07/1975)/ (Neofelis diardi (Sunda clouded leopard) originally listed as Neofelis nebulosa, from which Neofelis diardi was split in 2019, following taxonomic changes adopted at CoP18).

IUCN Status: Both species are recognised by IUCN, both have been assessed as Vulnerable (Neofelis nebulosa Gray et al., 2021; Neofelis diardi (Hearn et al., 2015).

IUCN wild population estimate (number of mature individuals): Neofelis nebulosa 3,700-5,580 (Gray et al., 2021); Neofelis diardi 4,500 (Hearn et al., 2015).

Background

Recently adopted taxonomic changes have split the clouded leopard into the two species; the Clouded leopard (Neofelis nebulosa) and the Sunda clouded leopard (Neofelis diardi). Originally listed as Neofelis nebulosa, CITES has recognised the two species since 2019. As this split will not have impacted the trade data, we have treated the Clouded Leopard and Sunda clouded leopard as one species “clouded leopard” in this report.

Legal Trade

The live trade of clouded leopards in 2013 increased by 42% compared to 1975 (Bale, 2015) and according to the CITES Trade Database, live exports (42 reported by exporters) made up the bulk of reported trade from 2010 - 2019. Most trade in live clouded leopards was reported as from captive sources predominantly for zoos or breeding purposes. Nine (9) were reported as ranched by Mexico (reported imports of four live clouded leopards from Lao PDR) and Gabon (reported two live clouded leopards from South Africa). The top exporters of live clouded leopards 2010 - 2019 were the UAE, reporting 11 (importers reported two), and Thailand and the USA, both reporting eight (importers reported five and seven respectively). EU Member States collectively reported exports of seven live clouded leopards. The UAE reported exports of four live leopards to Armenia, three to South Africa, two2 to Great Britain, and two to Thailand. South Africa and Thailand were the only importers reporting this trade; both reporting imports of one live clouded leopard from the UAE. The top importers of live clouded

leopards included the USA, reporting six live individuals (exporters reported nine), Ukraine, reporting imports of five individuals (exporters reported one), and Mexico and Russia, both reporting four live individuals imported (exporters reported none and two respectively). One wild-sourced trophy was reported in trade by Malaysia, reporting the export to Singapore in 2015 for commercial purposes.

Trade term		Importer reported	Exporter reported
Whole organism equivalent	bodies		2
	live	39	42
	trophies		1
Parts and derivatives	claws	2	
	specimens	9	2

Table 13: Total clouded leopard (Neofelis nebulosa) commodities in direct trade reported by number in the period 2010 - 2019 (Source: CITES Trade Database)

Illegal Trade

From 2016 to 2021, seven Parties reported a total of 13 clouded leopard seizures through CITES Illegal Trade Reports, comprising of over 14 items seized. Most seizures were reported by Bhutan (38%), followed by Myanmar and Nepal (15% each) (Figure 32). Skin and dead individuals were reported in the highest volumes where reported by number, totalling seven (50% of all items) and three (21% of all items) respectively (Figure 33). Only skin (0.4kg) was reported to have been seized by weight.

The WiTIS database holds seizure information on 63 seizures between 2010 and 2021, comprising over 267 items across 11 countries. Seizures were most frequently recorded as occurring in Indonesia (24%), followed by Thailand and China (14% each) and Viet Nam (13%) (Figure 32). Bone, skins and claw were reported in the highest volumes where reported by number, totalling 113 (42% of all items), 78 (29% of all items) and 25 (9% of all items) respectively (Figure 33). Bone was the highest seized item by weight, comprising 2.6kg in total, with smaller volumes of teeth (1.5kg).

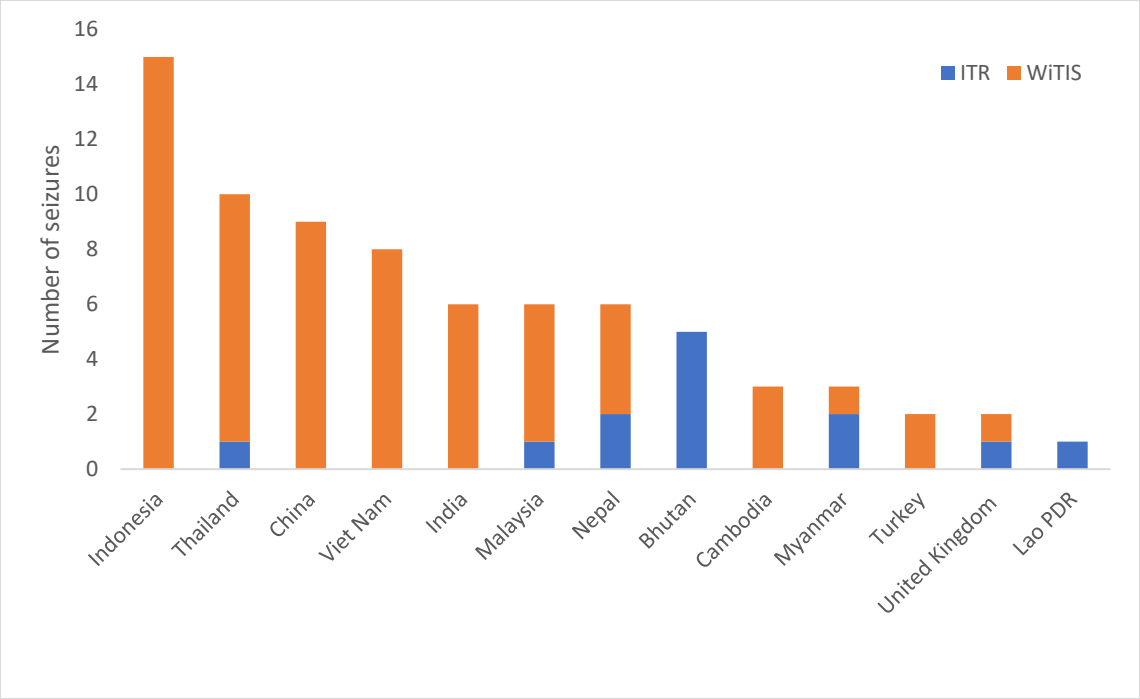

Figure 32: Countries of reported seizures of clouded leopards (Neofelis nebulosa) in ITR 2016 - 2021 and WiTIS 2010-2021 (Source: WiTIS and CITES Illegal Trade Reports).

