

July 2020

WILDLIFE TRAFFICKING IN BRAZIL

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WILDLIFE TRAFFICKING IN BRAZIL

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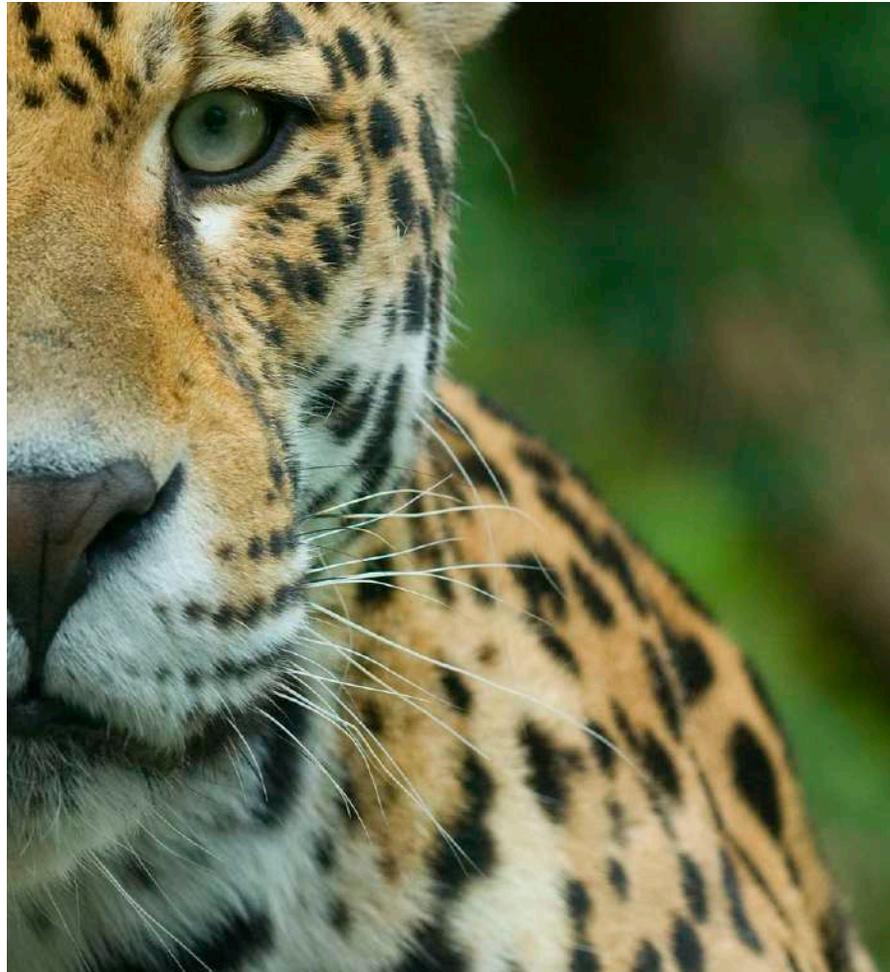


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PHASE 1 (January–March 2019) and PHASE 2 (August–November 2019)



The USAID-funded Wildlife Trafficking, Response, Assessment and Priority Setting (Wildlife TRAPS) Project is an initiative that is designed to secure a transformation in the level of co-operation between an international community of stakeholders who are impacted by illegal wildlife trade between Africa and Asia. The project is designed to increase understanding of the true character and scale of the response required, to set priorities, identify intervention points, and test non-traditional approaches with project partners.



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ACRONYMS

CBD	Convention on Biological Diversity
CeMaCAS	Centre for Management and Conservation of Wild Animals
CETAS	<i>Centro de Triagem de Animais Silvestres</i> (wildlife reception centres)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CONABIO	<i>Comissão Nacional da Biodiversidade</i> (National Biodiversity Commission, in the Ministry of the Environment)
CPAmb	<i>Comando de Policiamento Ambiental</i> (state-level environmental police force, part of the Military Police)
CRAS	<i>Centro de Recuperação de Animais Silvestres</i> (state-managed wildlife rehabilitation centres)
GIZ	<i>Gesellschaft für Technische Zusammenarbeit</i> - Germany Technical Cooperation Agency
FPIs	<i>Fiscalização Preventiva Integrada</i> (integrated crime prevention mechanism involving federal state and municipal level agencies as well as the Academia and civil society organisations)
IBAMA	<i>Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis</i> (Brazil's federal environment agency)
IBDF	<i>Instituto Brasileiro de Desenvolvimento Florestal</i> (Brazil's former federal environment agency, before IBAMA)
ICMBio	<i>Instituto Chico Mendes de Conservação da Biodiversidade</i> (Brazilian Institute responsible for federal-level protected areas and biodiversity conservation)
INC/PF	<i>Instituto Nacional de Criminalística, Polícia Federal</i> (National Forensics Institute of the Federal Police)
IWT	Illegal Wildlife Trade
JBRJ	<i>Jardim Botânico do Rio de Janeiro</i> (Rio de Janeiro Botanical Gardens)
MMA	<i>Ministério do Meio Ambiente</i> (Ministry of the Environment)
LE	Law Enforcement
MPE	<i>Ministério Público Estadual</i> (Public Prosecutor's Office – State level)
MPF	<i>Ministério Público Federal</i> (Public Prosecutor's Office – Federal level)
PRF	<i>Polícia Rodoviária Federal</i> (Federal Highway Patrol)
SAVE Brasil	<i>Sociedade para a Conservação das Aves do Brasil</i> (Society for the Conservation of Birds of Brazil, the partner organisation of BirdLife in Brazil)
SEMAs	<i>Secretarias Estaduais do Meio Ambiente</i> (state environmental agencies)
SisFAUNA	National System for Wildlife Management: management and control of facilities and activities relating to captive-held wildlife, including issuing of permits and operation of facilities
SISPASS	Digital system for management and control of the non-commercial captive breeding of passerine birds
SudWEN	South America Wildlife Enforcement Network
UnB	<i>Universidade de Brasília</i> (University of Brasilia)
UNODC	United Nations Office on Drugs and Crime
UNTOC	United Nations Convention against Transnational Organized Crime
USDOS-INL	US Department of State, Bureau of International Narcotics and Law Enforcement Affairs
USFWS	US Fish & Wildlife Service
WEN	Wildlife Enforcement Network
WWF Brasil	<i>Fundo Mundial para a Natureza</i>

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EXECUTIVE SUMMARY

Context and overview of illegal wildlife trade in Brazil

Brazil is fortunate to have the planet's largest biodiversity treasure trove, with over 13% of the globe's animal and plant life. Brazil also includes 60% of the Amazon biome, which it shares with seven other neighbouring countries (Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana and Suriname) and one overseas territory of France (French Guiana). Two of Brazil's five other major biomes—the Cerrado savannahs in the central part of the country and the Atlantic Forest along its extensive and diverse coastline—are considered global biodiversity "hotspots", although both are now severely threatened, having lost 51% and 91% of their natural vegetation cover, respectively.

To date over 117,000 species of animals and 46,000 species of plants have been described in Brazil, including 9,000 species of vertebrates, of which over 4,500 are fish, around 1,000 species of amphibians, more than 770 reptiles, almost 2,000 bird species and over 700 mammals. Nonetheless, these numbers are growing all the time as a result of frequent new discoveries. However, Brazil's 2018 Red Book of Threatened Species currently lists 1,173 wild species as either threatened with extinction or extinct. Half of these are/were found in the Atlantic Forest. One of the top threats is unsustainable wildlife take and trade.

This assessment explores Brazil's role in illegal wildlife trade (IWT) identifying past and present wildlife legislation, institutional context, species targeted by trade, and recommendations that reflect current needs and priorities for combatting IWT in the country. Additionally, there is an in-depth look at illegal trade in the Brazilian Amazon and domestic bird trade.

Information was gathered in two phases: an exploratory phase to gather up-to-date information on IWT in Brazil, and a more detailed assessment focused on illegal trade in the Brazilian Amazon with a secondary focus on the domestic bird trade. Data were collected through interview, formal requests for information, and publicly available research; qualitative analyses were carried out within each individual dataset.

Wildlife law in Brazil

Keeping wild animals as pets has been a cultural tradition inherited from the country's indigenous peoples. At the same time, European travellers to Brazil in colonial times would take home exotic species, a practice which over time became a lucrative business and the precursor of modern legal and illegal wildlife trade. Since the arrival of the Portuguese in 1500, keeping or trading wild animals remained unregulated in Brazil.

The legal status of wild animals in Brazil was first defined in the 1916 Civil Code, though wildlife trade regulation only started in 1967 with the passing of the Fauna Protection Law no. 5197. In 1975, Brazil ratified the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); however, the provisions of the Convention

were only fully translated into implementable legislation 25 years later, when Brazil's federal environment agency, IBAMA, was designated as the Convention's administrative authority. Given the Convention's non-prescriptive approach, Brazil's regulatory framework for combatting illegal wildlife trade has evolved according to the priorities of different legislatures; currently there are numerous loopholes and inconsistencies, particularly regarding the classification of illicit acts against wildlife and the severity of penalties applied.

The 1988 Federal Constitution declared that the natural environment, including wildlife, is an "environmental good of collective interest" which cannot be owned privately, and that it remains under the responsibility of the public authorities. This Constitution also introduced a new decentralised approach to assigning government responsibilities for goods defined as "collective" or of "shared responsibility." This requires all levels of government (federal, state, municipal, and Federal District) to take responsibility for wildlife protection, research, management, combatting trafficking, and application of penalties for wildlife crime offences.

In 2011, and based on the shared responsibilities principle, Complementary Law no. 140 was sanctioned defining rules for co-operation between the different levels of government, and as a result IBAMA handed over many of its former responsibilities to the states and the Federal District. However, sharing of responsibilities for wildlife protection between the federal and state levels has not been without its challenges, with frictions concerning information sharing and the distinct responsibilities of each government level.

The 1998 Environmental Crimes Law weakened offences and penalties of crimes against wildlife, although subsequent legislation (Decree 3.179/99) enabled environmental control agencies to charge offenders and issue penalties on the spot.

Legal wildlife captive breeding can reduce the illegal trade in Brazil: a false premise?

The 1967 Fauna Protection Law opened the possibility of legally breeding certain species in captivity, and over the last 50 years dozens of rules and regulations have been issued to regulate specific types of wildlife captive breeding programmes for different purposes (commercial, scientific, non-commercial, educational) targeting different taxa (caiman, marine turtles, passerine birds, primates, ornamental fish, and endangered species, amongst others).

Like many other countries around the world, captive breeding of wild animals for conservation, education, commercial and non-commercial purposes is permissible by law in Brazil, although there is extensive evidence of malpractice by many commercial wildlife breeding enterprises (e.g. caiman breeders for the leather trade) as well as by commercial and non-commercial breeders of several other species, especially birds.



Tigerleg Monkey Tree Frog © WWF-Brazil / Zig Koch

Brazil's regulatory framework for combatting illegal wildlife trade has evolved; currently there are numerous loopholes and inconsistencies, particularly regarding the classification of illicit acts against wildlife and the severity of penalties.

In Brazil, it is the legal non-commercial captive breeding of birds—strongly influenced by the widespread culture of keeping and breeding songbirds—where most illegal practices occur, through the abuse by non-commercial breeders of IBAMA’s self-declaratory monitoring system for captive bred passerine birds (SISPASS), through forging of authorisations, false registration declarations, tampering with identification rings, etc. These illicit practices allow for the laundering of wild birds poached or illegally sourced from the wild or sourced from the illegal trade. IBAMA staff interviewed for this assessment estimate that by 2015 around 75% of passerine birds on the SISPASS system had been added as a result of false declarations and forgery of rings, a total of about three million birds registered through fraudulent practices in order to launder wild or illegally traded birds. Since 1972, when the amateur keeping and breeding of wild birds was first regulated, the number of registered breeders has grown exponentially, reaching 73,000 breeders in 2003/04 and almost 350,000 in 2016.

In addition to generational customs of keeping songbirds as pets, major drivers of these illegal practices are the hugely popular bird-singing contests (legal) and bird-fight competitions (illegal), which move large sums of money and are widespread in Brazil and other countries, including the United States. Consumer preference for wild-caught specimens in order to invigorate their breeding stocks and the absence of effective controls on laundering practices fuels the illegal trade. Moreover, commercial breeding is unable to offer animals at prices that are more competitive than those from the illegal trade, with prices charged for captive-bred birds up to 10 times the prices of wild-caught and illegally sold birds, undermining the role of captive breeding in replacing the illegal trade.

Triggered by a growing suspicion that the SISPASS system was being abused, IBAMA launched a series of investigative operations including the highly successful “Operation Delivery” and “Operation Russiona Roulette”. These Operations showed that there were irregularities, such as falsified rings, factories for manufacturing falsified rings, non-existent addresses, “phantom” registration of non-existent birds, and commercialisation of birds by non-commercial breeders. Data recorded before, during and after “Operation Delivery” incursions reveal a sharp drop in requests for rings in the years when “Delivery” operations are carried out, in some cases almost 97%. This provided IBAMA with compelling evidence that requests for rings for newly hatched birds surpassed the number of existing chicks, thus creating a surplus of rings over time, which are then sold for high prices or used for laundering wild specimens. It is estimated that by 2010 registered breeders on SISPASS were holding a surplus of almost 250,000 rings.

There is enough evidence today that, whilst there are honest amateur keepers and breeders of passerine birds, there is also widespread fraud and malpractice within the category of amateur breeders. Despite the numbers of commercial passerine breeders, and potential large supply of all the most popular species, still the illegal trade in these species persists in alarmingly high numbers.



Chestnut-bellied Seed-finch

By 2015, around 75% of passerine birds on the SISPASS system had been added as a result of false declarations and forgery of rings, a total of about three million birds registered through fraudulent practices in order to launder wild or illegally traded birds.

Limitations of Brazil's wildlife protection legislation and law enforcement approach

There is a general acceptance that cultural factors play an important role in driving demand for wild animals in the wild pet trade; changing consumer behaviour is a key component to an effective strategy for combatting illegal wildlife trade (IWT) which is implemented through effective law enforcement, awareness campaigns and environmental education. Environmental authorities in Brazil, however, tend to use seizures of illegally kept animals as the principal means of addressing IWT in Brazil. This type of repression of wildlife-related crime, on its own, has not succeeded in curbing the trade nor has it managed to address the cultural issues that sustain it. Two main explanations for this beyond cultural reasons are the relatively mild penalties defined in the applicable legislation and the lack of repression on the trafficking supply chains and kingpins.

The complexity and multi-faceted nature of the trade requires a more sophisticated and multi-pronged approach to tackle the issue effectively, one that differentiates between wildlife crime offences by animal trappers in rural areas at the beginning of the trafficking chain, consumers who purchase wild animals as pets, and active wildlife trafficking gangs who set up cargos, arrange transportation, and practice fraud and forgery of documentation. The prevailing sense of impunity amongst wildlife traffickers stems from the fact that existing legislation does not consider wildlife trafficking a “serious crime”, with mild penalties that do not act as a disincentive to crimes against wildlife.