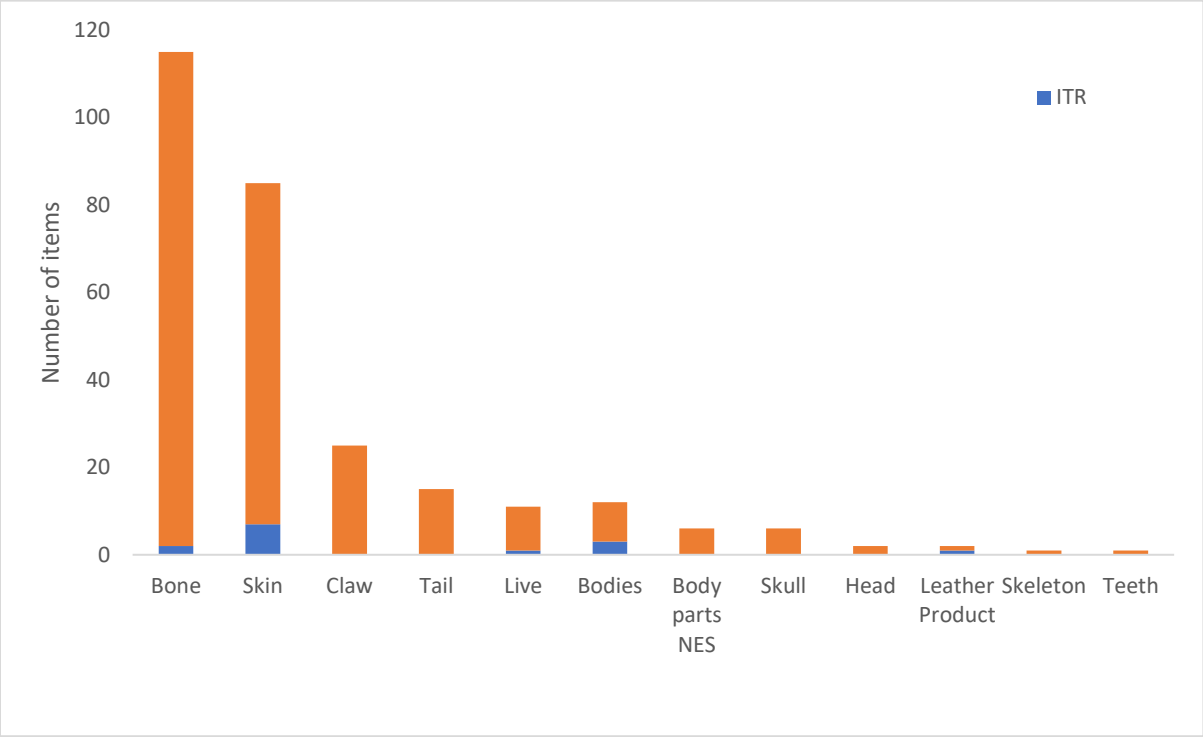

Figure 33: Clouded leopard items seized as recorded in ITR 2016 - 2021 and WiTIS 2010 - 2021 where reported by number (Source: WiTIS and CITES Illegal Trade Reports).

Role of source countries

The clouded leopard is native to Southeast Asia and China and mostly distributed in Indonesia, the foothills of the Himalayas, and inland China. The biggest threat facing clouded leopards is deforestation, which has seen the Chinese clouded leopard compressed into a narrow area on the southwest border, but the illegal trade has seriously threatened their survival (Big Cat, 2019). Clouded leopards are listed in CITES Appendix I, and legal transactions are limited to individuals bred in captivity. Still, traders are making huge profits through captive breeding to be sold as pets, or for tourist attractions (Thais Morcatty, Wildlife Conservation Research Centre, Oxford University, October 2021, pers. comm.).

Figure 34: Direct CITES trade in live clouded leopard (Neofelis nebulosa) reported by importers (orange) and exporters (grey) (Source: CITES Trade Database)

The Sunda clouded leopard (Neofelis diardi), is found only on the Islands of Borneo (encompassing Brunei, the Malaysian states of Sabah and Sarawak, and Kalimantan, Indonesia) and Sumatra. The species is poached throughout much of its range, likely for commercial trade in Indonesia (Gomez & Shepherd, 2021).

The clouded leopard was reported in 18 incidents between 2010 - 2021 involving an estimated 22 clouded leopards, and the most frequent commodity seized were live individuals

(7), followed by dead individuals (five incidents), skins (five incidents- used in traditional Indonesian dance), claws (four incidents) and leather products (one incident). A seizure in Jakarta in 2015 involved a live Sunda clouded leopard ordered by a buyer in Kuwait (Gomez & Shepherd, 2021). According to records of seizures from WiTIS, Indonesia seized the most clouded leopards, out of any country between 2010 - 2021, with 15 out of 63 incidents noted (Figure 32).

China is also a source country, where clouded leopards are poached from the wild reported to be used domestically (Feng Limin, Beijing Normal University, November 2021, pers. comm.).

Concerns have been raised about the trade of mainland China clouded leopard, as mortality through illegal killing (both targeted and incidental capture by snares) is thought to be the biggest driver of population decline (Gray et al., 2021). However, for this species there are few recent trade surveys, which leads to reliance on earlier work. Based on earlier studies, physical markets in areas which are remote or poorly regulated have been highlighted as particular areas of concern for the trade in this species. One such area is the Golden Triangle region. A study of wild cats in Tachilek (a town in Myanmar on the Thailand/Myanmar border) from 1991 - 2013, and Mong La (Myanmar on the Myanmar/China boarder) from 2001 - 2014 suggested that the clouded leopard was the most common species of cat in trade with the identification of 482 individuals and the presence of this species in 22/24 surveys (D'Cruze and Macdonald, 2015), the majority of commodities observed were skins or skulls/heads. The level of trade is concerning particularly as the species is a "totally protected" species in Myanmar. The data from this study show that over these time periods there has been a decline in trade in cats from Myanmar to Thailand, but an increase in trade from Myanmar to China (D'Cruze and Macdonald, 2015). These changes have been attributed to increased enforcement in Thailand and increasing buying power of China (D'Cruze and Macdonald, 2015). However, these data are nearly ten years old and while they highlight concerning patterns of trade further work is needed to elucidate current trends.

Captive breeding

Clouded leopards are sensitive to stress and in captivity have been known to tear their fur and bite their tail; the male clouded leopard in particular becomes abnormally aggressive often killing females they have been paired with for mating purposes (Bale, 2015). A study (in 2015) highlighted concerns about clouded leopards kept in captive breeding facilities which had previously been linked to illicit trade activities (D'Cruze, and Macdonald, 2015). For example, evidence of clouded leopards being kept in Muang Thong Tiger Farm in Lao PDR, and Ubon zoo in Thailand were suggested to be concerning as these institutions had previously been criticised for the illicit sale of tigers and tiger parts (D'Cruze and Macdonald, 2015). The study suggested that breeding animals may be collected from the wild to increase breeding populations. As well as conservation concerns, there were also welfare concerns as it was thought that these animals may not adapt well to intensive breeding operations given the low success rate of breeding in captivity, and challenges associated with meeting welfare standards

(D'Cruze and Macdonald, 2015). However, these data were also collected in 2015 and more work is needed to determine current trends in captive breeding of clouded leopards.

The role of illegal trade routes

The Golden Triangle region appears to be a transit point for the illegal clouded leopard trade, and transactions mainly occur in Myanmar and Lao PDR with China as the destination (Song DaZhao, Chinese Felid Conservation Alliance, November 2021, pers. comm.). Census data from the past 20 years published in the Journal of Biological Conservation shows that trade between Myanmar and China involving endangered cat species has grown in recent years, and more often clouded leopard limbs and heads are found among a variety of tiger products. Vendors who received the census stated that these products were mainly from Myanmar and India and products were eventually exported to China (BBC, 2014).

The role of consumer countries

Clouded leopards are used for their skins for decoration, bones are used for medicine, and meat is eaten for exotic meals. Live animals are also used for the pet trade (China Youth Net, 2020). It is believed that clouded leopards are opportunistically poached rather than targeted, as much of the trade of which clouded leopards are a part (bones for glue, skins for decoration/ status symbol, and claws and teeth for jewellery or talisman) are sold to a public who don't discriminate among big cats' products (Anon., Lao PDR, November 2021, pers. comm.).

According to seizure data where reported by number of items for 12 incidents from ITR, the most seized item from 2016-2021 for clouded leopards is skin (7 items) (Figure 33). For seizure data reported by number of items in WiTIS, out of 61 incidents the most seized item is bone (113 items), followed by skin (78 items) and claws (25 items).

Clouded leopard skeletons (distributed in Sichuan, Yunnan, Guizhou, Guangdong, Guangxi, Fujian, and Taiwan[3] Province of China) have been found mixed with those of leopards, and snow leopards in traditional Chinese medicine, where they are relabelled as "leopard" (ZYSJ, 2021).

Evidence in linkages in trade between clouded leopards and other species

Between different species of big cat

[3] *Amendments have been made in the document to reflect that the Secretariat abides by General Assembly resolution 2758 (XXVI) of 25 October 1971, entitled "Restoration of the lawful rights of the People's Republic of China in the United Nations.*

An increase in clouded leopard transactions may be related to the decline in the number of tigers. As it becomes more difficult for private owners to obtain tigers, they are gradually focusing on the clouded leopard. In some countries or regions, including Myanmar, the illegal trade in clouded leopard teeth, bones, and fur has far exceeded that of tigers (CFCA, 2018).

In China, the term “leopard” is a generic term for big cats (International Fund for Animal Welfare (IFAW) China, October 2021, pers. comm.), and in addition to the common leopard, often refers to snow leopards and clouded leopards in traditional Chinese medicine. Of the 45 kinds of Chinese patent medicines containing leopard bones in China, and medicines listed as "Leopard Bone" found in the drug standard query database, many have been found to contain clouded leopard skeletons relabelled as “leopard” (ZYSJ, 2021).

Between clouded leopards and other wildlife species

Seizures of clouded leopards in Indonesia and Malaysia included most frequently Javan leopard subspecies, tigers, and Sun bears (Gomez & Shepherd, 2021).

Jaguars (Panthera onca)

Range Countries: Argentina; Belize; Bolivia (Plurinational States of); Brazil; Colombia; Costa Rica; Ecuador; French Guiana; Guatemala; Guyana; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Suriname; Venezuela (Bolivarian Republic of)

CITES Appendix: I (01/07/1975)

IUCN Status: Near Threatened (Assessed 2016, Quigley et al., 2017)

Wild population estimate: 173,000 (Jędrzejewski et al., 2018)

Background

In accordance with Decision 18.251, the CITES Secretariat commissioned a study on jaguars to:

map illegal trade in the jaguar throughout its range, including poaching, trade pathways and networks, and main markets that are driving this trade, and how it is connected to other wildlife trafficking activities in the region;

analyse the uses of jaguar specimens, both within range states and in international markets, as well as the extent to which illegally-sourced jaguar products are entering international trade;

analyse the modus operandi associated with illegal trade in jaguar specimens and possible drivers of this activity; and

characterise the overall impact of illegal trade on jaguar populations throughout the species' range

The study "The illegal trade in jaguars (Panthera onca)" was published in October 2021 and summarised by the Secretariat in SC74 Doc. 75 (Lyon, 2022), and due to the overlap, y it was agreed that the present study would draw on it in this paper. Therefore, the study on the illegal trade in jaguars is heavily referred to below, with additional information where available. For more of an in-depth review on jaguar trade, please see: The illegal trade in jaguars (Panthera onca), CITES (2021).

Legal Trade

Between 2010 and 2019, CITES Parties reported directly importing 162, and exporting 175, jaguar commodities equivalent to a whole organism. The top reported jaguar commodity was live individuals (Table 14). The majority of exported live jaguars came from captive sources for non-commercial purposes. Only Panama (1), Brazil (2), Paraguay (1), and Suriname (1) reported exports of live jaguars from wild sources. About two-thirds of this trade was reportedly for zoos with the remaining mainly for captive breeding (12%), circuses or travelling exhibitions (7%) and commercial purposes (5%).

In the period 2010-2019, 32 different Parties reported exporting live jaguars and this rose to 37 when reported by importers. The top exporters were South Africa (33 reported exports) followed by Mexico (21 reported exports) and Russia (18 reported exports). The top importers were China (21 reported imports) and South Africa (16 reported imports).

Direct trades in parts and derivatives predominantly consisted of specimens, with 89% of this reported for scientific purposes and mainly exported Mexico (72%) and Costa Rica (17%).

Trade term		Importer reported	Exporter reported
Whole organism equivalent	bodies	1	1
	live	146	163
	skeletons	1	1

	skins	9	8
	skulls	2	
	trophies	3	2
Parts and derivatives	bone pieces	2	1
	bones	1	10
	carvings	3	6
	claws	1	
	derivatives		60
	extract	1	
	feet	1	
	fur product (small)	1	
	garments	3	2
	hair	1	
	leather products (large)	1	
	leather products (small)	7	3
	skin pieces	3	2
	specimens		1,995
	teeth	12	

Table 14. Total jaguar (Panthera onca) commodities in direct trade reported by number in the period 2010 - 2019 (Source: CITES Trade Database)

Illegal Trade

Thirteen CITES Parties reported a total of 45 jaguar seizures in CITES Illegal Trade Reports (ITR) between 2016 - 2021. French Guiana reported the highest number of seizures (27%), followed by Brazil (18%), and the United States (13%) (Figure 35). Claws and teeth were most frequently reported, with Parties reporting 44 claws and 42 teeth. This was followed by 12 skins (Figure 36). Other commodities reported by weight consisted of one seizure of three grams of teeth.

WiTIS holds information on 61 cases in which jaguar commodities were reported to have been seized between 2010 and 2021. Seizures were most frequently recorded as occurring in Mexico (67%), followed by Brazil (16%), and Bolivia and China (both 9%) (Figure 35). Jaguar teeth were among the most seized items reported by number, with 365 teeth, followed by 309 live individuals, 58 claws and 37 skins (Figure 36).

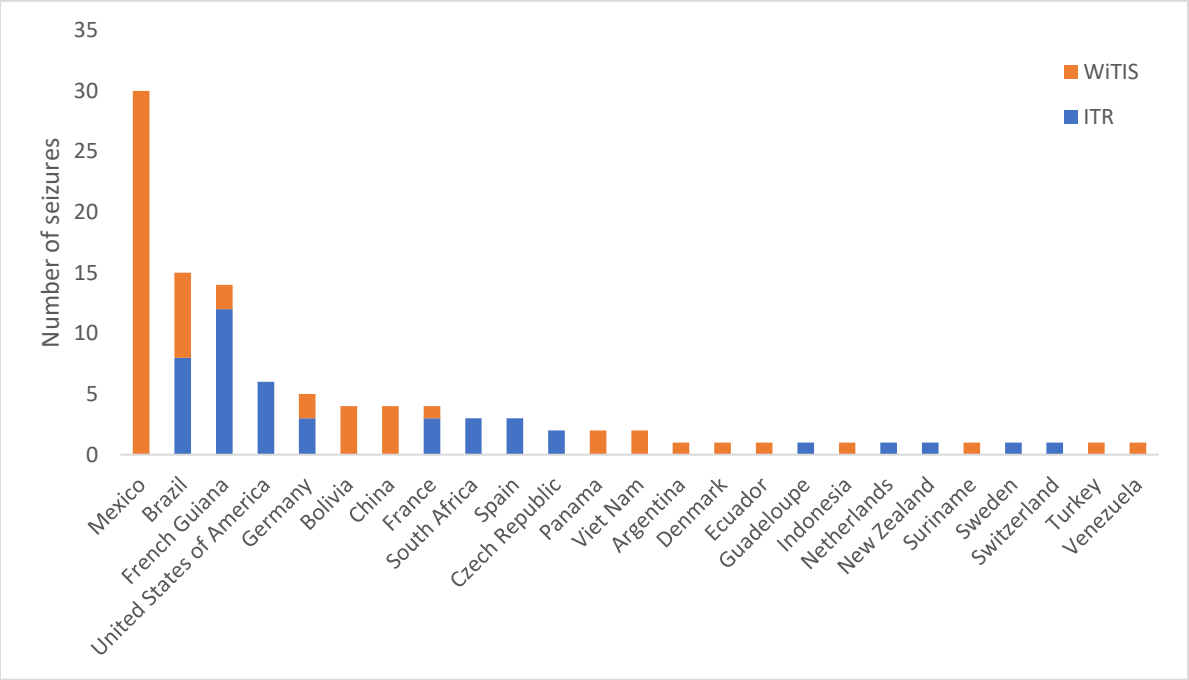

Figure 35: Countries where jaguar commodities were reported to have been seized 2010 - 2021 (Source: WiTIS and CITES Illegal Trade Report).