Wildlife protection legislation in Brazil is extensive, complex and detailed. At the same time, it is inadequate and imprecise, where it fails to provide a clear definition of wildlife trafficking and is unable to differentiate between professional traffickers, opportunistic animal sellers, and people who keep a few animals at home as pets. In addition, a number of ill-conceived regulations have been passed over the years, such as CONAMA Resolution 457 which rules that offenders caught trafficking wildlife or holding wild animals illegally can in certain cases be appointed as “guardians” of the confiscated animals, a clear conflict of interest that undermines the efforts of agencies responsible for seizing illegally-held wild animals.

According to experts, even a simple increase in the penalties prescribed in the 1998 Environmental Crimes Law would strengthen efforts to combat IWT in Brazil, as this would render this a “serious crime” allowing investigators to use investigative tools such as phone tapping. Others are of the opinion that adding the term “wildlife” to existing legislation (e.g. Article 180-A of the Penal Code) provides a better route to tackling wildlife crime. Other stakeholders argue that a completely new criminal type needs to be defined, including a specific description of conducts related to wildlife trafficking offences and penalties proportional to the damage and impacts caused.

Nonetheless, the shortcomings of Brazil's wildlife protection legislation, although a contributing factor to the relentless rates of biodiversity loss, cannot alone be held responsible for the ongoing illegal trade in birds, reptiles and mammals in the country—lack of resources, capacity and integration between agencies and forces are all contributing factors as well.

Illegal wildlife trade in Brazil: an overview and some numbers

Hard evidence of the size of the international illegal wildlife trade to and from Brazil is scant, although there have been seizures of internationally traded *Podocnemis* spp. (river turtles), ornamental fish, Psittacidae eggs and nestlings, Jaguar *Panthera onca* parts, some *Adelphobates* spp. (poison dart frogs), other amphibians, shark fins, reptile skins and leather. Some of these are discussed in more detail in the section on Amazon illegal





wildlife trade whilst others are beyond the scope of this assessment (e.g. shark fin, non-Amazon amphibians and reptiles).

In terms of the domestic illegal wildlife trade in Brazil, up-to-date systematised figures, either official or academic, are not available due to the fragmented, incomplete and often inconsistent datasets held by the various governmental agencies and police forces responsible for enforcing wildlife protection legislation. For this reason, overall figures on wildlife trafficking in Brazil mentioned in the literature reviewed for this assessment tend to be based on decades-old estimates of numbers of wild animals removed from the wild across the country, smuggled, commercialised and purchased by end-consumers, mostly in Brazil but also abroad. These estimates were based on assumed pre-sale mortality rates resulting from capture methods, abandoned young in the wild, transport and captivity conditions, as well as losses due to discarded low quality wildlife products (e.g. reptile skins).

Because more precise estimates of the numbers of animals taken from the wild are difficult to obtain, seizure data are used as a proxy to assessing illegal wildlife trade in Brazil. This assessment provides the results of several partial analyses mentioned in the literature (collated during Phase 1), as well as new analysis of open datasets accessible on the websites of official agencies and police forces at the federal, state and municipal levels, and new information obtained through Freedom Of Information Act type requests (known in Brazil as e-sic requests). The data obtained from these sources are intended to provide a snapshot of the size and composition of the illegal trade in wildlife in general in Brazil, including the main source and destination regions:

- In 2008 alone, the IBAMA-managed wildlife reception centres (CETAS) across the country received over 60,000 wild animals (the majority resulting from seizures). Three main reception centres in São Paulo state (one IBAMA-managed, one managed by the state government, one managed by the municipal government) account for 80–90% of all wild animals received in the state. However, this figure probably masks the actual number of seized animals as these numbers exclude wildlife parts, products and a considerable number of animals released by enforcement officers immediately after being seized. (Destro *et al.*, 2012)
- A 12-year study (2001–2012) using data compiled by CPAmb, the Environmental Military Police Force of the State of São Paulo, revealed that this police force alone had seized over 250,000 animals in the state over this period, about 25,000 each year (SAVE Brasil, 2017).
- A study by Beck *et al.*, 2017 (cited in SAVE Brasil, 2017) also used CPAmb data, and found that over a four-year period (2012 to 2015) the force responded to 33,580 individual reports of offences involving wild animals. Over 90% of all cases involved wild birds, followed by mammals (7%) and reptiles (3%).
- The CPAmb, seized 32,420 animals in 2017; 32,509 in 2018; and 17,111 until July 2019—a total of 82,040 between January 2017 and August 2019 from this police force alone in São Paulo state (obtained via e-SIC requests)
- According to one IBAMA interviewee, in 2018 more than 72,000 wild animals were received by the IBAMA-managed CETAS across Brazil, of which 60–80% were apprehended by the state-level CPAmb police force in various states, another indication of the important role this police force plays in combatting IWT in the country.
- Main source regions are impoverished rural areas with well-preserved vegetation cover, often in the proximity of protected areas located mainly in the northeast of Brazil (states of Bahia, Pernambuco, Paraíba, Piauí and Ceará), and the Amazon region in the north, as well as the states of Mato Grosso and Goiás in the central-west (Alves, 2013; Destro, 2018). Often the illegal sale of wild animals is the only source of income for thousands of poor families in rural areas (Destro, 2018; Destro *et al.*, 2019)

- The main destination region for wild animals captured in the northeast, Amazon and central-west regions has historically been the southeast region of Brazil (São Paulo, Rio de Janeiro and Minas Gerais) and the southern-most state of Rio Grande do Sul (Alves, 2013), a southwards flow that uses mainly roads for transportation of trafficked animals, except in the Amazon region where rivers are the main transit routes. However, information obtained for this assessment from IBAMA and PRF interviewees report the growth of a wildlife trafficking route from south/southeast/midwest to the northeast and north of Brazil. An up-to-date map of major source and destination areas, as well as the current trafficking routes is provided in the main document (Destro, 2018).
- Placement of the large numbers of animals seized from the trade by numerous enforcement agencies and police forces is a huge challenge. Police forces are allowed by law to release animals that are confiscated immediately at or near the sites where they were captured. Many thousands of animals are released in this way, and not always in accordance with appropriate guidance and safeguards. If animals cannot be released at the site of seizure, they are referred to wildlife reception centres (CETAS and CRAS), which however tend to be over-crowded and under-resourced, and which can only take a limited number of animals. Despite existing criticism surrounding the release of seized animals back into the wild, there is extensive evidence of successful release of seized birds in natural and semi-natural habitats.

The domestic illegal bird trade: numbers and target species

Whilst a major focus for this assessment is on illegal wildlife trade in the Brazilian Amazon, a secondary focus on the current status of the vast domestic illegal bird trade is provided.

Brazil's domestic illegal bird trade takes place mainly in the northeast, southeast and central-west regions of Brazil. An initial analysis of bird data from IBAMA's Open Data Portal¹ carried out for this assessment for the years 2018 and 2019 (partial) revealed a total of 21 species of birds with more than 100 individuals seized over this period. The assessment lists the 15 species with the largest numbers of birds seized by IBAMA in nine states of the northeast (Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Sergipe, Alagoas, Bahia), four states in the southeast (Minas Gerais, São Paulo, Rio de Janeiro, Espírito Santo) and two states in the central-west (Goiás and Mato Grosso do Sul). The top five species listed are the Saffron Finch *Sicalis flaveola*, Red-cowled Cardinal *Paroaria dominicana*, Yellow-bellied Seedeater *Sporophila nigricollis*, Ruddy Ground-dove *Columbina talpacoti* and Green-winged Saltator *Saltator similis*. However, if all *Sporophila* species were to be considered as a single group, they would jump to second position. The highly endangered Lear's Macaw *Anodorhynchus leari*, Great-billed Seed-finch *Sporophila maximiliani* and Yellow Cardinal *Gubernatrix cristata* also appeared in the IBAMA open data for seized birds in 2018 and 2019, all of which fetch very high prices in the domestic and international markets.

The IBAMA open data analysis for the 2018/2019 (partial) period reveals that the Saffron Finch was by far the most seized species, with 31% of the total number of birds seized (3,115 individuals), an indication of the importance of this species in the domestic illegal bird trade in Brazil. The popular Turquoise-fronted Amazon *Amazona aestiva* was the 13th most seized bird in the trade according to these data (229 individuals); however the numbers of individuals of this species seized by state level police forces is in fact much higher than those detected through this IBAMA open data.

Seizure data collated by the Environmental Military Police of São Paulo (CPAmb-SP) were obtained for this assessment via an e-SIC information request. Of the over 256,000 wild animals seized from 2008 to 2016, about 86% were birds, corroborating other data sources. CPAmb-SP data from 2017 to 2019 includes seizures of endangered species including Harpy Eagle *Harpia harpyja*, Hyacinth Macaw *Anodorhynchus hyacinthinus*, Jaguar *Panthera onca* and the highly endangered Yellow Cardinal *Gubernatrix cristata*. Based on the CPAmb-SP data, the most frequently seized (50 or more specimens seized from January 2017 to July 2019) totalled 66 species. The top 15 most seized bird species during the period reveal that again, the Saffron Finch appears as the species with the largest numbers of seized specimens, followed

¹IBAMA's Open Data Portal is a public use digital platform managed by IBAMA created in 2017.

Figure 1. Key states involved in Brazil's domestic illegal bird trade



Brazil's domestic illegal bird trade takes place mainly in the northeast, southeast and central-west regions of Brazil.

Top 5 species in Brazil's domestic illegal bird trade

Between 2018–2019, 21 species of birds with more than 100 individuals were seized



Saffron Finch
Sicalis flaveola



Red-cowled Cardinal
Paroaria dominicana



Yellow-bellied Seedeater
Sporophila nigricollis



Ruddy Ground-dove
Columbina talpacoti



Green-winged Saltator
Saltator similis

Highly endangered species involved in Brazil's illegal bird trade



Lear's Macaw
Anodorhynchus leari



Great-billed Seed-finch
Sporophila maximiliani



Yellow Cardinal
Gubernatrix cristata

by the Double-collared Seedeater *Sporophila caerulescens* and the Green-winged Saltator. The Hooded Siskin *Spinus magellanicus* was ranked as the fourth species in terms of numbers of seized individuals during the period.

In the CPAmb-SP data (January 2017–July 2019), the Turquoise-fronted Amazon *Amazona aestiva* appeared in fifth, with the staggering average of over 1,000 seized birds per year, a very significant amount, given that these figures relate to just one of several police forces engaged in combatting IWT in the state of São Paulo, and that most *A. aestiva* seized in São Paulo are believed to come from a single region in Mato Grosso do Sul state.

A literature review on available bird data carried out for this assessment (Phase 1) confirms the findings of the IBAMA and CPAmb bird data analysis:

- 24 of the 30 most confiscated species from the illegal trade from 2005–2009 were birds, which comprise 80% of the domestic illegal wildlife trade, and 81% of all animals received by CETAS reception centres, mostly passerines
- About 80% of all birds seized by several police forces between 2002 and 2012 belong to only 10 species (Destro *et al.*, 2012), although at least 295 species of birds are commercialised in the illegal pet trade in Brazil (Alves *et al.*, 2013).
- Eleven-year data gathered by one wildlife reception centre (CRAS/PET in São Paulo) from 2003–2013 revealed that over 47,000 birds from 387 species had been received at the centre, with 60% belonging to just 10 species. The largest group of birds received at wildlife reception centres are passerines (perching birds, mostly songbirds), followed by parrots (SAVE Brasil, 2017).
- The most frequently received species in the SAVE Brasil analysis was the Saffron Finch which topped the list every year over the ten-year period except for one year (2003). The Green-winged Saltator and the Double-collared Seedeater are also amongst the top three most frequently received birds. These three species account for 30% of all confiscated birds received at two reception centres in São Paulo (CRAS/PET and DEPAVE-3). The Emberezidae seed-eating family account for about half of the birds arriving at the CRAS/PET centre (23,305 individuals from 48 species).
- The second most frequently received bird family in the SAVE Brasil analysis was the Psittacidae; although parrots were the most diverse group of birds brought to the centre (55 species), only one species, the Turquoise-fronted Amazon *Amazona aestiva* was amongst the top ten most frequently received bird species overall (eight place). More recent data from CPMamb-SP (the Environmental Military Police of São Paulo state) places *A. aestiva* in fourth place in terms of numbers of seized birds for this species in the last two and a half years.
- Approximately 12% of all birds received (5,831) by the CRAS/PET were endangered species (globally, nationally or on the official list of endangered species of the State of São Paulo), including nine species of Psittacidae and two globally threatened passerines: the Buffy-fronted Seedeater *Sporophila frontalis* and the Temminck's Seedeater *Sporophila falcirostris*.



Saffron Finch

24 of the 30 most confiscated species from the illegal trade from 2005–2009 were birds, which comprise 80% of the domestic illegal wildlife trade.



ILLEGAL WILDLIFE TRADE IN THE AMAZON REGION

Wildlife trade in the Amazon

The extensive, inaccessible and porous borders of Brazil with its eight Amazon neighbours (over 13,000 km long) and a lack of resources, capacity and co-ordination between enforcement agencies in these countries means that the transboundary illegal trafficking of fauna and flora is virtually free of controls. The smuggling of wildlife across the borders of Amazon countries is often facilitated by the fact that different Amazon countries assign distinct legal status to wildlife within their territories; whilst in Brazil wild-caught animals cannot be owned or commercialised, in Suriname and Guyana wildlife can be legally commercialised (these countries have different quota systems for the capture and export of wild animals, which traffickers operating across the borders between the two countries exploit to their advantage). There is also increasing evidence that in some parts of the border between Brazil and other Amazon countries (such as the triple border between Brazil, Colombia and Peru), smuggling of wildlife goes hand-in-hand with the smuggling of drugs and other illicit goods.

Size and composition of the illegal trade in the Brazilian Amazon

In the Brazilian Amazon, the relationship between local wildlife and local people is influenced by the relatively recent occupation of the region, the close ties with indigenous peoples and other traditional communities, the vastness of the region (accessible mostly by rivers), and the high levels of poverty. In this region large numbers of wild animals (both terrestrial and freshwater species) are captured and consumed for subsistence or illegally commercialised, mostly for the local and regional markets, but also for the national and international markets. Live wild animals (particularly parrots and various species of primates) are often kept as pets (“xerimbabos” in the Amazon region), a habit inherited from indigenous peoples.

Data on wildlife trafficking in and from the Brazilian Amazon is notoriously scarce, and whatever data do exist are scattered across the multiple law enforcement agencies (federal, state) responsible for combatting illegal wildlife trade in the region; therefore, available data are not consolidated. Some specific aspects of the illegal trade, such as the trade in bird feathers for the production of “indigenous” artefacts for the tourism industry and the production of creams and oils that use wildlife parts need to be better understood (for example, creams made from parts of Pink River Dolphin *Inia geoffrensis* and river turtles *Podocnemis spp.*).