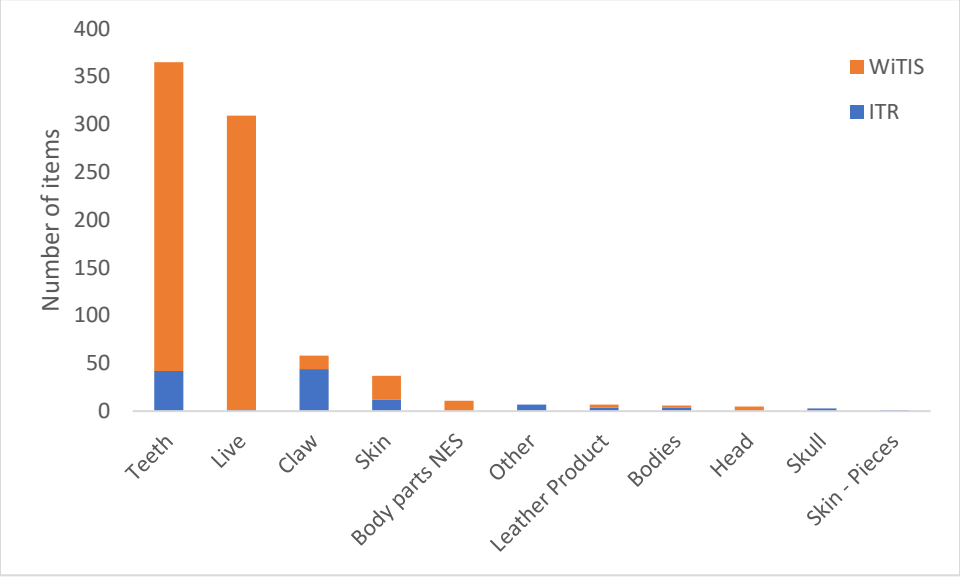

Figure 36: Jaguar commodities seized by number of items 2010 - 2021 (Source: WiTIS and CITES Illegal Trade Reports).

Role of source countries

Jaguars are distributed across 19 countries, from the south-western United States to northern Argentina, (de la Torre et al., 2017). They are locally extinct in El Salvador and Uruguay, and currently occupy only 51% of their historic range (Quigley et al., 2017; Arias, 2021).

Jaguars' main threats are from hunting for wild meat and its effects on the jaguar prey base; human encroachment and habitat loss from logging, non-timber forest product collection and mining; and human-wildlife conflicts from fear of attack and in retaliation for attacks on livestock. Domestic markets, international, and tourist markets, and traditional uses of jaguar body parts make jaguars a target of demand. Jaguars are targeted in poaching and retaliatory killings, which are becoming more frequent due to encroachment on jaguar habitat by cattle ranching and agricultural advancement. Increasing financial incentives from the high price of jaguar body parts, coupled with growing demand from foreign markets, may be motivating poaching and parts removal from human-wildlife conflict incidents, and population viability models suggest that current offtake levels associated with opportunistic poaching and retaliatory killing may already be affecting jaguar populations throughout its range (Arias, 2021).

According to the World WISE Database on seizure information, Peru was the most frequent source of jaguar body parts shipments (19 out of 78 records containing data on shipment source country - 24.4%), followed by Bolivia (14.1%), Mexico (11.5%), Brazil, Nicaragua and Guatemala (5.1% each), and Colombia and Venezuela (3.8% each) (Arias, 2021). Other source countries, Costa Rica, Ecuador, Guyana, French Guiana, Paraguay, and Panama, among others, were involved in less than two seizures. Of the major seizure countries, only Mexico (carvings 3, leather products 3, specimens 1,438), Brazil (carvings 1, extract 1, derivatives 60, live 2, specimens 154), Guatemala (bone pieces 2, carvings 2) and Venezuela (skin pieces 2, teeth 6) also exported wild-sourced jaguar parts and products between 2010 and 2019, according to CITES Trade Data information.

Most illegal trade in jaguars is thought to come from wild sources although captive breeding centres exist in Brazil and Mexico (Xiao Yu, China, November 2021, pers. comm.) that are not registered with CITES. CITES Trade Data shows 1 live export from captive sources from Brazil from 2010 to 2019, and 17 from Mexico in the same timeframe.

An influx of international investment and infrastructure personnel especially by Chinese owned companies into countries including Bolivia, Peru, and Suriname has spawned activities related to poaching and smuggling of jaguar (Bale, 2020). For example, in Bolivia, the authorities intercepted packages destined for China containing jaguar teeth that were made into jewellery, allegedly mailed from Chinese workers in Bolivia (Nuwer, 2020).

Seizures of jaguar body parts in countries like Bolivia and Suriname, which were either destined to China, where teeth and claws are used for handcraft and amulet, similar to tigers (International Fund for Animal Welfare (IFAW) China, October 2021, pers. comm.), or illegally traded by jaguar traffickers of Chinese descent (unconfirmed nationality and migratory status), have highlighted the role of Chinese wildlife markets within jaguar range States the demand for jaguar body parts. Tourism, involving both domestic and foreign tourists, offers another opportunity to sell jaguar crafts and souvenirs to a wealthier consumer base. For countries like Peru, Mexico, Guatemala and Belize, tourism is a well-evidenced driver, with multiple jaguar body parts seized from crafts shops, restaurants, hotels and facilities located at tourist destinations. The desire to possess live jaguars as household pets or as part of private wildlife collections, as tourist attractions or for personal enjoyment, was identified as another driver of

the illegal trade in jaguars (Arias, 2021). Trophy hunting, though banned throughout the jaguar range, was a less common but persistent driver of jaguar poaching and of the illegal possession and trade in jaguar specimens (Arias, 2021).

The role of consumer countries

Legal Trade

As with exports, live jaguars are the highest reported imported jaguar commodities in the CITES Trade Database, with 146 reported imports from 2010 - 2019. China imported the most live jaguar in this timeframe, with 21 imports, followed by South Africa (16). The UAE, Egypt, the United States, and the Philippines each reported eight live imports of jaguars from 2010 - 2019. Most imported were reported to be from captive sources predominantly for Zoo, Exhibition, Breeding, Educational purposes. The USA reported four live jaguars from wild sources, Argentina reported three, and Turkey reported one all for zoo, breeding or reintroduction purposes.

Illegal Trade

The World WISE Database contained 120 records of jaguar seizures from January 2000 to March 2018 (data for 2018 was incomplete), involving the illegal trade of a minimum of 179 jaguar specimens (body parts or live animals). The country with the largest number of seizures was the United States (49.2%) followed by Mexico (18.3%), Germany (5.8%), France (5%), Guatemala (4.2%) and French Guiana (2.5%). All remaining countries had less than two seizures in that period. Collectively, these seizures involved a minimum of 101 jaguars (whole organism equivalents, including only recognisable parts), if seizure records are considered independent. The most commonly seized jaguar body parts were skins (23%), teeth (21%) and live animals (12%) (Arias, 2021). Seizure information from the World WISE Database suggest that there are at least four geographical routes found repeatedly in international illegal trade in jaguar body parts, which include:

1) from range countries to the United States (53 records),

2) from range countries to the European Union (8 records),

3) from the United States to the European Union and vice versa (5 records), and 4) from range countries to China, by way of Europe (3 records).

These routes do not necessarily represent the actual scale or characteristics of the international illegal trade in jaguar body parts (Arias, 2021).