Although datasets from IBAMA and ICMBio are far from perfect, they comprise some of the most detailed data available; even a simple analysis of the trends such as those presented here reveal important insights into the illegal wildlife trade in the Brazilian Amazon and the rest of Brazil, as well as suitable approaches for more effectively combatting IWT in the wider Amazon region.

Based on a cut of the dataset (eliminating seizures with few animals or small numbers kept illegally in a domestic environment to focus on the most relevant seizures), the total number of species in all seizures during the period 2012–2019 was 160 species of which 38% were fish (food or ornamental), 34% were birds (food, handicrafts or captivity), 15% were mammals (food, captivity or skins), 12% reptiles (food, captivity, collections), with less than 1% unidentified amphibians (however, turtles, terrapins and tortoises are sometimes incorrectly classified as amphibians) and less than 1% unidentified butterflies. However, following a second cut (only species illegally traded in large numbers and/or those more frequently traded during the period), the total number of species trafficked in the Amazon region fell to 72, which confirms the assumption that the complete dataset includes a large number of species with small numbers of individuals per species, as well as species that were only seized a few times during the seven-year period defined for the analysis (i.e. infrequently). Of these 72 species, 53% were fish (food and ornamental), 18% were mammals (food and captivity), 15% were birds and 14% reptiles.

Nevertheless, despite all its limitations, the analysis of data from IBAMA's Open Data portal and ICMBio's seizure data did reveal which species and groups of animals appear most frequently and in the largest numbers and volumes in seizures of illegally caught and commercialised wild animals in the Amazon region:



River turtles and their eggs



Ornamental fish



Fish for consumption



Wild meat²

²"Wild Meat" defined for this report as "terrestrial wildlife meat"



Zebra Pleco

The total number of species in all seizures during the period 2012–2019 (partial) was 160, of which:

38% were fish (food or ornamental)

34% were birds (food, handicrafts or captivity)

15% were mammals (food, captivity or skins)

12% reptiles (food, captivity, collections),

<1% unidentified amphibians

<1% unidentified butterflies.

1. River turtles and their eggs:

Smuggling of river turtles and their eggs is probably the largest wildlife trade issue in the Brazilian Amazon, in volume and numbers, and is relevant for both the domestic market and regional markets in neighbouring Amazon countries (including Colombia, Peru, and Venezuela). The capture of *Podocnemis spp.* river turtles and collection of their eggs for food and commercialisation has a long history in the Amazon region and strong cultural ties, and egg collection is believed to have led to the extinction of the South American river turtle in the Upper Amazon e.g. in Venezuela. Trafficking of Amazon river turtles to Asia for traditional medicine, the pet trade, decorative use (shells) and for consumption as food is also reported.



South American River Turtle

Analysis of aggregated data from IBAMA's Open Data portal on numbers of seized individuals from 2012 to September 2019 show a predominance of South American River Turtle *Podocnemis expansa* (29%), Yellow-spotted River Turtle *Podocnemis unifilis* (27%), and 13% were unspecified Testudines; all species seized from illegal sale, transport or captivity. Of the total number of seized eggs during this period, 46% were Yellow-spotted River Turtle eggs *Podocnemis unifilis* and 24% were South American River Turtle eggs *Podocnemis expansa*, and 28% were eggs of unidentified Testudines.

Interestingly, the majority of seizures of river turtles and eggs took place inside protected areas by ICMBio (agency responsible for protected area management and control), highlighting the need for strengthening the agency's enforcement capacity, including better training in species identification, and promoting a social inclusion approach through the development of economic alternatives for local communities that live in the surrounding areas, as a strategy to reduce over-exploitation of river turtles in the Amazon region. Captive breeding initiatives for river turtles and caiman, as well as tanneries and manufacturing facilities have been established in the region, however, use of these facilities for laundering illegally sourced animals is prevalent. The Federal Police are developing cutting-edge (and inexpensive) stable isotope analyses to differentiate captive from wild-caught animals.

2. Ornamental fish:

The aggregated data for ornamental fish revealed 30 different species plus a category for unidentified species. Many of the species were recorded only once in a single seizure or in low numbers. Less common species were eliminated from the analysis, with the focus on species that appear in more than one seizure, with more than 500 individuals per seizure. This resulted in a list of nine top species of ornamental fish in terms of numbers of seized fish, together with a large proportion of fish in the "unidentified species" category. Of the nine species with identification, the vast majority belonged to a single species, the Cardinal Tetra *Paracheirodon axelrodi*.



Cardinal Tetra

The remaining eight species, including the hugely popular Zebra Pleco *Hypancistrus zebra* and four species of the genus *Corydoras* (known as Cory catfish), correspond to less than a quarter of total numbers seized. The presence of the Zebra Pleco in IBAMA and ICMBio seizures is significant, given that exports of this rare diminutive catfish, which is endemic to the "large bend" portion of the Xingu River, have been regulated. The Zebra Pleco is listed in CITES Appendix III, and although not assessed by the IUCN Red List, is already listed as endangered in Brazil's Red Book of Brazilian Endangered Fauna (ICMBio/MMA, 2018), due to the illegal capture of large numbers of this fish for the international aquarium market, and more recently due to the construction of the Belo Monte dam. This species is also smuggled across the border from Brazil to Colombia and Peru (thousands of km from their native Xingu river). Colombia is a large exporter of reportedly legal and captive bred ornamental fish.

It is interesting to note that the Silver Arowana *Osteoglossum bicirrhosum* is listed as both an ornamental fish and fish for consumption as food. The Asian species, known as the Golden Arowana *Scleropages formosus* is listed in CITES Appendix I and considered endangered by IUCN, and is one of the most valuable species of ornamental fish (US\$2,000 per individual). This has resulted in greater demand for South American arowanas. The Black Arowana *Osteoglossum ferreirai* is protected in Colombia and cannot be collected. The Silver Arowana *O. bicirrhosum* is more commonly found in seizures than the Black Arowana.

Many seizures of ornamental fish, especially those carried out by the Federal Police in airports, are not included in the IBAMA or ICMBio datasets, highlighting the need for more integrated data recording by the various agencies and police forces responsible for enforcement and control.

3. Fish for consumption:

By far, the largest volumes of fishes for consumption in IBAMA and ICMBio seizures during the period are from a single species: Arapaima (or Pirarucu) *Arapaima gigas*. The Arapaima has first class market status in the Amazon region and is an important protein source in the diet of people living along the river, but it is also exported internationally, mainly to the US. It is listed in CITES as Appendix II. Its skin is extensively used as leather for a multitude of products, which are exported, and its scales are used to produce decorative items, jewellery and other artefacts. Arapaima is widely farmed in the Amazon, not only in Brazil but in other Amazon countries as well, notably Peru.



Pirarucu

Removing Arapaima from the analysis reveals the relative importance of three other prevalent species in seizures of fish for consumption: Tambaqui *Colossoma macropomum* (the largest fruit- and seed-eating characin in the Amazon, with first class market status), Piracatinga *Calophysus macropterus* (third class market status, also known as Vulture Catfish due to its scavenger diet) and the Silver Arowana *Osteoglossum bicirrhosum* (second class market status—the male practices mouth-brooding of the young). These species were selected for analysis in this assessment due to their role in regional and international illegal trade of fish for consumption, so there were other species seized in high volumes which were not selected for this analysis. The Piracatinga fishery in Brazil is driven by strong demand from Colombia and involves the smuggling of large volumes of this species across the border; this fishery poses a particular conservation problem for river dolphins (*Inia spp.* and *Sotalia spp.*) and Caiman *Caiman crocodilus*, which are killed in large numbers and used as bait in this profitable fishery.

4. Wild Meat

Illegal trade in wild meat is prevalent in the entire Amazon region, both domestically and cross-border regions. Interviewees of IBAMA and the Federal Police claim that recurrent seizures of wild meat from several species are always comprised of several tonnes. However, almost all records available are of multi-species seizures, without detail of weight per species, making analyses very challenging. The most common species were Capybara *Hydrochoerus hydrochaeris*, Lowland Tapir *Tapirus terrestris*, and Lowland Paca (Agouti) *Cuniculus paca*.



Capybara © Jaime Rojo / WWF-US

Capture sites and major routes for trafficking wildlife in the Amazon

The porous borders between Brazil and neighbouring Amazon countries are still mostly covered by inaccessible tropical forest and riverine ecosystems; these provide unconstrained opportunities for smuggling illegal goods within and beyond the vast Amazon region, including wildlife, illicit drugs and illegally extracted minerals such as gold. Even where formal border controls exist, these are unable to control the flow of illegal products, which cross borders mostly by boat or light aircraft, and where existing, by road. Amazon wildlife and their products are also smuggled to the central and south-eastern parts of the country.

Some of the main identified trafficking routes include the triple border region between Brazil, Colombia and Peru, in the upper reaches of the Amazon river, where the border towns of Tabatinga (Brazil) and neighbouring Leticia (Colombia) across the road are considered a particularly relevant hub. In this border region, wild animals such as river turtles and fish for consumption are transported and sold in large numbers / volumes. Wildlife trafficking is also prevalent along the Purus river (river turtles and fish for consumption for regional market), the Rio Negro river (ornamental fish for the international market) and the Madeira river.

Another major wildlife trafficking route is the border between the Brazilian state of Amapá in the northeastern Amazon and French Guiana (especially birds and wild meat). There are extensive and uncontrolled borders between Brazil, Guyana and Suriname and this was also mentioned in various interviews. In the border region between Suriname and Brazil where there is historical evidence of laundering and subsequent export of illegally-sourced reptiles (e.g. Emerald Tree Boas *Corallus caninus*) and amphibians (e.g. the colourful Dyeing Poison Frog *Dendrobates tinctorius*) captured on the Brazilian side of the border and sold to traders in Suriname. Suriname, Guyana and Peru are the only countries in South America that have legislation allowing for the legal trade and export of wild-caught birds.

An important inverse trafficking route involves the smuggling of passerine songbirds from Venezuela and Peru into Brazil. The most frequently smuggled birds in this type of trade are subspecies of the Saffron Finch *Sicalis flaveola*—*S. flaveola flaveola* (which occurs in Colombia, Venezuela, Guyana, Suriname, French Guiana and Trinidad) and *S. flaveola valida* (which occurs in Peru and Ecuador). *S. flaveola valida* and *S. flaveola flaveola* are bigger in size than the Brazilian subspecies and trafficked to Brazil to be hybridised with the local subspecies, so that the bigger and more aggressive offspring can be used in the illegal Saffron Finch fighting competitions (similar to dog and cockerel fighting). There appears to be a strong trade of other species of songbirds (Chestnut-bellied Seed-Finch *Sporophila angolensis* and the Broad-billed Seed-Finch *Sporophila maximiliani*) along the borders of Brazil, French Guiana, Suriname and Guyana.

Airports of state capitals in the Amazon region are mentioned by IBAMA and Federal Police interviewees as important exit gateways for Amazon wildlife trafficking, in particular Manaus airport (potentially due to more effective detection and law enforcement), where there have been several seizures of Psittacidae eggs (parrots and macaws) destined for the European market (including Portugal) via large international airports in Rio de Janeiro and São Paulo.

An interesting question that concerns IWT in South America which was raised in the 2016 World Wildlife Crime Report (UNODC) is the fact that given that CITES is the only current framework to regulate the international trade of wild species, those species which are locally protected, harvested illegally, but not listed in CITES, are easily traded internationally after crossing national borders. And this is the case for several heavily trafficked Brazilian species. It is important for a discussion on how protection of wild species can go above and beyond CITES to encompass those species that are locally protected, illegal by origin, but non-CITES listed species.

Figure 2.
Capture sites and major routes for trafficking wildlife in the Amazon



A close-up photograph of a jaguar's face, showing its distinctive spotted fur, whiskers, and a sharp canine tooth. A semi-transparent dark green text box is overlaid on the right side of the image, containing text about jaguar trafficking. The background is a solid green color.

Trafficking of jaguar parts in the Amazon region

Following its listing in CITES Appendix I in 1975, the previously rampant commercial killing of Jaguars *Panthera onca* for their pelts for European and USA markets declined significantly. However, the direct killings of jaguars by poachers across their range continued to be motivated mainly by conflict with humans over jaguar attacks on livestock, and by fear of jaguar attacks on people in remote areas. A new threat to jaguars has emerged in recent years—the deliberate killing of jaguars for their parts (fangs, skulls, bones, skins, paws, meat—seemingly destined for markets in China and possibly Southeast Asia). Poaching jaguars for their parts is on the increase in some parts of the Amazon region (currently the most important stronghold for the species across its range), in particular in Brazil, Bolivia, Peru and the Guianas, but is also taking place in other parts of its range (e.g. Mesoamerica).

In Brazil, the first investigations into jaguar trafficking are underway, with preliminary findings that at least 30 seizures of jaguar parts (mostly pelts) took place over the last five years. A single IBAMA raid on a poacher's home in Curianópolis in the Brazilian Amazon state of Pará in 2016 found body parts of 19 jaguars in a fridge, including whole heads, skulls, pelts and paws. A recent news piece (Eco, 2019) reported the prosecution of a group of jaguar poachers whose wildlife crime operations in the Brazilian Amazon state of Acre over the last 30 years are estimated to have resulted in the killing of over 1,000 jaguars. Jaguar killings for their parts are also reported in the Amazon regions of Suriname, Bolivia and Peru. Jaguar National Action Plans have been drawn up for approximately half of the 18 jaguar range countries, including Brazil, however not all of the plans are being implemented.

Wildlife tourism in the Amazon

Most tourists who travel to the Amazon region expect to see an abundance of wildlife in the places they visit and are often disappointed to find that sightings of wild birds, dolphins and mammals are rare and hard to come by. The number of “eco-lodges” in the Brazilian Amazon has grown considerably, in particular in locations with relatively easy access from Manaus. Although a few lodges play by the rules and avoid keeping or deliberately attracting wild animals to their grounds for the entertainment of tourists, many so-called “eco-lodges” offer “wildlife experiences”, including swimming with river dolphins and visits to communities who raise tame wild animals for selfie opportunities. IBAMA agents interviewed for this assessment reported on the so-called “dolphin tourism” (“*turismo do boto*”) which takes place in several locations close to Manaus, where people pay a fee to swim with dolphins, feed dolphins, take “selfies” with dolphins, etc. These activities are detrimental to dolphins and other wild animals kept in captivity on site, as well as relying on child labour and other illegal activities. Wild animals kept in captivity also pose a potential threat to health and safety of the people who handle them, through lack of awareness of wild animal handling and management, as well as the potential health and safety issues, through the transmission of diseases.

Tackling the trade: information and implementation gaps

Despite the many advances and progress made by the official agencies and police forces responsible for tackling the illegal wildlife trade in Brazil, as well as the valuable efforts of academic institutions to understand better the trade and of civil society organisations to support enforcement and education, a number of gaps exist in the information and implementation needs necessary to bring the trade under control.