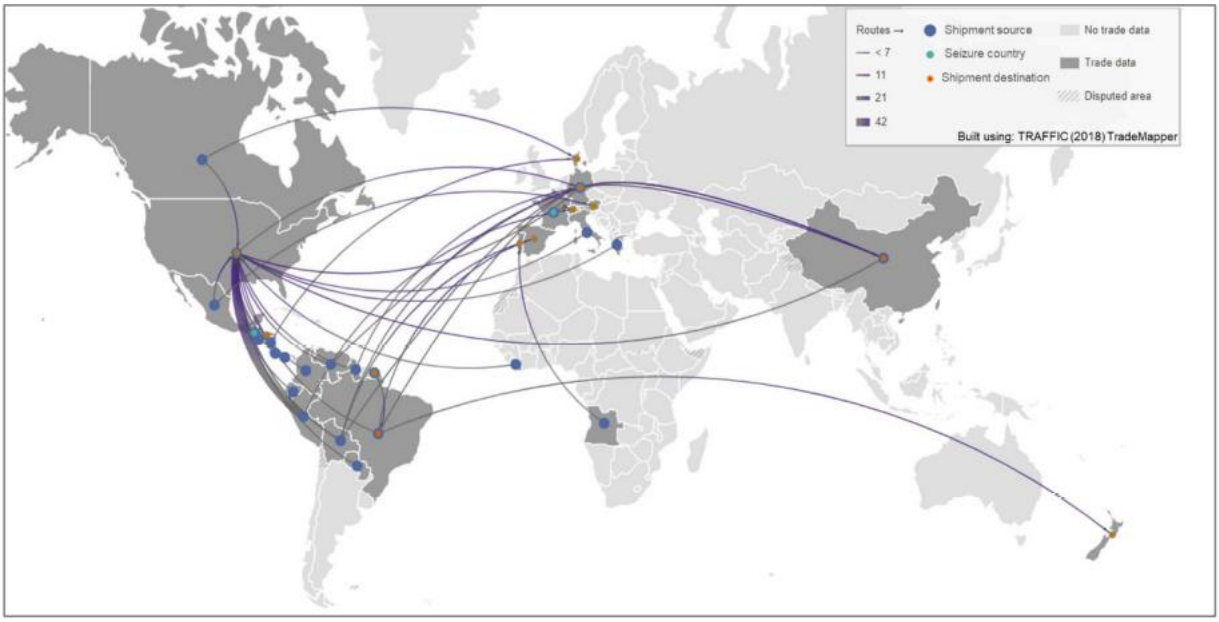

Figure 37: International illegal trade records (seizures) from 2000 - 2018 (2018 is incomplete). Arrows represent number of body parts illegally traded. (Source: UNODC (2021) World WISE Database; WiTIS). (Arias, 2021)

The CITES study on illegal trade in jaguars found that there is less evidence about the uses of jaguar body parts outside of jaguar range States, and that this remains one of the most significant gaps in knowledge about the illegal trade in jaguars. UNODC's World WISE Database shows that there is a significant trade of jaguars to the United States, Germany and other European countries, but that the dynamics of jaguar trade in North America and Europe have received limited attention and remain largely unknown. The most frequently seized specimens were jaguar teeth (totalling 689 teeth across reporting countries), followed by live animals (103), skins (65), and undefined jaguar products (63).

According to the World WISE Database, the United States was the most frequent import destination (58 out of 76 records containing destination country – 76.3%), followed by Germany (5.3%) and China (4%). Based on jaguar poaching and seizure data submitted to the CITES study on illegal trade in jaguars, the number of illegally traded jaguar body parts varied greatly by country, from one specimen reported by Serbia to 603 specimens reported by Bolivia. The number of reported jaguars poached in jaguar range countries (not necessarily due to illegal trade) ranged from one in Mexico to 369 in Panama, with varying time frames. A few countries, including Argentina, Brazil, Mexico, Paraguay, Peru, Suriname, Czech Republic, and Serbia presented evidence either suggesting or confirming the existence of international illegal trade in jaguar body parts (seizures made at airports or border areas). Overall, there was limited evidence of international illegal trade in jaguars provided by countries, and the number of seizures for those with confirmed evidence were low (Arias, 2021).

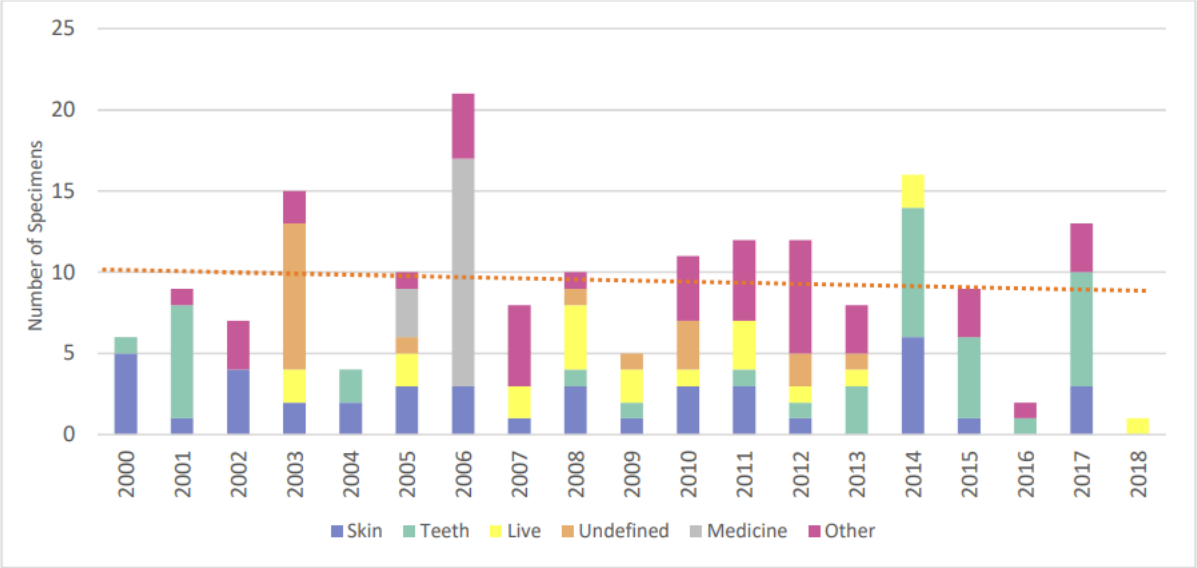

Figure 38: Number of seized jaguar specimens across time (2018 is incomplete), by body part. The category 'other' includes skin pieces, skulls, leather products, garments, bodies, jewellery, scientific specimens, hair products, and feet. The database provided no specific details of which body parts are included under the category 'medicine' (Source: UNODC (2021) World WISE Database; Arias, 2021).

While the CITES study on illegal trade in jaguars found little evidence that jaguar body parts are being used in Traditional Chinese Medicine as substitutes of tiger body parts, "due to the overall limited seizure evidence of 'jaguar paste' (boiled bones and flesh) or other jaguar-based medicinal products in China or elsewhere", the study does find seizures of China-bound jaguar teeth and other products and posited that information exists to assume the use of Jaguar in China. Based on evidence of deliberate and unintentional mislabelling of big cat products in China and other parts of Asia, either under the catch all names of "leopard" and "tiger" or to bring a higher value as a product that has a history in traditional medicine (WCS China, November 2021, pers. comm.), it is unlikely that a specific market for 'jaguar paste' exists, but that jaguar parts found on the Chinese market are instead labelled under the guise of another big cat species. Jaguar teeth and claws found in China are used for handcrafts and amulets/talisman used similarly to tiger products, and bones have been found in seizures to China, possibly used as replacements for tigers in bone glue (WCS China, October 2021, pers. comm.). Between 2010 and 2021, 126 teeth and 13 claws were seized and were reported with China as their destination, representing 93% of all claw seizures and 39% of tooth seizures (WiTIS database). According to CITES Illegal Trade Reports from 2016 - 2021, 44 claws and eight teeth were seized with China as their final destination, representing 100% of claw seizures and 19% of tooth seizures.

In Suriname, many Chinese shops and supermarkets have become transit points for jaguar products, and Chinese tourists seek jaguar from these locations to bring back to China (Sohu, 2018). In Bolivia, postal personnel confiscated hundreds of smuggled jaguar teeth to China and radio broadcasts in cities and towns in northern Bolivia have been known to advertise for the purchase of jaguar organs from locals (Bale, 2017). Jaguars are becoming colloquially known as "South American Tigers", and it is likely that buyers and users of tiger products are turning their attention to jaguars either as a local source of big cat products, or to meet demand abroad

(Nuwer, 2020).

The use types for jaguar vary by geography and whether the trade is domestic or international. In South America the trade often involved live animals as pets, or for skins used as decorative items, clothing, or as a status symbol; while in Europe and Asia, the demand appears to be for pets, and teeth were commonly used as replacements for tiger teeth for jewellery, possibly, or they have their own uses. In Europe and Asia, skin is also used for its ornamental value for luxury goods, such as hats, coats, and bags (TRAFFIC, November 2021; International Fund for Animal Welfare (IFAW) China, October 2021; Xiao Yu, China, November 2021, pers. comm.)