In the Amazon region, a distinct lack of co-ordination and co-operation between the enforcement agencies and police forces of neighboring Amazon countries undermines their individual efforts to curb the illegal trade in wildlife within their territories. More direct links and partnerships are needed between these agencies/forces and relevant international agencies, including the US Fish & Wildlife Service, the US Department of State Bureau of International Narcotics and Law Enforcement Affairs, the International Technical Assistance Programme of the US Department of the Interior (DOI-ITAP), the South America Wildlife Enforcement Network for South America (SudWEN), and the United Nations Office on Drugs and Crime (UNODC), amongst others. In terms of information gaps, guidelines and tools need to be developed for a more accurate recording of seizure data across agencies, in conjunction with ongoing training of enforcement agents. A more thorough assessment of the extent and impacts of wildlife tourism is also needed, and more/better information needs to be gathered on the legal status of wildlife, wildlife legislation and trade data of all eight Amazon countries and French Guiana.

With regards to the domestic legal and illegal songbird trade, a reliable identification marking system for improved control of captive-bred stocks (e.g. standardised electronic chips, use of DNA paternity tests and stable

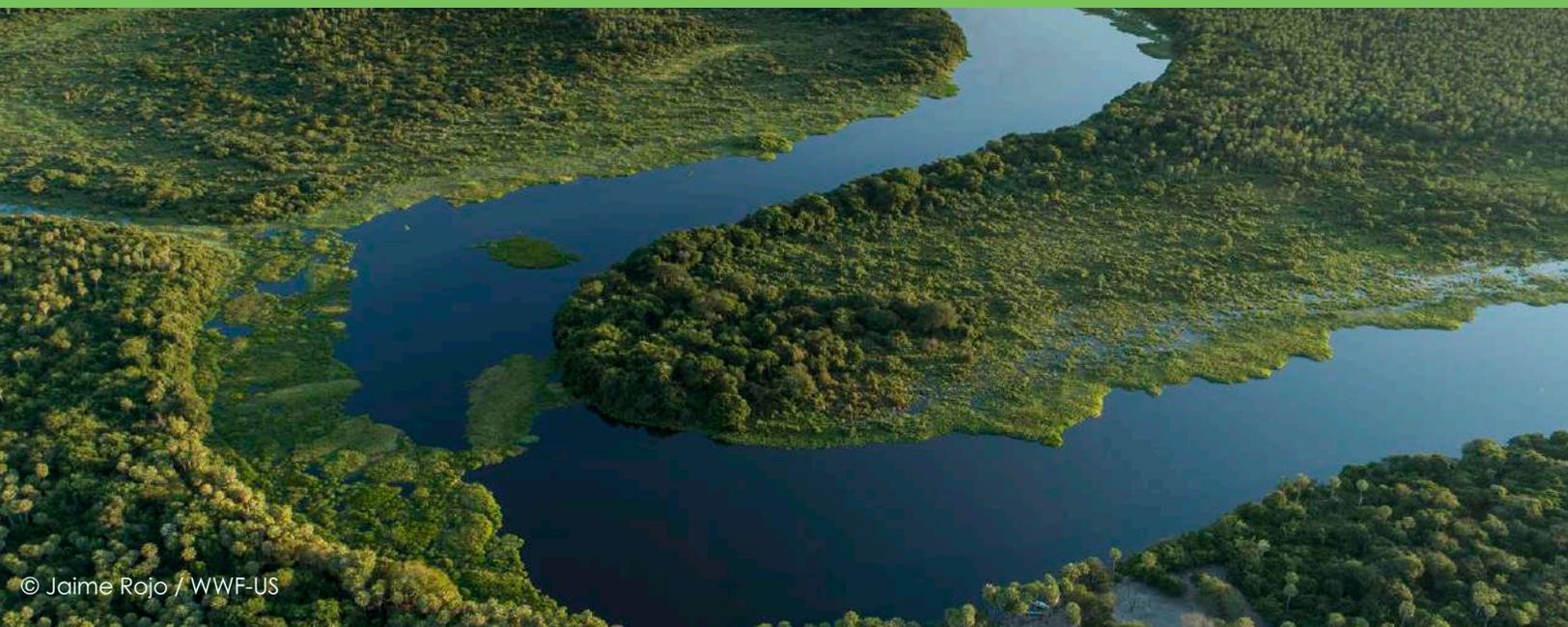


A distinct lack of co-ordination and co-operation between the enforcement agencies and police forces of neighboring Amazon countries undermines their individual efforts to curb the illegal trade in wildlife within their territories.

isotope analysis) needs to be developed, piloted and rolled-out across all states. Lessons learned from successful community-engagement initiatives in wildlife management and tourism can inform similar initiatives targeting rural communities that currently make a living from trapping and commercialising wild animals. Bird identification guides need to be reviewed and their use adopted by enforcement agencies and police forces across the country, and training provided by civil society organisations.

Information and implementation gaps for tackling IWT in Brazil in general include the need to map efforts and enforcement issues in ports, airports, roads, border areas, markets, urban areas, protected areas, buffer zones and other relevant locations used by traffickers. Detailed maps of current main capture sites need to be produced. An updated analysis of CITES data to 2019 needs to be conducted.

FINDINGS AND RECOMMENDATIONS



Findings and recommendations

One of the most striking findings emerging from interviews, opinion pieces, relevant literature and news articles is the perception amongst professionals and researchers that IWT in Brazil is very widespread (involving millions of animals and large volumes of wildlife products). Moreover, wildlife experts and professionals are unanimous in pointing out that pervasive and uncontrolled capture of wild animals and plants for the illegal trade is having grave consequences for Brazilian biodiversity, the national economy, the rule of law and good governance. Therefore, while analysed data do not seem to reflect the consensual perception of the high volume and negative impacts of the illegal wildlife trade in Brazil, it is clear that this is a serious issue, and the lack of corroboration is likely more linked to poor data collection and management than to a lack of wildlife trade itself.

Given the issues identified in this assessment, several recommendations can be made in relation to taking the work forward. These include suggestions offered by the experts interviewed during Phase 1 and Phase 2, as well as our conclusions based on the data analysis, research of institutions' websites, responses from e-SIC requests, and information gathering on media platforms.



1. Political will

First and foremost, Federal, State and Municipal level governments need to regard wildlife trafficking as the serious crime that it is, and recognise the harmful impacts that it has on several fronts. Counter wildlife trafficking efforts can no longer depend on the personal motivation of governmental officers and need to start to be part of the government's policies. To accomplish this, it is necessary to create political will and insert this issue on the agendas of governmental institutions (environmental agencies, education agencies, public health agencies, research institutions, law enforcement agencies, congress, etc) at different levels (Municipal, State and National). Specific public policies to address the issue need to be developed, as well as clear targets, goals and measures of success. In order to attain this, there is consensus across the spectrum of environment agencies, legislators, environmental law experts, police forces, and independent IWT experts of the importance of developing a Brazilian Strategy for Combatting Wildlife Trafficking. The initial steps have already been undertaken. An inter-institutional group³ was convened in late 2017 to kick-start a process for the development of a Brazilian strategy for combating IWT. However, creating political will is not just about holding meetings and conducting assessments, but understanding that lines of financing need to be created to hire personnel, to buy equipment, to conduct training, and to enhance systems. It will not be possible effectively to combat wildlife trafficking without governmental investment. **The key is for governments to understand the difference between expenditure and investment, and the value of healthy ecosystems and biodiversity.**

2. Legislation

It is also very clear that the way the current wildlife trade legislation in Brazil is applied does not effectively curb wildlife trafficking. It is critical to apply the existing legislation more adequately, offering the settlement agreement only to offenders who fulfil all the requirements. To accomplish this, it is necessary to work with Federal and State level Public Prosecutors and Delegados to convey the relevance of offender record searching and develop a way to enable access of state-level legal processes in other states. This means that if an offender has been offered a settlement agreement by the Prosecution in one state, Prosecution offices of other states need to be able to access this information. Furthermore, in cases in which the trafficker is clearly professional and the illegal activities are recurrent, articles of the Penal Code (155, 180, 288, 296, 334, among others) should be used. Several recommendations regarding the use of current Brazilian legislation in wildlife trade cases were included in the final document of the "Legislation and Wildlife Trafficking" workshop⁴ (held in São Paulo in May 2019), which is available online.⁵

Furthermore, specific recommendations related to legislation are:

- To support the efforts of agencies and organisations working to strengthen environmental criminal law and harmonise existing legislation
- In order to be perceived as a serious crime, wildlife trafficking needs to be defined as such in national and state legislation and regulations; this requires changes to existing legislation on the subject including a clearer criminal classification ("tipificação") of wildlife trafficking crimes that makes a distinction between professional traffickers/ringleaders and individuals who keep wildlife at home; changes are also needed to

³Participating organisations included the Ministry of Environment, IBAMA, ICMBio, House of Representatives of the National Congress, Public Prosecutor's Office of São Paulo State, Freeland Brasil, US Embassy

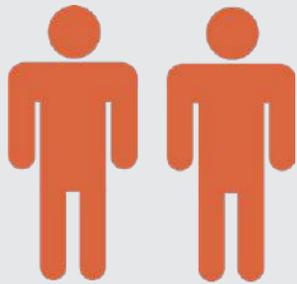
⁴The IWT legislation workshop was held in São Paulo in May 2019 and was organised by Freeland Brasil in collaboration with the US Department of State, the US Department of Justice, the US Forest Service, the Public Prosecution Office of the state of São Paulo (MP-SP), the Association of Federal Judges of Brazil (AJUFE) and the Association of Brazilian Environmental Public Prosecutors. Participants included federal public prosecutors, state prosecutors, senior officials from the Federal Police, and Civil Police, judges from the Federal Court and State Court, IBAMA, ICMBio, state environmental agencies, US Department of Justice officials and Freeland Brasil staff

⁵https://da195228-8619-4908-b937-872d589e15e5.filesusr.com/ugd/16429e_618353bfa95949fa9e363da50c96883c.pdf



ensure that penalties are proportional to the gravity of the crime, including longer prison sentences for more serious, repeat offences (currently the maximum prison sentence is one year).

- Assess options for re-categorising IWT offences as “serious crimes”, as recommended by Resolution no. 69/314 of the 2015 UN General Assembly (“Tackling illicit trafficking in wildlife”), and as defined by the 2000 UN Convention against Transnational Organized Crime (UNTOC), and recently included as a political commitment in the Lima Declaration by the governments attending the First High Level Conference on Illegal Wildlife Trade in the Americas, of which Brazil is a signatory.
- Support the provision of legal mechanisms within international agreements and conventions that act as disincentives for IWT, including the categorisation of crimes punishable by extradition and freezing of assets.
- Develop a framework to protect locally/nationally protected species, illegal by origin but not listed in CITES



3. Staff and capacity

The most important step for effective IWT initiatives is to change the mindset of governments about staffing relevant agencies, with special attention to border control agencies and to CETAS. It is crucial to support the provision of capacity, guidance, training and equipment for agents and police officers to do their jobs; training and capacity building need to be recurring activities (not one-off events) due to the turn-over of police force placements, and to reinforce learnings. Without human resources, continuous capacity building and equipment, combatting illegal wildlife trade will continue to be ineffective.

4. Data and Co-operation

It is necessary for all IWT agencies to develop an integrated system in which data will be consolidated and duplicate entries identified. This would ideally involve IBAMA, ICMBio, Federal Police, Federal Highway Patrol, Federal Prosecution, State level Environmental Agencies, State level Environmental Military Polices, State level Civil Polices, State Highway Patrol, State level Prosecution and Federal, State, Municipal and privately managed triage and rehabilitation centres. It is important to mention, however, that simply integrating existing systems may not be sufficient, since their efficiency and the type of information collected does not allow for a clearer understanding of wildlife trafficking in Brazil, as was revealed through the data analysis carried out for this assessment. Also, besides high-quality data and data sharing between institutions, it is necessary to act upon gathered data, meaning intelligence analyses need to be conducted and collaboration between IWT agencies needs to be improved and institutionalised.

Therefore, specific recommendations concerning data and institutional co-operation are to:

- Improve data gathering and management needs, including data analysis and compatible systems.
- Support co-operation and joint actions for the gathering, compilation, analysis and sharing of relevant information.
- Support the implementation of national-level systems for wildlife



management and control, for registration and reporting environmental offences, for the seizure and placement of confiscated animals.

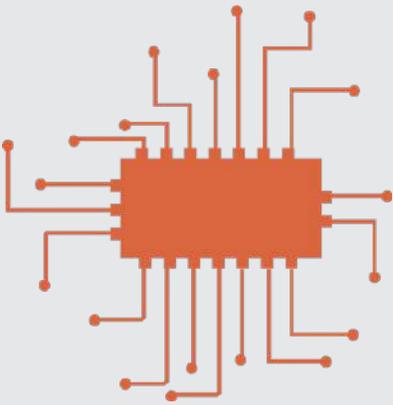
- Support and stimulate the development of international agreements to combat IWT in Brazil and promote collaboration between national agencies, national and international NGOs and the global private sector, aiming at sharing information and engaging in joint training programmes and collaborations.
- Create/increase awareness amongst legislators, judges and enforcement agents of how they can fully apply existing legislation on other criminal offences, including fencing (“receptação”), contraband and smuggling, and forgery of official seals.
- Assess the potential for the wide adoption of the FPI model (the highly successful Integrated Crime Prevention initiative implemented in the Brazilian states that are part of the São Francisco river basin)
- Engage relevant stakeholders in a dialogue aimed at addressing existing co-ordination issues between federal and state agencies responsible for combatting IWT in Brazil, so as to tackle IWT more effectively in the countries (start with a coalition of the willing)

5. Technology and traceability

It is imperative that the best origin traceability methods possible are applied to curb the currently widespread laundering of wild animals. This involves investing in the development and supporting initiatives by IBAMA to create safer rings (and other types of marks for other groups of animals) that will prevent fraud and forgery, invest in the development and application of analyses of stable isotopes for origin assignment and for differentiating captive from wild-caught animals, and invest in the use of DNA paternity tests as a way to control the captive stock of animals of wild species effectively. Although the regulation and control of wildlife management is now state-based in Brazil, the illegal trade is inter-state and international, which requires IBAMA to retain part of the control and wildlife law enforcement mandate. There needs to be a national control system for wildlife management (even if the system is an integration of state’s systems).

Enhancing origin and traceability would be a wide initiative pertaining many governmental levels, from developing legislation and regulations to agencies which fund research, academia, and Ministries of Environment (IBAMA / ICMBio), Justice (Federal Police), as well as State Level Environmental Agencies and Public Security Secretariats (State-level police forces). For example:

- Legislation and regulations would have to be issued creating standardised markings to be used by commercial breeders, or requesting breeders and keepers to use newly developed rings, even if this would bring costs, or requesting breeders to pay for the costs of paternity tests conducted by law enforcement to detect poached laundered animals. Breeders/keepers would need to accept that IBAMA still has responsibility of overseeing CITES-listed species, inter-state and international transit, among others. Therefore, there must be a federal system and standardised markings for all states of the federation. Above all, the industry which exploits wildlife needs to accept regulations rather than pressure for the activity to be de-regulated;
- There needs to be funding (Federal and State level governments) for basic science to be developed by academia—molecular markers, population genetics studies, isoscapes, or others.



- CETAS and/or forensic facilities (Federal and State levels) need to be capable (equipped, staffed, trained and resourced) to develop and conduct tests (DNA paternity or stable isotopes)

In this context, it is relevant to:

- Promote the use of modern technologies in the identification of illicit activities regarding IWT, including DNA analysis, standard digital marking systems for captive animals, a unified database on traffickers and IWT shared by all federal and state agencies, development of tools including smartphone applications, etc
- Support and strengthen capacities of wildlife reception centres (CETAS, CRAS, etc) to receive, triage, rehabilitate and release seized animals, including, where possible, the repatriation of animals from other parts of the country/other countries, through mainstreaming the application of the existing science on genetics and stable isotopes
- Help to strengthen existing international agreements for wildlife protection, and to work more effectively with CITES to enhance traceability of legally traded wild animals.
- Enhance origin traceability, and invest in the development of more robust individual marking methods for legally held wild animals (electronic marking, genetics profile etc)
- Enhance detection capacity of laundering attempts: extensive ongoing training on using the SISPASS system, and in ring forensics; investment in DNA paternity tests and analyses of stable isotopes; role out Operation Delivery⁶ to all states (checking hatchings and nestlings before providing rings) so it becomes the rule, rather than the exception, and invest in more frequent repeat operations; create uniform individual identification marking tags/rings for the commercial captive breeding industry, including tanneries and producers of leather goods
- Work with airport and port systems that detect guns and drugs to detect wildlife



6. Assessments and investigation

Periodic assessments and analyses of wildlife trafficking related data should be conducted as a way to diagnose the evolution of the trade, as well as the effectiveness of policies and solutions put in place. These assessments would be useful to making necessary adaptations, corrections and changes to the actions being developed, as well as to define species to focus on, which might change from time to time. Before a consolidated repository of information can exist, this process needs to be done internally by each agency (environmental and law enforcement, at municipal, state and federal levels), and centralised by one agency which could consolidate all data, ideally the Ministry of Environment.

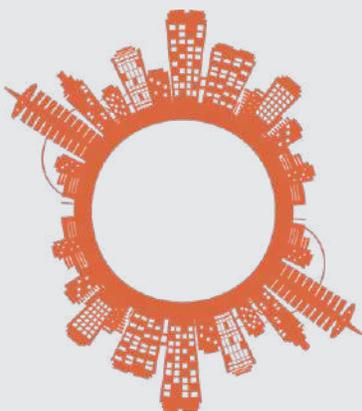
- Carry out an in-depth assessment of the links of IWT with other forms of organised crime, in particular in transboundary areas in the Amazon and Pantanal regions
- Carry out a detailed assessment of efforts to tackle IWT in airports, ports, and along major inter-state road systems, aiming at better understanding the opportunities and challenges associated with detecting and acting on the trafficking of wild animals



7. Demand reduction

Supply exists where there is demand for a product or service. Ultimately, the responsibility for the IWT belongs to the consumer market which, knowingly or not, supports the illegal supply chain of wildlife trafficking, mainly based on the argument that the use of wildlife is part of their culture. Not only is there an urgent need to create awareness by government and civil society organisations in Brazil concerning the responsibility of consumers related to the illegal supply chain, but it is also necessary to start an in-depth discussion with society that cultures can and need to evolve. Therefore, in order to decrease IWT, it is relevant to engage relevant Ministries including Education and Environment, along with strategic private sector players and civil society organisations in order to:

- Reduce demand by enhancing awareness and other social behaviour change communication strategies for wildlife trade; implement medium- and long-term environmental education programmes that drive through the message that “people sell wild animals because someone is buying them”; education and social reprehension will be the driving forces of behaviour change.
- Support the development of education materials to include content on wildlife protection so as to enhance awareness of illegal trade.
- Help carry out campaigns targeting the general public on the laws and regulations for wildlife protection.
- Encourage the development of partnerships between government agencies, the private sector and civil society organisations aimed at enhancing awareness and reducing demand.

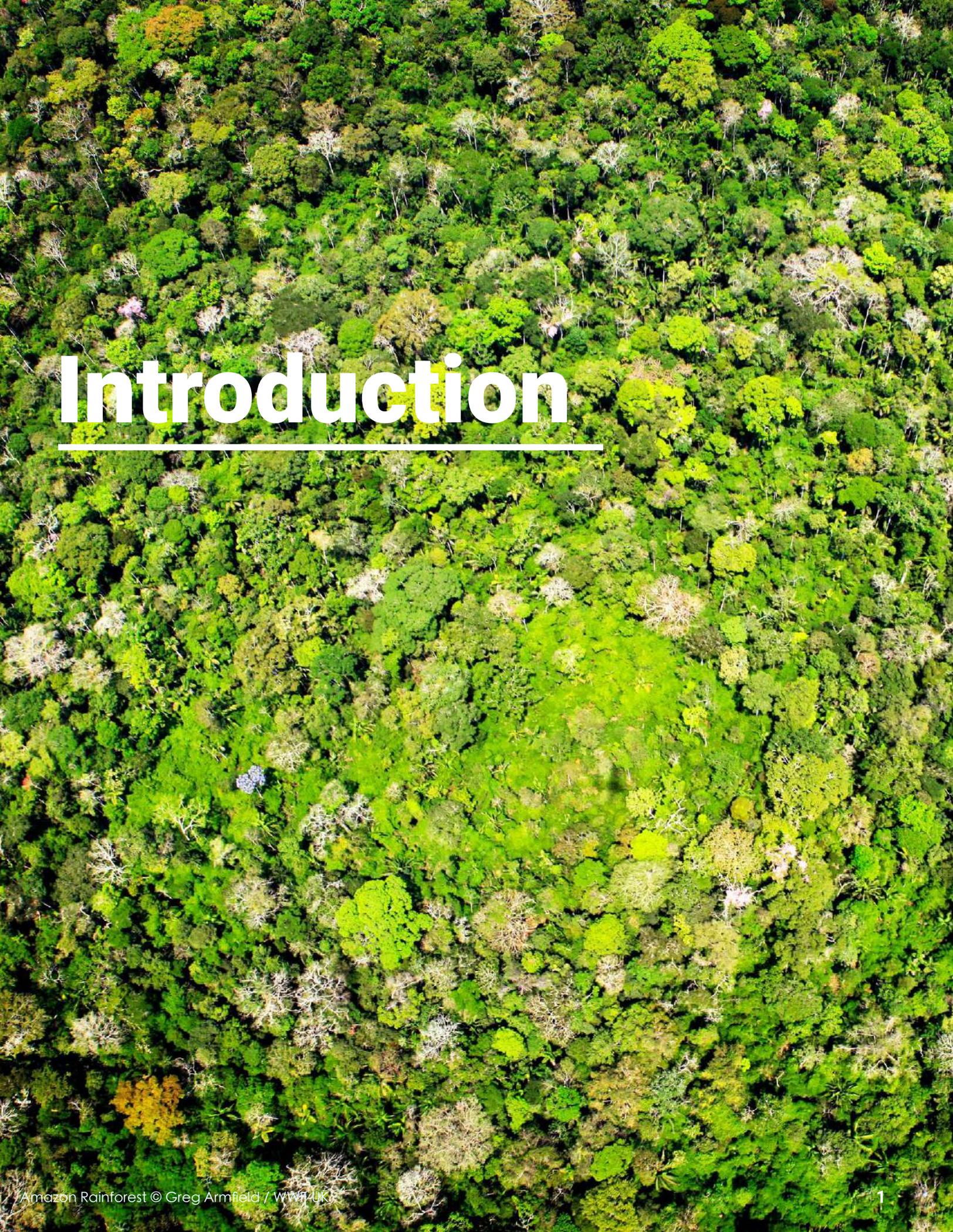


8. Social issues

It will not be possible to combat the illegal collection of wildlife in source areas without dealing with issues such as poverty and social inclusion, and this does not mean relying on a few local projects led by international organisations and NGOs involving a few co-operatives with local communities. This requires effective public policies and state presence supplying education, health, access to clean water and sanitation, as well as professional training and incentives, for the creation of stable sources of income. The burden of combating the illegal exploitation of wildlife lies in the hands of society as a whole, represented by the state. Effective efforts specifically to reduce illegal collection and poaching of wildlife in source areas would need to involve different governmental levels (Federal, State, Municipal), and involve public health and education agencies, and the development of initiatives for sustainable sources of income, specific for each location.

In this context, it is relevant to:

- Implement income-generation programmes in rural and urban areas near major capture sites (sites are known), targeting impoverished communities that rely on wild animal trapping for their livelihoods (either as food or as a source of cash), and disincentivise local people to trap animals and collect eggs and hatchlings.

An aerial photograph of a dense Amazon rainforest, showing a vast expanse of green trees and vegetation. The word "Introduction" is written in large, white, sans-serif font across the upper middle of the image, underlined with a white horizontal line.

Introduction



INTRODUCTION

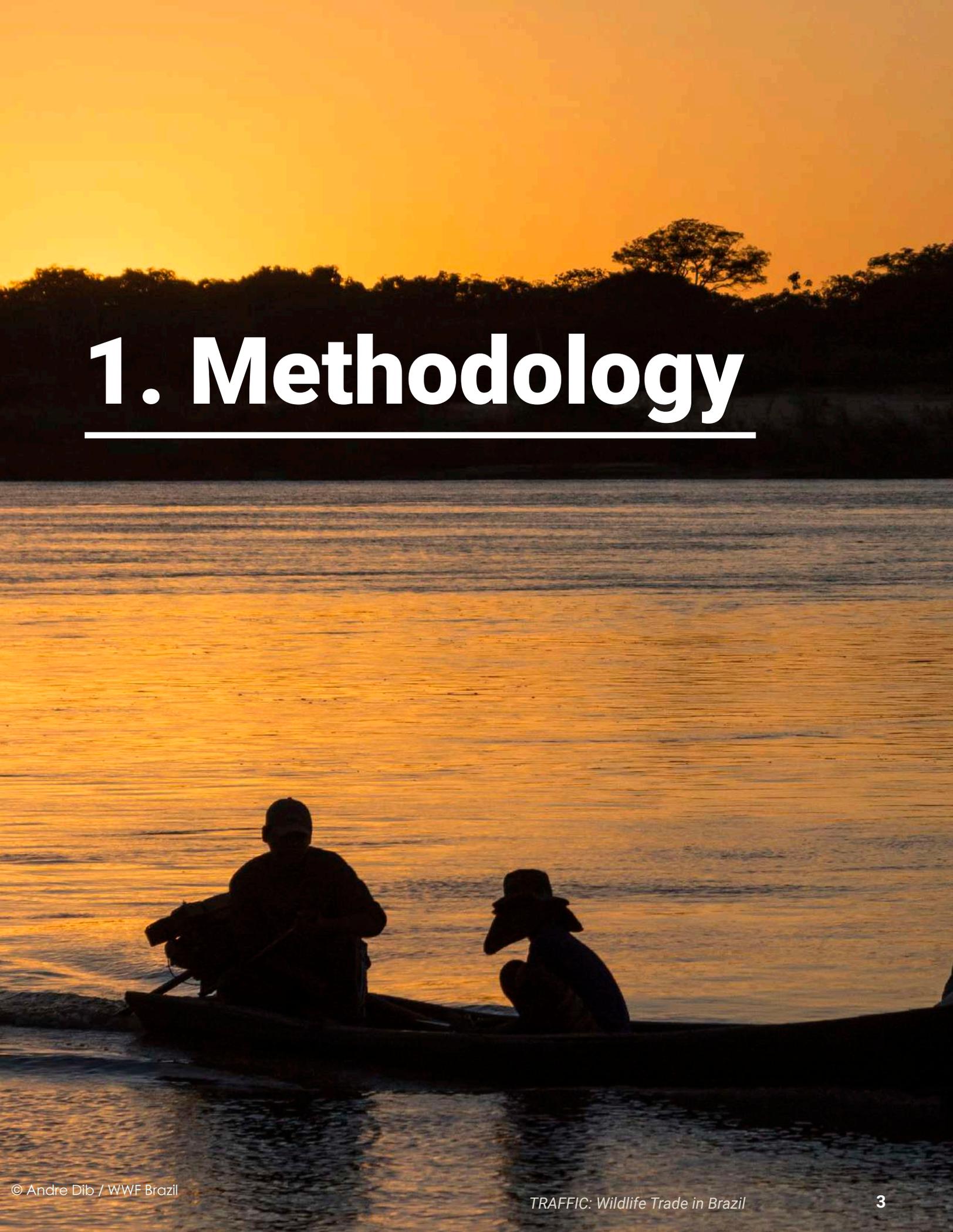
The Wildlife Trafficking Assessment for Brazil is part of IUCN's Wildlife Trafficking, Assessment, Response, and Priority Setting Project (Wildlife TRAPS), implemented by TRAFFIC and IUCN with support from USAID.

The Brazil assessment was planned in two-phases:

- Phase 1 was carried out by independent consultant Sandra Charity from December 2018 to April 2019, consisting of a preliminary assessment of the illegal wildlife trade (IWT) in Brazil and production of a Phase 1 report with preliminary findings and recommendations. Phase 1 focused on the domestic demand for wildlife (estimated to account for more than 80% of Brazil's IWT), and provided preliminary information on priority species, relevant geographies, hotspots, transit routes and destination markets, a summary of the relevant legal framework, and a snapshot of the organisations and institutions currently working on the issue in Brazil. It also listed data gaps and proposed next steps and recommendations intended to inform a more in-depth assessment of certain aspects of the trade (Phase 2).
- Phase 2 was carried out by two principal consultants (Sandra Charity and Juliana Machado Ferreira) from August to December 2019, and was designed to provide a more-in depth assessment of two key areas: a major focus on IWT in the Amazon region, and a secondary focus on the domestic bird trade (legal and illegal).

This final report integrates the findings and recommendations from Phase 1 and Phase 2 of the Brazil assessment.

The assessment aims to build on and complement the report on the South American bird trade (covering six South American countries, including Brazil) produced by former Head of TRAFFIC's South America office and published in December 2018 by TRAFFIC International (Ortiz-von Halle, 2018).

A photograph of a sunset over a body of water. The sky is a warm orange and yellow, with the sun low on the horizon. The water reflects the light, creating a shimmering effect. In the foreground, two people are silhouetted against the water, sitting in a small boat. The background shows a dark line of trees on the shore.

1. Methodology

METHODOLOGY

This report was produced in two phases: an exploratory phase (December 2018–April 2019) to gather up-to-date information on illegal wildlife trade⁶ (IWT) in Brazil, and a more in-depth assessment (August–December 2019) focused on IWT in the Brazilian Amazon region with a secondary focus on the illegal bird trade in the northeast/southeast/central-west of Brazil. Data were collected through interviews with IWT specialists, literature research (grey and peer reviewed, as well as news articles), formal requests for information, and research of publicly available information on wildlife trafficking cases. Given that the data sources utilised have different structures, it was not possible to perform statistical comparisons. Therefore, qualitative analyses were carried out within each individual database.