Domestically teeth are traded as jewellery, and seen as a symbolic item, granting good luck to the wearer, while claws are used for earrings and bracelets. Skulls are used for decoration such as lamps, or to bring good luck and keep thieves away. Fat is also used domestically in traditional medicine to cure a wide range of diseases, and may be used as an ointment for joint diseases, burns, or for sore muscles; or as a syrup, drunk to cure colds and respiratory illness. Fats are also used as a repellent against crop-raiding animals. Paws and tails have decorative uses, and bones are rarely sold locally (Anon., Surinam, November 2021, pers. comm).

In some indigenous communities, including in Mexico, jaguars are seen as a symbol of power and thus skins are included in ceremonies and dance, where dressing as jaguar will confer the wearer with the power of a jaguar. Bone paste and fat are sometimes used in pan-Amazonian Ayahuasca medicine, to cure rheumatism, asthma, or bestow sexual power. Jaguar pets may be used as status symbols, when cubs are found alone, or the mother is killed and cubs removed (Anon., South and Central America, November 2021, pers. comm.).

Evidence in linkages in trade between jaguars and other species

Between jaguars and different species of big cats

Jaguar parts are at times sold interchangeably with those of other big cats, intentionally or unintentionally mislabelled. Puma teeth may sometimes be mislabelled as jaguar teeth, as they fetch a higher price than puma teeth (Xiao Yu, China, November 2021, pers. comm.). There is evidence of Chinese nationals in Latin America using jaguar products relabelled as tiger products, as opposed to jaguar products sold in China as tiger substitutes (Anon., Surinam, November 2021, pers. comm.), there have been WeChat (a Chinese-specific communication app.) posts advertising jaguar in China as" South American tiger". This could be a language issue, as the terms "tiger" and "leopard" encompasses a variety of big cats (International Fund for Animal Welfare (IFAW) China, October 2021, pers. comm.), or an attempt to pass off jaguar products as tiger products to increase demand (Xiao Yu, China, November 2021, pers. comm.).

In Latin America, fats sold as jaguar fat may not be exclusively jaguar and may contain other big cats (or other wildlife species fats depending on availability (Anon., Suriname, November 2021, pers. comm.).

Characteristics of illegal trade

The illegal trade in jaguars is largely opportunistic, when poachers encounter jaguars by chance, or intentionally, when poachers explicitly search for jaguars following attacks on livestock, for illegal sport hunting activities or for trafficking purposes. Accordingly, illegal jaguar trade often involves relatively simple techniques to obtain and sell jaguar body parts, with much of the illegal trade occurring through networks of family, friends and acquaintances, and overtly at customer facing outlets (e.g. craft markets in tourist areas, jewellery shops) in villages, and rural towns, or on online platforms/social media, or through networks of trusted friends or family. However, traffickers are also taking advantage of online platforms to consolidate larger illegal trade networks and consumer bases (Arias, 2021).

The methods used to kill jaguars resemble those used during the commercial hunting of spotted cats for the fur trade until the 1970s, including specialised active and passive capture tactics and luring methods. Poached jaguars, or their body parts, are transported by roads or rivers from the forest to villages, tanneries, saddleries, shops and other facilities for processing. Seizures involving illegal international trafficking of jaguar body parts have confirmed the use of postal services and commercial air travel to smuggle jaguar body parts. While the involvement of organised criminal groups in the illegal trade in jaguars has been suggested, and few countries such as Argentina, Bolivia, and Brazil present more structured trade networks, verified examples suggest that the illegal trade in jaguars remains a largely opportunistic and informal activity. Still, the existence of more organised groups with links to other crimes, and of illegal trophy hunting operations has been identified in some countries and deserves further attention and enforcement responses (Arias, 2021).

Puma (Puma concolor)

Range Countries: Argentina; Belize; Bolivia (Plurinational States of); Brazil; Canada; Chile; Colombia; Costa Rica; Ecuador; El Salvador; French Guiana; Guatemala; Guyana; Honduras; Mexico; Nicaragua; Panama; Paraguay; Peru; Suriname; United States of America; Uruguay; Venezuela (Bolivarian Republic of)

CITES Appendix: II except for populations in Costa Rica and Panama in Appendix I, 26/11/2019).

IUCN Status: Least Concern (Assessed 2014, Nielsen et al., 2015).

IUCN wild population estimate: Unknown (Nielsen et al., 2015).

Legal Trade

According to the CITES Trade Database, a wide variety of puma (Puma concolor, also known as cougars and mountain lions) commodities are reported in trade 2010 - 2019 (Table 15). The top commodities in trade that could be equated to an individual were skins, skulls, and trophies.

Exporters reported direct trade in 1,514 skins, while importers reported 657. The majority of puma skins were reported as direct exports by Canada, with 1,497 skins exported (importers reported 638). Other exporters included Mexico and the USA, respectively reporting 11 and four skins exported. Virtually all (99%) of skins were wild-sourced and traded for either hunting (60% exporter reported), personal (10% exporter reported), or commercial purposes (30% exporter reported). Top importers of puma skins were the USA, reporting imports of 423 skins (exporters reported 945), EU Member States, collectively reporting 133 skins (exporters reported 279), and China reporting 57 skins (exporters reported 98).

Similarly, puma skulls were mainly exported by Canada, reporting 1,170 skulls between 2010 – 2019 (importers reported 552), virtually all of which were wild-sourced (99%). In contrast to puma skins, puma skulls were also exported for commercial purposes (209 reported by exporters, 172 reported by importers). The remainder was predominantly traded for hunting and personal purposes. The top importers of puma skulls were the USA, reporting imports of 354 skins (exporters reported 762), EU Member States, collectively reporting 166 skulls (exporters reported 289), and Australia reporting 20 skins (exporters reported 19). Russia and Mexico were both reported by exporters as importers of puma skins and skulls, however both Parties did not report this trade. According to exporters, Russia imported 41 skins and 15 skulls, and Mexico imported 27 skins and 26 skulls.

Trophies were mainly reported as exports by Argentina (196 trophies, importers reported 138), followed by the USA (160 trophies, importers reported 71), and Canada (102 trophies, importers reported 980). Trophies exported by Argentina were primarily reported as captive-bred (92%, 60% captive-bred reported by importers), the remainder were wild-sourced. Trophies from the USA were virtually all wild-sourced, as were trophies from Canada. Importers of trophies included the USA, reporting 870 trophies (exporters reported 165), EU Member States, reporting 205 trophies (exporters reported 155), and China, reporting 58 trophies (exporters reported 38). Exporters reported a higher number of skins and skulls in trade compared to importers, and importers reported a higher number of trophies in trade than exporters. This discrepancy may be due to differences in reporting skins and skulls of the same individual as one trophy or as separate commodities.

Parts and derivatives traded mainly comprised teeth. Canada was the only exporter reporting trade in teeth 2010 - 2019 and reported only teeth from wild sources, and the majority were reported exports for scientific purposes (99%). The USA reported importing the majority of teeth (3,870), both from wild-sources (3,226) and seized or confiscated sources (644). Of the imports reported as wild-sourced, 2,370 (73%) of these were imported for commercial purposes, and 886 (27%) for scientific purposes. Other importers of teeth included Germany (four teeth reported by both Parties), Austria and Norway, both reported as importing one tooth each by Canada.