Over the combined two phases, 16 interviews were conducted with key contacts in relevant government agencies: the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), the Chico Mendes Institute for Biodiversity Conservation (ICMBio), Federal Police, Federal Highway Patrol, the State Prosecutor’s Office and three NGOs. Since almost all interviewees requested anonymity, answers were randomised and are non-attributable. The main purpose of conducting the interviews was to get a sense of the most pressing issues concerning IWT in Brazil, based on the experience of the interviewees, and, most importantly to identify what data exists, whether existing data reflects reality (*i.e.* is wildlife trafficking going undetected), why the size of the illegal trade is perceived as much larger than the recorded illegal trade, and potential ways to break the “poor data–poor enforcement” cycle (scarce data result in a lack of prioritisation which leads to a lack of political will, inadequate policy formulation, ill-informed decision-making and resource allocation, which in turn results in low enforcement effort, fewer seizures and continued scarce data).

Formal requests for data were issued via the Freedom of Information Act (FOIA) and via similar mechanisms in Brazil (*Sistema Eletrônico do Serviço de Informações ao Cidadão*, e-SIC). These requests resulted in data sharing by the Federal Police, Federal Highway Patrol, IBAMA, ICMBio, and the U.S. Fish and Wildlife Service.

Data entries in wildlife-related offence reports (“*autos de infração*”) were accessed via IBAMA’s Open Data Portal. For the Amazon, analysis of these data focused on reports of seizures of all wildlife species in eight of the nine states within the Brazilian Legal Amazon region (Acre, Amapá, Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins). For the domestic bird trade, the analysis focused on reports of seizures of Psittacidae and passerine birds in seven Brazilian states in the northeast (Alagoas, Rio Grande do Norte, Sergipe, Ceará, Bahia, Pernambuco, Paraíba, plus Maranhão, formally part of the Legal Amazon region but biogeographically more similar to the states of the northeast), four Brazilian states in the southeast (São Paulo, Minas Gerais, Rio de Janeiro, Espírito Santo), and the state of Mato Grosso do Sul in the central-west.

Data were also collected from the official websites of relevant government agencies and police forces responsible for monitoring and controlling IWT at the state (same states mentioned above) and federal levels, as well as from news articles in local and national media (including online news articles, specialised blogs and bulletins). Given the secondary focus on the illegal bird trade (as per

⁶For the purposes of this assessment, we use an adapted version of TRAFFIC’s definition of wildlife trade. (Addition by the authors in **bold**.) “Any **illegal possession**, sale or exchange of wild animal and plant resources by people. This can involve live animals and plants, or a diverse range of products needed or prized by humans—including skins, medicinal ingredients, tourist curios, timber, fish and other food products” (TRAFFIC International 2008)



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the brief for this assessment), the search for seizure information on birds from news articles was limited to the states of Bahia, Pernambuco, Paraíba, Piauí, São Paulo, Minas Gerais, Rio de Janeiro and Mato Grosso do Sul (conducted by consultants Janaína Monteiro and Railiane Abreu).

Lastly, a search in the “On the Trail” bulletins (published by French NGO Robin des Bois⁷) was conducted on all quarterly issues from July 2013 to January 2019. These bulletins aim to track illegal wildlife trade globally and are freely available on the internet.

The main challenges and limitations to data collection included the following:

(1) Research was conducted during the first year of the current Brazilian government’s administration change, while staff in key positions were being replaced and the policies of governmental institutions were being reviewed. In this context, all interviewees requested anonymity;

(2) Data submitted through an e-SIC often lacked critical information, such as dates and species. Some of the e-SIC responses claimed they had no way of filtering data; other e-SIC responses included a total number of specimens seized per year (but no breakdown by species);

(3) Data obtained on the Brazil Open Data Portal (“*Portal Brasileiro de Dados Abertos*”⁸) were presented as two separate spreadsheets, both of which contained thousands of lines of entries. In order to enable analysis of these data, the spreadsheets had to be linked by an IT specialist so that date filters could be applied. Moreover, errors in the entries or inconsistencies in the information required a manual analysis of each selected entry. Duplicate entries were common (for example, more than one offender per event) and had to be identified and removed. As a result, the qualitative analysis required considerable knowledge about the species in question, as well as their common and scientific names, and could not be automatically generated. Although IBAMA’s data do not reflect all the seizures of illegal wildlife (for example, it does not include seizure information relating to the Military Environmental Police of each state, the Civil Police, Federal Police, Federal Highway Patrol, etc), it was the best quality and most complete source of information obtained;

(4) ICMBio’s data (obtained via e-SIC) contained very few records of bird seizures. Most of the entries lacked information on species, while others described multi-species seizures, without details on the number of specimens per seizure. Almost all records included just common names. Therefore, a decision was made not to utilise this data source for the bird section.

⁷ <http://robindesbois.org/en/tag/on-the-trail/>

⁸ Brazilian Open Data Portal - <http://www.dados.gov.br>

2. Status of Brazil's Biodiversity



STATUS OF BRAZIL'S BIODIVERSITY (ICMBio/MMA, 2018)⁹

2.1 Overview

Brazil is the world's fifth largest country and the number one mega-diversity country on the planet (Mittermeier *et al.*, 1997), with over 13% of the globe's animal and plant life (Lewinsohn and Prado, 2005). Brazil has six important biomes: Amazon, Caatinga, Cerrado, Mata Atlântica, Pampa and Pantanal, as well as the world's largest river basin in the Amazon. Both the Cerrado and the Atlantic Forest biomes are biodiversity "hotspots", with exceptionally high species richness and a large number of endemic species (Myers *et al.*, 2000), however both biomes are severely threatened, having lost 51% and 91% of their natural vegetation cover, respectively.

The Brazilian coastline is over 7,400 km long, with the Coastal-Marine zone covering 3.5 million km² and including exceptionally diverse ecosystems, including mangroves, coral reefs, sand dune systems, "restingas" (coastal strips with medium-sized trees and shrubs on sandy, nutrient-poor soils), beaches, rocky cliffs, lagoons and estuaries. New coastal-marine ecosystems are still being discovered today, such as the extraordinary discovery in April 2016 of a 1,000 km long coral reef system close to the mouth of the Amazon river, on the northern coast of Brazil.

Currently, 117,096 native animals (Boeger *et al.*, 2017) and 46,447 native plants (JBRJ, 2017) in Brazil have been described, including almost 9,000 species of vertebrates and 94,000 species of arthropods. These numbers are constantly being updated as a result of frequent new species discoveries and taxonomic revisions. Insects comprise the largest group, with around 83,000 described species, with a further 6,200 species of spiders, and 3,100 species of molluscs.

Amongst the vertebrates, 4,545 species of fish have been recorded (by comparison, there are less than 500 species of fish in the whole of Europe), 1,080 species of amphibians, 773 species of reptiles, 1,814 species of birds and 701 mammals. Actual numbers are undoubtedly higher, especially for fish, given that new species are described every time unstudied areas are surveyed. Even in the case of relatively well-known taxa, such as mammals, new species are still being discovered or re-validated relatively frequently. A study (Amaral *et al.*, 2016) of all new species discovered in the Amazon region over a two-year period (2014–2015) revealed that in this short time, six new species of mammals were discovered or re-validated in the Brazilian Amazon alone, including the Araguaia Pink River Dolphin *Inia araguaiaensis*.

With these numbers, Brazil currently has the world's largest numbers of species of amphibians and primates, ranks second in numbers of mammals, and third in numbers of birds and reptiles. Brazil is also the sixth in numbers of endemic vertebrate species, with 57% of its amphibians and 37% of its reptiles occurring nowhere else on Earth.



Figure 3. Brazilian biomes (Source: IBGE – Brazilian Institute of Geography and Statistics)

⁹ Much of the data in this section are based on the most recent edition (ICMBio/MMA, 2018) of the Red Book of Endangered Brazilian Fauna, published by ICMBio and launched in Brasilia in January 2019

2.2 Tools for protecting Brazil's biodiversity¹⁰

Brazil's concern about its biodiversity, and especially its native fauna, began in the 1960s. The country has produced numerous "endangered species lists" and periodic updates to those lists since 1968, with an increasing number of threatened species identified each time. The most recent official list was published in 2014 by the Ministry of the Environment (MMA)¹¹ which listed 1,173 species threatened with extinction. This was the first-ever assessment of the status and risk of extinction of all Brazil's native vertebrates (almost 9,000 species), as well as of a number of invertebrates (over 3,300 species, or 3% of Brazil's recognised invertebrate species). The results of this effort were also included in the 2018 Red Book of Brazilian Fauna Threatened with Extinction (ICMBio/MMA, 2018) released by ICMBio in January 2019. The production of the Red Book assesses the threat for each species, the justification, the threat category that was on the previous Red List (2002), the International Union for the Conservation of Nature (IUCN) RedList, and if the species is considered at risk by state-level Red Lists. The justification for categorisation summarises the data that support the inclusion of the species in that category, according to IUCN's methodology. The ever-lengthening list of threatened species in Brazil reflects not only a greater effort to research and assess the status of species but also, regrettably, a measurable worsening of the state of conservation of Brazilian biodiversity. A total of 716 species were added to the 2014 list versus the prior (2008) list, although, for the first time, species (170) were also downlisted due to population increases.

Table 1 indicates that, of the 12,254 taxa assessed to produce Brazil's Red Book of Endangered Species, 9.6% were categorised under the IUCN Extinct and Threatened categories.¹²

TABLE 1: CATEGORISATION ¹³ OF ASSESSED TAXA ACCORDING TO IUCN CRITERIA													
	"Extinct" categories			"Threatened" categories				Other species assessed					Total
	Extinct (EX)	Regionally Extinct (RE)	Extinct in Wild (EW)	Critically Endangered (CE)	Endangered (EN)	Vulnerable (VU)	Sub-total	Near Threatened (NT)	Least Concern (LC)	Data Deficient (DD)	Sub-total	NA	
Taxa	5	5	1	319	408	454	1,182	314	8,851	1,671	10,837	226	12,254
%	0.04	0.04	0.01	2.60	3.32	3.70	9.64	2.56	72.23	13.63	88.42	1.84	100

Approximately half of the species that are categorised as Extinct or Threatened are found in the Atlantic Forest, more than a third of which are endemic to this biome. This high level of threat is not surprising given that only 8.5% of the original 1.3 million km² of this diverse biome remain as forest fragments larger than 100 ha (*Fundação SOS Mata Atlântica e Instituto Nacional de Pesquisas Espaciais*, 2014).

Regarding threatened vertebrate species, 217 species are Critically Endangered (12 mammals, 42 birds, 10 reptiles, 18 amphibians and 135 fish), 302 are Endangered (43 mammals, 71 birds, 50 reptiles, 12 amphibians, 126 fish), and 354 are Vulnerable (55 mammals, 120 birds, 20 reptiles, 11 amphibians, 148 fish). These figures exclude the nine still-to-be-described species included in Table 1, see footnote 12.

The main threats to biodiversity at the national level (in terms of numbers of species affected) are 1) land use conversion to agriculture and cattle ranching, 2) urban expansion, 3) hydropower generation including dams and reservoirs, 4) industrial and agricultural pollution (especially for invertebrates, fish, amphibians, reptiles and mammals), and 5) removal of species from the wild through hunting, fishing and capture of live animals for the wildlife trade, as pets and for aquariums (ICMBio/MMA, 2018). However, as discussed in section 5.1, the scope of the illegal wildlife trade is notoriously difficult to quantify.

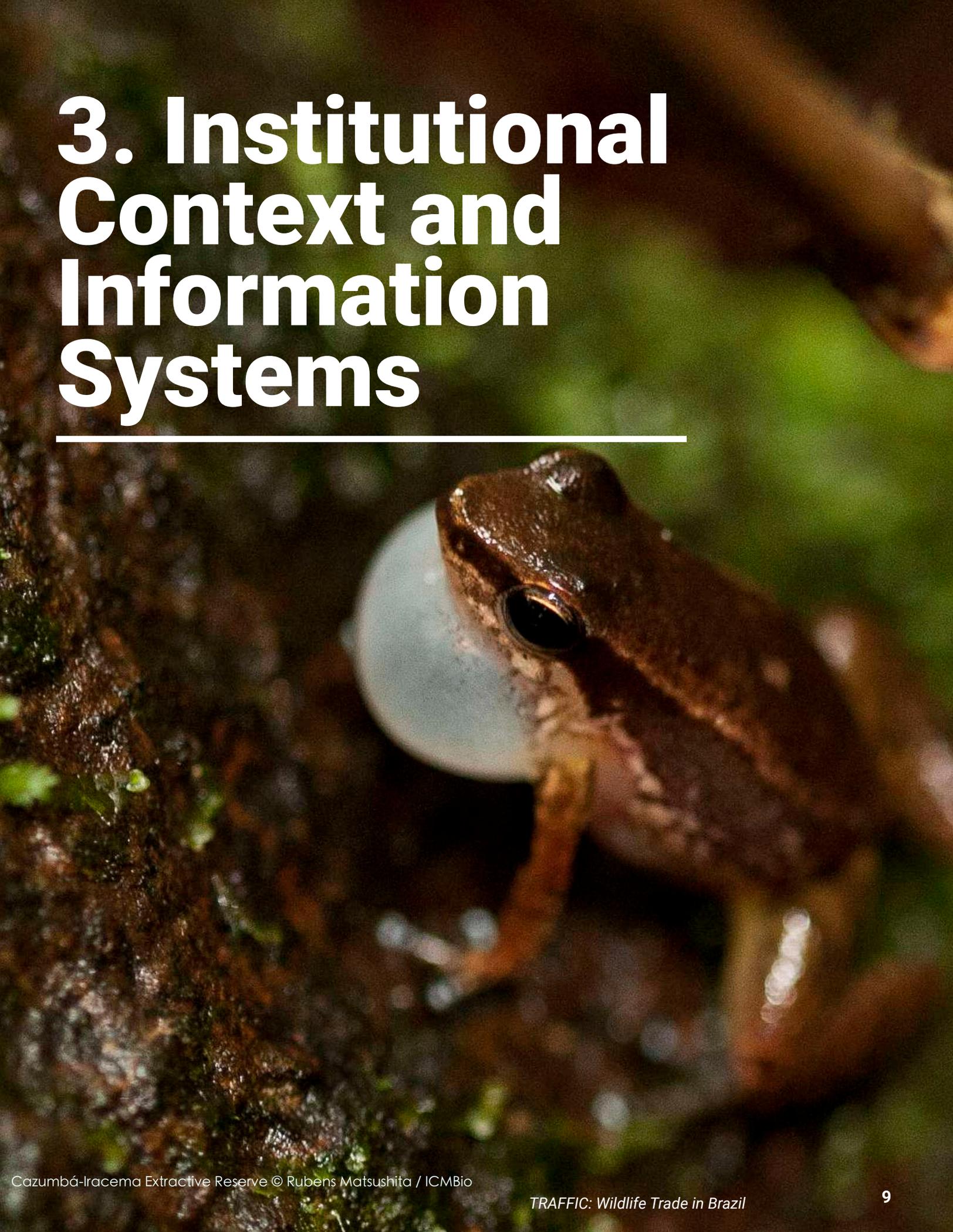
¹⁰Many of the data in this section are based on the most recent edition (ICMBio/MMA, 2018) of the Red Book of Endangered Brazilian Fauna, published by ICMBio and launched in Brasília in January 2019

¹¹Ministério do Meio Ambiente, created in September 1992, shortly after the Rio Earth Summit in June 1992.

¹²By the end of the assessment process, nine of the threatened taxa had not yet been properly described (one freshwater fish, five serpents, two birds and one mammal), but were recognised by scientists as full species and were known to be highly threatened. According to the IUCN methodology, this means they can be recognised as valid species for the purposes of assessment, and they have therefore been included here in Table 1.

¹³EX=Extinct, RE=Regionally Extinct, EW=Extinct in the Wild, CE=Critically Endangered, EN=Endangered, VU=Vulnerable, NT=Near Threatened, LC=Least Concern, DD=Data Deficient, NA=Not Applicable

3. Institutional Context and Information Systems



INSTITUTIONAL CONTEXT AND INFORMATION SYSTEMS

Institutions

The institutional framework for the control and regulation of both legal and illegal wildlife trade in Brazil is based on the responsibilities assigned to various agencies and forces by the relevant legislation. This section outlines the main institutional actors responsible for implementing wildlife protection laws and regulations.

IBAMA¹⁴ is a key institution in the fight to eradicate the illegal trade in wild species. IBAMA's purpose is to manage, control, protect and conserve native species of Brazil's fauna and flora, and to supervise the control and transport of traded wildlife. However, as a result of the application of Complementary Law no. 140 (see section 4.4 Responsibilities for wildlife protection and regulation) in 2011, as well as a lack of resources, capacity and staff, IBAMA delegated responsibilities to the state-level environmental agencies and police forces (which, at the state level, are part of the Military Police and the Civil Police).

The **CETAS**¹⁵ wildlife reception centres can be administered by IBAMA, other federal agencies, state or city governments or, by private organisations. They receive, triage and care for wild animals confiscated from the trade, rescued or donated, until they are fit for appropriate placement (captive, release, etc). There are CETAS in 23 of the 26 Brazilian states and in the Federal District. Additionally, in several states there are wildlife rehabilitation centres, **CRAS**¹⁶. As a major destination for illegally traded wildlife, São Paulo state has 16 CETAS and CRAS centres in 14 cities and towns across the state. However, the number and capacity of CETAS and CRAS in Brazil is still insufficient to absorb the large numbers of wild animals they receive, and many CETAS are not fit for purpose, with run down equipment and enclosures and/or insufficient or unqualified staffing, who usually receive very low wages. Some of the large urban centres where the trade is prevalent have municipal-level wildlife reception/rehabilitation centres, such as DEPAVE-3¹⁷ in São Paulo and Vitória da Conquista, in Bahia. There is no consolidated list of Brazil's CETAS, CRAS and other wildlife reception centres, nor a central database of animals and species received from seizures or donations. Requests for data need to be sent to each individual centre. Several partial analyses of wildlife received at these centres have been conducted.

ICMBio¹⁸ is Brazil's federal agency for biodiversity conservation responsible for the protection and management of federal level protected areas and for conducting research programmes for the protection of the country's biodiversity. ICMBio also has the authority to inspect, issue administrative fines and seize illegally caught wildlife within protected areas and surrounding areas under its management.

At the state level, wildlife management is the responsibility of the state level environmental agencies, or **OEMAS** (*Órgãos Estaduais de Meio Ambiente*), which have a mandate to authorise, manage and inspect wildlife related activities and facilities.

The **Federal Revenue** department (*Receita Federal*), under the Ministry of Treasury, is responsible for the administration of export taxes. In addition, its international trade controls support the fight against IWT through its customs services.

In regard to illegal wildlife trade, the **Federal Police**, or *Polícia Federal* (PF), is responsible for investigating criminal offences, including offences involving multiple states or foreign countries, CITES listed species, those listed on the Federal list of threatened species, fraud or forgery on federal systems or documents, and/or crimes which were committed in federal areas (airports, ports, federal rivers and

¹⁴IBAMA- Instituto Brasileiro de Meio Ambiente e dos Recursos Naturais Renováveis, created in 1989, part of the Ministry of the Environment

¹⁵CETAS-Centros de Triagem de Animais Silvestres

¹⁶CRAS-Centros de Reabilitação de Animais Silvestres

¹⁷DEPAVE-3 is the Fauna Veterinary and Management Division of São Paulo Municipality, which together with a number of CETAS and the state-run CRAS at the Tietê Ecological Park (PET) assist in the veterinary care and rehabilitation of seized wildlife

¹⁸ICMBio-Instituto Chico Mendes de Conservação da Biodiversidade, created in 2007, with responsibility for the management of federal-level protected areas, part of the Ministry of the Environment

highways, as well as protected areas). From 2008 to 2012, the PF carried out 27 IWT police operations which resulted in the seizure of 35,000 wild animals (Machado, R.S.F., federal prosecutor, Presentation “*Tráfico de Animais Silvestres*”).

Also at the federal level, the **Federal Highway Patrol**, or *Polícia Rodoviária Federal* (PRF) has a mandate to control federal highways, which includes intercepting illegal transport of wildlife and wildlife shipments, and conducting investigations, for example as part of the Integrated Crime Prevention operations (FPIs—see Box IV). In 2018, the PRF was responsible for 33% of the animals seized in Brazil (Personal Communication by one of the interviewees for this assessment).

At the state level, the **Military Environmental Police** (response to urgent calls and “on the act” crimes) and the **Civil Police** (responsible for investigations) are the law enforcement institutions with a mandate to investigate crimes, and the **State Highway Patrol** also has authority to seize illegal wildlife. Lastly, at the municipal level, the **Metropolitan Civil Police**, or the *Guarda Civil Metropolitana* (GCM), which does not exist in every city, also can seize illegal wildlife.

In the context of IWT, the **Public Prosecution Office** (*Ministério Público*) ensures that relevant legislation is being followed and enforced, and is responsible for further investigating cases which the Civil Police (state level cases) or the Federal Police (federal level cases) have found to be criminal. The MPs can also request action from the Police and other governmental institutions. Both the state and the federal levels of the Public Prosecution Office (*MP Estadual and MP Federal*) can file public civil suits (according to Law 7.347/1985) and public prosecutions (Law 9.605/1998). Public civil suits protect the public collective interests (“*interesses difusos*”) of society, including safeguarding the natural environment.

Various **civil society organisations**, including NGOs are active in combating illegal wildlife trade in Brazil, in particular in supporting the development of relevant public policies, supporting the relevant command and control agencies and forces, providing training to officers working on IWT, gathering and analysing information and data, and in environmental education.

Information and control systems

In its role as principal federal environmental agency responsible for wildlife conservation and management, IBAMA administers several information systems, the main ones of which are:

- SISFAUNA is the National System for Wildlife Management, responsible for the management and control of facilities and activities relating to captive-held wildlife, including issuing of permits and operation of facilities.
- SISPASS is the control and monitoring system currently also used by state-level environmental agencies for issuing licences for non-commercial breeding or keeping of passerine birds of wild species. This responsibility used to belong to IBAMA, but since the issuing of Complementary Law 140, this has been delegated to the state, with IBAMA currently being responsible primarily for the management of the system.
- SISCITES is responsible for issuing import and export licences for CITES-listed species.

Many states manage their own information systems. All state-level systems are integrated with IBAMA’s federal level system except for São Paulo’s system (known as GEFAU), which operates independently. Both the São Paulo state environmental agency and IBAMA are working towards making their respective systems compatible, but until this is accomplished, IBAMA remains blind to what happens in São Paulo, a key state for the understanding of Brazil’s illegal wildlife trade. In the meantime, IBAMA will need to continue to submit information requests to the state agency every time information is needed, which undermines the federal agency’s efforts to plan effective IWT strategies at the national level.



4. BRAZIL'S WILDLIFE LEGAL FRAMEWORK

Swartzia tree © WWF-Brazil / Zig Koch

BRAZIL'S WILDLIFE LEGAL FRAMEWORK

In Brazil, keeping wild animals as pets is part of a long-standing cultural tradition, born from the ethnic fusion of the country's indigenous people with European colonial settlers after the arrival of the Portuguese in 1500 (Marques, 2009). Traditionally, indigenous peoples kept (and still keep) animals of wild species in a domesticated and semi-domesticated state in their home villages. Travellers to Brazil during colonial times would return to Europe with scores of unknown exotic species, fuelling a desire abroad to own these attractive animals. Wild animals were exhibited and traded in street markets, a practice that still survives today in many places, despite being illegal. Wildlife trade became a lucrative business, and by the 19th century the trade was already consolidated, marking the start of the gradual depletion of the populations of several species (Renctas, 2001).

For over four centuries after the arrival of the Portuguese in Brazil, keeping or trading wild animals remained unregulated (Mairynek, 2016). The first attempts to regulate this practice came about in the early 20th century.

4.1 The birth of wildlife law in Brazil¹⁹

Up until 1967, the law concerning wildlife was rooted in the Brazilian Civil Code ("*Código Civil Brasileiro*", Lei 3.071, de 01 de janeiro de 1916). The Civil Code stated in its article 593 that "all wild animals in their natural environment" were considered to be "*res nullius*" ("a thing not owned"), and, as such, were "subject to being appropriated" by any person.

In this way, the 1916 Civil Code, later reinforced by the 1943 Hunting Act ("*Código de Caça*", Decreto-Lei 5.894, de 20 de outubro de 1943) was based on the rights of the private ownership of goods, where the law limited itself to defining how these goods might be appropriated, with no mention of the need to protect or use them wisely.

In 1967, researchers from the National Museum of Rio de Janeiro proposed the withdrawal of the then still current 1943 Hunting Act and its replacement by a Fauna Protection Law ("*Lei de Proteção à Fauna*", Lei 5.197), which was passed on 3rd January 1967, and from which date Brazilian fauna became a "public good" owned by the State.

Article 1 of Law 5.197 states that "animals of any species, in any phase of their development living free from captivity, comprising the fauna (of Brazil), as well as their nests, shelter and natural breeding areas, are property of the State, and as such their use, persecution, hunting or capture is forbidden". Therefore, since the passing of this law, native fauna in Brazil was no longer considered "not yet owned" or subject to private ownership, becoming a public good, with the state as its guardian and protector. In this sense, wildlife legislation in Brazil differs from that of other countries that consider wildlife either "*res nullius*" (belonging to nobody) or belonging to the landowner.

Around the same time, the Forest Code ("*Código Florestal*" Lei 4.771, de 15 setembro de 1965) was also sanctioned, which like the Fauna Protection Law, limited the property rights of landowners to reflect the need to conserve the environment, by requiring the protection of "permanent protection areas" (river margins, forested slopes, freshwater springs, etc.) and "legal reserve" areas on their properties. Therefore, the 1960s marked the formation of a more consistent legislative framework for biodiversity conservation in Brazil, and the beginning of a more formal practice of environmental law as a discipline.

¹⁹This chapter of the assessment includes excerpts from the Wildlife Legislation chapter by Dr. Sonia Wiedmann in the 2008 edition of the Red Book of Endangered Brazilian Fauna (Machado *et al.*, 2008), as well as information in the wildlife law literature.

4.2 The role of CITES in wildlife trade regulation in Brazil

Brazil's ratification of the CITES Convention in 1975 was the starting point for regulating Brazil's international and domestic wildlife trade, with the promulgation of the Convention's text in Decree 76.623 of 1975 (de Albuquerque, 2014). With regards to suppression of the illegal trade of wildlife, CITES adopts a non-prescriptive approach, leaving the qualification of illicit acts and the issuing and application of penalties at the discretion of member states. Amongst the obligations of member states under the convention is the requirement to define appropriate penalties for the illegal trade in wildlife (although CITES does not prescribe the degree of severity of such penalties). This includes the seizure or confiscation of the species being illegally traded, on the basis that confiscation is an effective penalty, given the high market value of many traded animals (ibid). However, given that traffickers purchase animals for such low prices in the source regions, and then sell them at significant mark-up, losing animals to seizures does not represent a significant out of pocket cost and therefore will not be effective alone in deterring the trade.

Despite Brazil's early ratification of CITES in 1975, the provisions of the Convention were only fully translated into implementable legislation almost 25 years later through Decree no. 3.607, of 2000. As required by CITES, this decree designated Brazil's federal environment agency IBAMA as the administrative authority for CITES, with responsibility for issuing export licences for CITES listed species, keeping an export register, supervising transport of wild animals and plants, and confiscating illegally held animals and plants. The decree also designated the Rio de Janeiro Botanical Gardens (JBRJ²⁰) and ICMBio, as well as IBAMA itself, as the scientific authorities under CITES, with responsibility for providing technical advice on the potential threat to Appendix I and II species resulting from their export (both IBAMA and ICMBio are under the MMA²¹).

4.3 The legal status of wildlife in Brazil

The predatory trade of wild plants, animals and their parts in Brazil was declared illegal with the promulgation in 1967 of the Fauna Protection Law no. 5.197, which declared all native fauna as property of the state.

In 1988, the current Federal Constitution was approved, including for the first time an entire chapter on the environment. This chapter defines the legal status of environmental goods when it states in its Article 225 that "all (Brazilian people) have the right to a natural environment that is ecologically



Brazil's ratification of the CITES Convention in 1975 was the starting point for regulating Brazil's international and domestic wildlife trade

²⁰JBRJ-Jardim Botânico de Rio de Janeiro, created in 1808, and currently part of the Ministry of the Environment

sound, a public good that is essential for a healthy quality of life, imposing on the public authorities and collectively on society the responsibility of defending and safeguarding it for present and future generations.” The constitution therefore enshrines the natural environment as a fundamental right and provides a clear statement of the legal definition of environmental goods as public goods.

Specifically on wildlife, the Federal Constitution states in paragraph 1 of Article 225 that it is the responsibility of the government to “Protect the fauna and flora, and prohibit, according to the law, practices that threaten their ecological function, lead to their extinction or subject animals to cruelty” (this was the first time that wildlife protection was explicitly mentioned in a Brazilian Constitution).

However, the Federal Constitution does not position itself in relation to the ownership of environmental goods, leaving the matter to be defined by subsequent norms and regulation mechanisms. Up until its promulgation, wild animals were considered property of the state, as prescribed in the 1967 Fauna Protection Law. From 1988 onwards, wildlife is defined as an environmental good which the legislation defines as “goods of shared or collective interest” (“*bens e direitos ou interesses difusos*”) which cannot be owned privately. Even in the specific cases where current legislation regulates the capture of wild animals in their natural environment (where duly authorised) for research or to set up captive breeding programmes, the legal status of the public good is not altered: it remains as an environmental good of collective interest, in other words, these wild animals and their offspring are under the care of private individuals who do not have ownership over them, and remain under the responsibility of the public authorities.