Trade term		Importer reported	Exporter reported
Whole organism equivalent	bodies	73	203
	live	124	157
	skeletons	5	3
	skins	657	1,514
	skulls	563	1,185
	trophies	1,213	495
Parts and derivatives	bones	5	11
	carvings		1
	claws	153	172
	derivatives	1	100
	feet	3	
	fur products (large)	2	

	garments	11	8
	hair	18	1
	leather products (small)	1	
	meat	1	
	powder	2	
	rug	39	44
	skin pieces	1	1
	specimens	21	1149
	teeth	3,874	3,560

Table 15: Total puma (Puma concolor) commodities in direct trade reported by number in the period 2010 - 2019, reported at the species level (Source: CITES Trade Database)

Illegal Trade

From 2016 to 2021, 17 Parties reported a total of 43 puma seizures through CITES Illegal Trade Reports, comprising of over 100 items seized. Most seizures were reported by the USA (35%), followed by Spain (14%) and Brazil (9%) (Figure 39). Teeth and dead individuals were reported in the highest volumes where reported by number, totalling 54 (54% of all items) and 14 (14% of all items) respectively (Figure 40). Only meat (75kg) was reported to have been seized by weight.

The WiTIS database holds seizure information on 28 seizures between 2010 and 2021, comprising 47 items across 10 countries. Seizures were most frequently recorded as occurring in Argentina (29%), followed by Mexico (18%) and Poland (14%) (Figure 39). Live and dead individuals were reported in the highest volumes where reported by number, totalling 32 (68% of all items), and eight (17% of all items) respectively (Figure 40). No items were reported seized by weight.

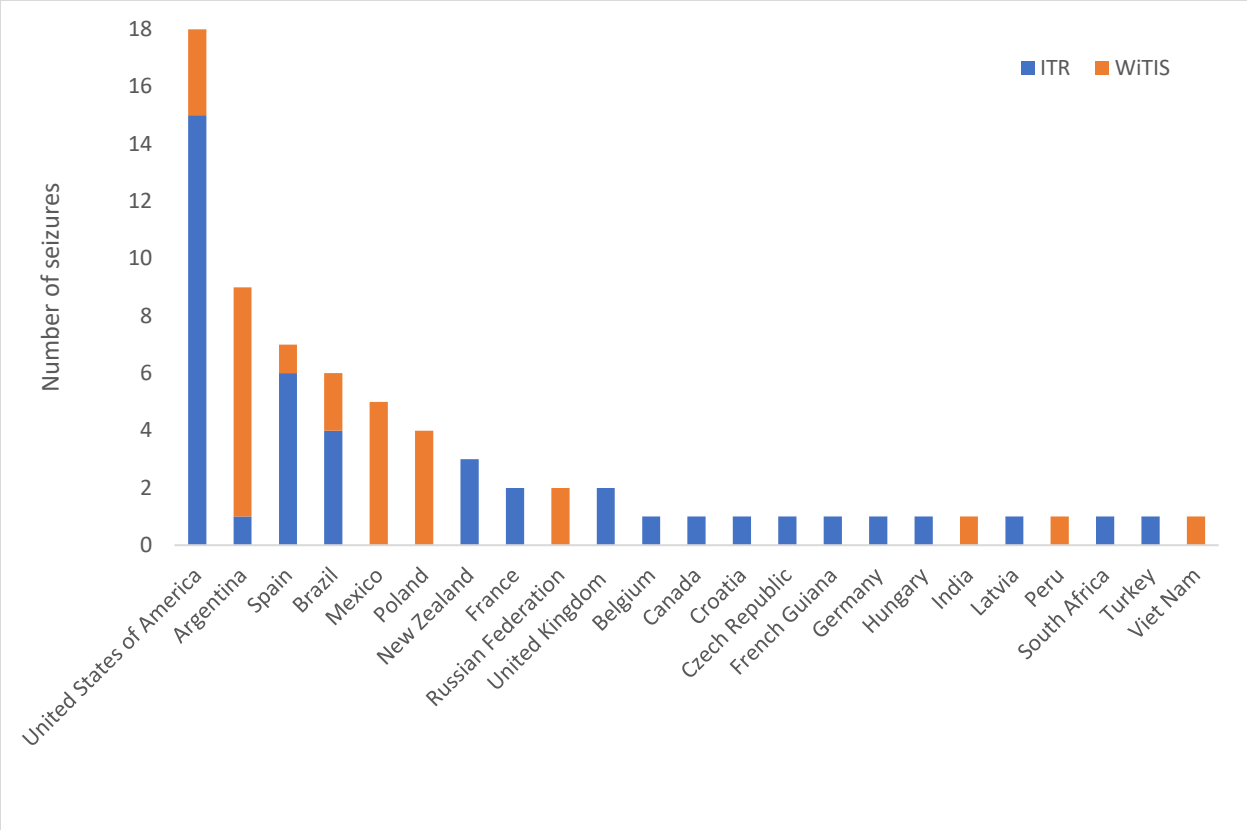

Figure 39: Countries of reported seizures of pumas (Puma concolor) in ITR 2016 - 2021 and WiTIS 2010 - 2021 (Source: WiTIS and CITES Illegal Trade Reports).

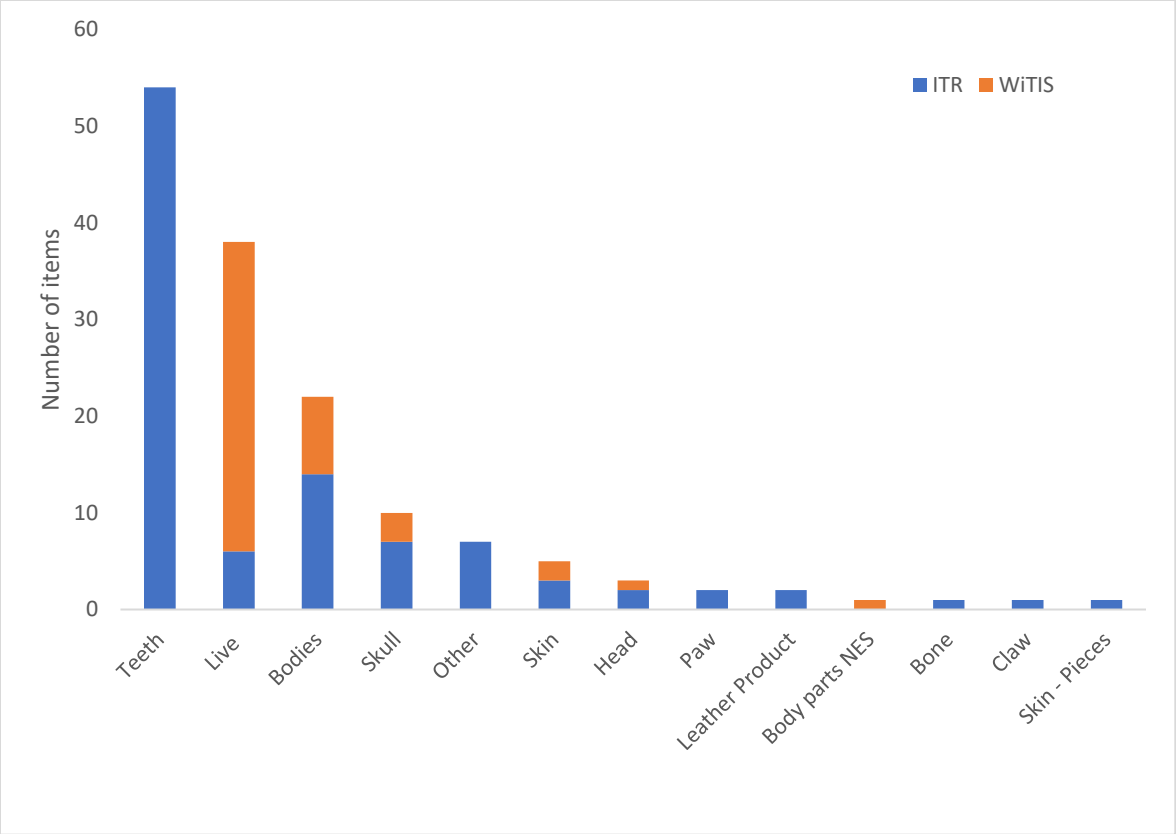

Figure 40: Puma items seized as recorded in ITR 2016 - 2021 and WiTIS 2010 - 2021 where reported by number (Source: WiTIS and CITES Illegal Trade Reports).

Role of source countries

Pumas have the widest range of any terrestrial mammal in the Northern Hemisphere (Nielsen et al., 2015), which extends from Canada to Chile (Nielsen et al., 2015). Given the size of this range, there has been debate about the taxonomy of pumas, and how many sub-species of puma should be recognised (Breitenmoser-Würsten et al., 2017). Currently all pumas are listed as CITES Appendix II (following listing of Felidae in 1977), except populations in Costa Rica and Panama, which are included in Appendix I.

Regulation of the species varies across the range (Nielsen et al., 2015). In many states and provinces in Canada and the US big game hunting of pumas is allowed, however this varies by state with some states like Florida prohibiting the hunting of the species all together (Nielsen, 2015).

Threats to pumas are from habitat loss and human-wildlife conflict from threats to livestock and fear of attack on humans. Pumas are opportunistic hunters and have been known to see running children or domestic pets as targets, although only 27 puma-related fatalities have occurred in the last 120 years. Trophy hunting in the USA is allowed with a licence, and hunters can take any part of the puma, which can then be sold as long as the part is sold with a tag from the state from which it was obtained. Pumas are also hunted using dogs in much of the USA

(Richard Beausoliel, Washing Department of Fish and Wildlife, November 2021, pers. comm.). Most puma seizures recorded in ITR occurred in the USA between 2016 - 2021, with 15 out of 43 records (Figure 39).

The role of consumer countries

There are some news anecdotes and individual seizures suggesting a small amount of trade outside the range of these species. For example, in 2019 there were nine teeth seized by Chinese authorities, which EIA suggested was concerning as it could be evidence for pumas being used as a substitute for tiger. While in Europe in 2019, there was new coverage of a seizure of a cub being kept as a pet in Germany, which had allegedly been sourced from captive sources in the Czech Republic (Schweig, 2019). Live individuals accounted for 21 out of 71 seizure records with data from CITES Illegal Trade Records and WiTIS combined, with most of these (16) recorded in WiTIS (Figure 40). Overall 38 live individuals were reported to have been seized. The majority of these seizures occurred in Argentina and Mexico (five each), with smaller volumes reported in non-range state countries. One seizure was reported in Croatia, Hungary, Latvia and Turkey by CITES Parties in ITR between 2016 - 2021 and one seizure reported in Poland and Spain in addition to two in Russia in WiTIS between 2010 - 2021.

Linkages between puma and different species of big cat

In Latin America, the range of pumas and jaguar overlap and there may be a little convergence of use types. In Costa Rica for example, there are reports that in urban areas the wealthy urban elite may still buy feline products like skins as a marker of masculinity and social prestige, a practice which may be rooted in historical traditions from the Amerindian culture (Kelly, 2018). While there may be a higher value placed on spotted cats like jaguar, pumas may also be killed for their skins (Kelly, 2018). However, the extent of this trade is unknown.

Impacts of COVID-19

COVID-19 appears to have had a variety of impacts on trade and wildlife trade overall, although its specific impacts on big cat trade are still coming to light and would require more research to fully understand.

COVID-19 moved commerce increasingly online, and many people with restricted levels of movement and reduced incomes have begun to supplement their income through online trade on platforms such as Facebook, Instagram, and elsewhere. Wildlife, including big cat products, also appears to similarly have moved online and an increase in wildlife advertisements via Facebook has been noted. On the flip side, posts on wildlife groups have noted a decline in disposable income due to COVID-19 and a resulting inability to buy wildlife products.

A lack of tourism to many locations has caused physical locations to have closed, including those that sell illegal wildlife products, as is the case in Luang Prabang and Vientiane, Lao PDR, and in many parts of Viet Nam. It is unclear how many will reopen upon resumption of tourism but indications are, from 'For Sale' signs, that many will not.

Movement restrictions appears to have also had an affect on the movement of wildlife products across borders, where land border closures and travel restrictions reduced the ability to move wildlife across borders, but continued container and freight transport allowed for movement of larger shipments of illegal wildlife throughout the pandemic. Traffickers have found a way to transport wildlife even despite border closures. For example, an investigation into a seizure of seven young tiger cubs occurring in Viet Nam in August 2021 provided evidence that the cubs originated in Lao PDR and were still able to be shipped across the border despite border closures in both countries.

Big cats have continued to be killed during the pandemic and wildlife owners or traffickers appear to be stockpiling their products expecting things to get back to normal so they can be sold elsewhere. This may be the case in South Africa, where loss of tourism and trophy hunting incomes at 'canned' hunting facilities has led to the starvation and euthanasia of dozens or more lions. A large seizure in Viet Nam of 3,100 kg of suspected lion bones in late 2021 may be the result of 'canned' hunting stockpiled.

In China, in response to the pandemic, rumours began of COVID-19 cures and preventatives containing illegal wildlife products and products were advertised on WeChat and elsewhere.

Findings

Big cats are found in nearly every continent in the world, and despite receiving protection under CITES Appendices for nearly fifty years, wild populations of big cats are under threat. In addition to poaching and trade, threats include habitat loss, climate change, and loss of prey base. While these species, cheetahs, clouded leopards, jaguars, leopards, lions, snow leopards, and tigers, have been studied separately, the effects of increased global movement of people and goods has meant that the interplay of trade on these different big cats has effects among each other as never before. CoP18 Decision 18.246 a) was adopted to conduct a study on the legal and illegal trade in big cats to determine the legal and illegal trade in lions and other big cats to better understand trends, linkages between trade in different species, and the commodities in trade which contain, or claim to contain, such specimens.

Almost every part of a big cat studied in this report is found in trade.

Demand for tigers is the biggest threat to nearly all big cat species studied, and, in many countries, demand for tigers is driving poaching and trafficking of a variety of species. The outlier of this trade is the cheetah, which is used heavily for the pet industry, and images on social media of cheetahs as part of a luxury lifestyle are increasing demand for cubs.

An increase in demand for tiger bones, teeth, and claws especially in China and Viet Nam, and a resulting decrease in tigers leading to more legal protections on the species, has led to a growth of tiger and other big cat captive breeding facilities across the world, and tigers and other species of big cats whose bones, teeth, claws, and other parts and products resemble those of tiger parts and products are trafficked to Asian markets. These big cat breeding facilities are being used to breed tigers for commercial purposes, which may conflict with CITES Decision 14.69.

Increased global movement of international enterprises and staff has increased citizens of foreign nations moving around the world who bring cultures and traditions of big cat commodification to new countries. For example, in Latin America, Chinese nationals that have moved with their company have been known to use jaguar products as a replacement for tiger products, informally referring to jaguars as “South American tiger”.

Mislabelling, whether intentional or unwittingly, occurs with every type of big cat studied for this report and along each step of the trade chain, from source mislabelling (wild vs. captive-bred), to mislabelling to slip past Customs, to mislabelling to mislead buyers.

Commodities (bones, teeth, claws) of one big cat species often resemble those of another, and when they do, replacements are common when a species becomes overharvested or opportunistically. Demand for leopard skins, for example, can be met by any cat with a spotted coat, and teeth, claws, and bones are often found mingled together.

Almost every country in a particular big cats' range becomes a source for trade in that big cat.

Human-wildlife conflict increases where habitat loss pushes human habitation closer to big cat habitat, and laws allowing for protection of livestock and property have allowed people to poach big cats while claiming human-wildlife conflict. Where in most cases the carcass must be destroyed, they are instead sometimes sold opportunistically on the market or to intermediaries where they are then sold on.

'Canned' hunting of captive-bred big cats has led to laundering where species such as tigers are part of 'canned' hunts or 'canned' hunted lions and other big cats are passed off as tigers. Demand for tigers in Asia has led to the poaching of captive-bred big cats to meet demand.

Laws governing the big cat trade are numerous and confusing, and differing levels of protection for different species of big cats, with, for example, commercial trade allowed for some and not others, and from some sources and uses and not others, has led to misunderstandings among buyers and sellers and facilitates laundering. However, where countries have enacted clear laws, which are fully enforced and citizens are aware, incidences of illegal trade in big cats have reduced.

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