Therefore, wildlife legislation in Brazil went from regarding wildlife as *res nullius* (“a thing not owned”) and subject to appropriation (1916 Civil Code), to a public good owned by the state (1967 Fauna Protection Law), and finally to its current status as a “good of collective interest” or “*bem de interesse difuso*” (1988 Federal Constitution).

4.4 Responsibilities for wildlife protection and regulation

At the time of the passing of the 1967 Wildlife Protection Law, responsibility for its full and proper enforcement had been handed over to the newly established Brazilian Institute of Forest Development (IBDF)²². Almost 20 years later, in 1989, IBDF and three other environmental agencies (responsible for natural rubber, fisheries



Wildlife legislation in Brazil went from regarding wildlife as “*res nullius*” (“a thing not owned”) and subject to appropriation, to a public good owned by the state, and finally to its current status as a “good of collective interest” or “*bem de interesse difuso*”

Giant Anteater © naturepl.com / Nick Garbutt / WWF

²²IBDF-Instituto Brasileiro de Desenvolvimento Florestal, later restructured as IBAMA



and environmental policy) were merged to form IBAMA, a new agency responsible for the implementation of the National Environmental Policy (passed in 1981). This provides the protection of Brazil's natural heritage by controlling, protecting, and conserving Brazil's native flora and fauna, in addition to supervising the management, control and transport of traded and/or kept wildlife.

However, the 1988 Federal Constitution (Article 23²³) introduced a new decentralised approach to assigning government responsibilities for "common" or "shared responsibility" goods, and wildlife was explicitly included amongst those goods. The shared responsibility approach requires all levels of government i.e. the Union (federal level), the Federal District (where the capital Brasilia is located), states (26 states) and municipalities (over 5,500) to share responsibilities for issues of "common interest". Wildlife protection; effective supervision of scientific research; wildlife management; combating trafficking and bio-piracy; controlling deforestation (and the resulting loss of habitats and the destruction of nests, natural breeding areas and shelters); and the application of appropriate penalties for offences committed against wildlife, are some of the common responsibilities defined in Article 23 of the Federal Constitution.

In 2011, based on the constitutional principle of common and shared responsibilities between the different government levels, Complementary Law no. 140 ("*Lei Complementar n. 140*" or LC 140) was sanctioned, establishing rules for the co-operation between the Union (federal level), the states, the municipalities and the Federal District regarding their shared responsibilities for the protection of outstanding landscapes, the protection of the environment, reducing all forms of environmental pollution, and the conservation of forests, wildlife and flora. Specifically, regarding wildlife, this law refers to the management, protection and control of wildlife in Brazil, including the administration of wildlife captive breeding facilities (Mairynk, 2016). As a result, IBAMA handed many of its former responsibilities to the states and the Federal District through co-operation agreements for information sharing, training, and support for the issuing of permits and licences, and for the monitoring and control of captive wildlife, including the management of SISPASS, the digital system for management and control of the amateur captive breeding of passerine birds, as well as commercial breeding activities.

However, since this law was passed, and as a result of IBAMA's continued efforts to regulate better the captive breeding of wild animals in Brazil, opponents of stronger regulatory mechanisms have argued that these efforts "threaten the autonomy of the states...as prescribed in Complementary Law no. 140, which ensures state-level autonomy for drawing up and implementing their own wildlife protection policies," resulting in tensions between the two levels of government. However, IBAMA retains responsibility for the inter-state and international transfer of captive wild animals, as this process would become unnecessarily bureaucratic and cumbersome if each state was to have its own marking system, and perhaps some stricter and more robust than others. Likewise, the trade of CITES-listed species between states and in international ports, airports and federal protected areas, amongst others, remain under the responsibility of the federal agency.

²³http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm

4.5 Wildlife and the Environmental Crimes Law

The promulgation in 1998 of Environmental Crimes Law no. 9.605 (“*Lei de Crimes Ambientais*”) revoked the articles in Wildlife Protection Law 5.197 regarding offences and penalties and provided a new definition of wildlife. This law aimed to soften the penalties introduced through Law 7.563, of 12th February 1998²⁴ (perceived by some as overly stringent), removing the former classification of wildlife-related crimes as “un-bailable offences”²⁵, and defining penalties deemed to be proportional to the severity of the environmental offence they aim to punish.

It is important to emphasise that environmental crimes in Brazil are subject both to criminal as well as to administrative penalties. Criminal penalties can only be applied by the judiciary system, and only after the environmental criminal proceedings have been completed, which can take months or years. The penalties for wildlife trafficking and illegal wildlife trade related offences in the criminal sphere, and in the absence of aggravating circumstances, are restriction of freedom (which is different from imprisonment) of six months to one year, plus a monetary fine. This penalty means IWT is considered a “lesser crime” or “minor offence”, which allows for the so called “Penal Transaction” (a sort of settlement) and restricts the access of investigators to tools such as wiretapping, among others.

In the administrative sphere, Decree 6.514/2008 (article 24) regulates and defines sanctions for IWT related offences. Fines range from BRL500.00 (approximately US\$120) per individual of non-threatened species (according to official lists) to BRL5,000.00 (approximately US\$1,250.00) per individual of threatened species (official Brazilian lists as well as listed in CITES appendices).

Both the Environmental Crimes Law and Decree 6514/2008 punish all forms of unauthorised trapping and poaching of wild animals, with penalties being tripled in cases of professional hunting.

Article 37 of the Environmental Crimes Law de-criminalises those cases in which the killing of wildlife is carried out for the provision of food for the hunter and his family, often the case in poverty-stricken areas. It is hard to distinguish between subsistence hunting of wild animals for food and hunting wild animals to sell to traders, as a means of subsistence (e.g. for buying food), or simply as part of a habit of consumption of wild meat. Often, the social chain of actors engaged in illegal wildlife trade starts with animal trappers and poachers in poor rural communities, who act as the primary suppliers of wild animals and/or their parts to the trade, but whom nevertheless the law should reach, together with intermediate traders and end-consumers.

The Environmental Crimes Law also de-criminalises hunting wildlife to protect crops, orchards and cattle from predatory killings, provided expressly authorised by the relevant authorities. Similarly, some species may experience population explosion due to anthropic factors, which may require control, such as past measures to control populations of the Monk Parakeet *Myiopsitta monachus* in the southern state of Rio Grande do Sul.

Illegal wildlife trade specialists from IBAMA, the Federal Police, NGOs, such as Freeland Brasil, and others, call for the harmonisation of IWT legislation in Brazil. To some specialists, the problem is that the illegal trade in wild animals is not explicitly mentioned in Article 29 of Law 9.605/1998, while for others the problem is with the light penalties or with how the IWT crime is described. Therefore, while some specialists call for an increase in the penalties, others propose simply adapting the existing legislation (both the Environmental Crimes Law and/or the Brazilian Penal Code); and whilst

²⁴This law punished any violation of the rules contained in the Wildlife Protection Law with regards to hunting and wildlife trade with prison sentences of two to five years.

²⁵“crime inafiançável”

some defend the creation of a specific classification (“tipificação”), others propose the application of other criminal laws in addition to Article 29 of the Environmental Crimes Law (as detailed in Box III). Furthermore, current legislation does not make a clear distinction between the professional repeat-offender trafficker and an individual who illegally keeps a few animals at home as pets. Wildlife crimes are complex, comprising multiple illicit acts, and like other types of illicit activities, are anchored in other crimes more clearly defined in the law, including forgery, smuggling and corruption. Another issue is the severity of the crime; often the people who are charged are those at the beginning of the trafficking chain (i.e. those involved in the capture and initial transportation of wild animals). It is much harder to charge the large traders at the end of the chain who sell wild animals to end-consumers. A specific criminal classification would allow for a more proportionate application of penalties between the small offender and the large ringleader.

4.6 Brazil’s legal trade in wildlife

From 1967, the predatory trade in wildlife became illegal and punishable by law. At the same time, the Fauna Protection Law no. 5.197/67 opened up the possibility of legally breeding/keeping certain species in captivity, under specific conditions. However, at that time, no specific rules or procedures were defined for the regulation of legal captive breeding and trade of eligible species.

Over the last 50 years since the issuing of Law no. 5.197/67, dozens of different rules and regulations of various types (“Portaria”, “Instrução Normativa”, etc) have been issued to regulate specific types of wildlife captive breeding programmes for different purposes (commercial, scientific, amateur, educational, etc), targeting different taxa with distinct conservation status (caiman, marine turtles, passerine birds, primates, ornamental fish, endangered species, etc). In 1972, the then federal environmental agency IBDF issued the first legislative instrument (Portaria IBDF no. 3.175/1972) for the regulation of captive breeding of birds by amateur (meaning non-commercial) breeders. This was followed by the issuing of progressively more stringent regulations regarding the activities of non-commercial breeders. A more recent “Instrução Normativa” (I.N. IBAMA no. 10, of 20 September 2011) updates the many previous regulations for keeping and breeding native species of passerine birds and is currently the principal norm regulating the activity (see section 4.7 below).

Based on existing legislation, all trade in wildlife is forbidden except if the traded animals have been sourced from legal captive breeding facilities (de Albuquerque, 2014). Individuals and/or businesses can only commercialise wild animals, their products or sub-products if these are part of officially registered captive bred stock. Flaunting the rules that regulate breeding facilities comprise a penal contravention (administrative and criminal), which can result in the cancellation of the commercial registration (an administrative penalty).



Yacare Caiman © Andre Dip / WWF-Brazil

Based on existing legislation, all trade in wildlife is forbidden except if the traded animals have been sourced from legal captive breeding facilities.



Tapir © Days Edge Productions / WWF-US

In 2015, federal control agency IBAMA issued I.N. IBAMA no. 07 which recognises, amongst other categories, the following types of captive breeding facilities²⁶:

- Wildlife reception centres (two types: “CETAS”, and “CRAS”);
- Pet shops (no breeding allowed);
- Scientific breeding facilities (two types: conservation or research);
- Commercial breeding facilities;
- “Holders”/“owners” of wild animals (allowed to raise or keep, not to breed or sell);
- Zoos.

Although captive breeding of native species is recognised by different stakeholders all over the world as a wildlife conservation strategy, either through breeding endangered species for subsequent re-introduction into the wild, or through commercial breeding of species (endangered or not) for which there is a market (national or international; live animals or their products) so as to prevent the unsustainable exploitation of wild populations of these species, this legal stock and market may cause such strategies to backfire if poached and illegally caught wild animals are allowed to enter the legal supply chain.

In Brazil, both types of captive breeding are permissible by law, although there has been evidence of malpractice and illegal dealings in commercial wildlife breeding enterprises, as was revealed through, for example, IBAMA’s “Operation VIP Fashion” (“*Operação Moda Vip*”) in 2015, among many others. The operation disclosed illegal practices amongst 13 Caiman *Caiman crocodilus* breeders and processors of leather of wild species in five Brazilian states, including the use of illegally obtained tags for the laundering of wild-sourced caiman introduced into captive bred stocks and for marking leather goods. An analysis of data gathered from 1999–2007, of data from IBAMA, and of data from an investigation carried out by the Federal Police (the 2003 Parliamentary Investigation Commission on Wildlife Trade and Biopiracy, or “CPI-Comissão Parlamentar de Inquérito sobre Tráfico de Fauna-CPITRAFI”) revealed the direct involvement of 16 wild animal “breeders” in seven Brazilian states with the illegal trade (Costa *et al.*, 2007, cited in Mairynk, 2016).

The legal amateur captive breeding of birds is where most illegal practices occur (in terms of the numbers of animals involved), through the abuse of IBAMA’s monitoring system for captive bred passerine birds (SISPASS) by non-commercial breeders, through forging of authorisations, false registration declaration, tampering with identification rings, etc (see Box I). This allows for the laundering of wild sourced birds or the illegal trade between what should be strictly non-commercial bird breeders. According to an IBAMA source interviewed for this assessment, 87% of amateur breeders visited by the agency during inspections displayed some sort of irregularity, which suggests the birds may not have been obtained through legal means.

²⁶The term “breeders” in English does not accurately translate the Portuguese term “criadouros” which has a dual meaning as it refers to both keeping and breeding animals.

Box I: Bird rings: laundering illegally obtained wild birds in legally established facilities

Since 1972, Brazilian law permits the captive breeding of native passerines as a hobby for non-commercial purposes.

An interview with one IBAMA agent revealed that from the mid-2000s until 2012, fraud and forgery of bird rings—small, individually numbered metal or plastic tags attached to the leg or wing of a bird to enable individual identification—increased significantly. There are two main forms of fraud:

1. The non-commercial “breeder” registered on SISPASS would request aluminium rings (currently stainless steel is used, which makes it a little more difficult to tamper with them) for supposedly newly hatched birds from his/her captive breeding stock. The diameter of the rings is determined by the characteristics of each species. If the request was legitimate, rings would be fitted on the tarsus of the newly hatched birds (first ten days of life), so they cannot be removed once the bird reaches its adult size, providing an individual identification for life and proof that the bird comes from legal captive stock. However, if the request was false, the aluminium rings, once received, could be easily tampered with through enlargement, splitting or number change. Through this practice thousands, perhaps millions, of new birds would be added to the system.
2. The system does not allow transfers of rings between breeders, only transfers of ringed birds, but breeders could request up to 50 rings on SISPASS. Unscrupulous “breeders” started a black market of rings, which hugely inflated the cost of rings: “breeders” would declare a certain number of newly hatched birds, all false, and requested rings for the non-existent birds. The “breeder” would then declare the transfer of non-existing birds together with their new official rings to other presumed “breeders” who would then have a stock of official rings to launder illegally obtained birds (either illegally wild-sourced or purchased from the trade). “Breeder” No. 1 would have paid BRL3,00 per ring (less than US\$1.00), and would have re-sold them to “breeder” No. 2 for at least BRL100,00 each. False deaths and false escaped birds would also be reported to SISPASS, and rings would then be passed on.

Through these methods, one interviewee from IBAMA estimates that around 75% of passerine birds registered on SISPASS were a result of false declarations and forgery of rings. Therefore, of the four million birds registered on the system by 2015, three million would have been a result of fraud, in order to launder birds obtained illegally from the trade or directly from the wild. The legality of the remaining one million is also difficult to vouch for. Another IBAMA interviewee believes that, even though it is illegal for breeders to commercialise birds, most, if not all breeders, have bought or received illegally held or registered birds, either knowingly or unknowingly.

Mairynk (2016) examined the forensic analysis of a sample comprised of over 10,000 individual rings issued to breeders over a ten-year period (2006 to 2015) and concluded that 67.5% had been forged. According to Brazilian law, counterfeiting rings is a criminal offence classified as forgery of a federal public seal, as rings are marked with the IBAMA acronym and logo.



Official bird ring © R Mayrink



Tampered bird ring © R Mayrink



Counterfeit bird ring © R Mayrink

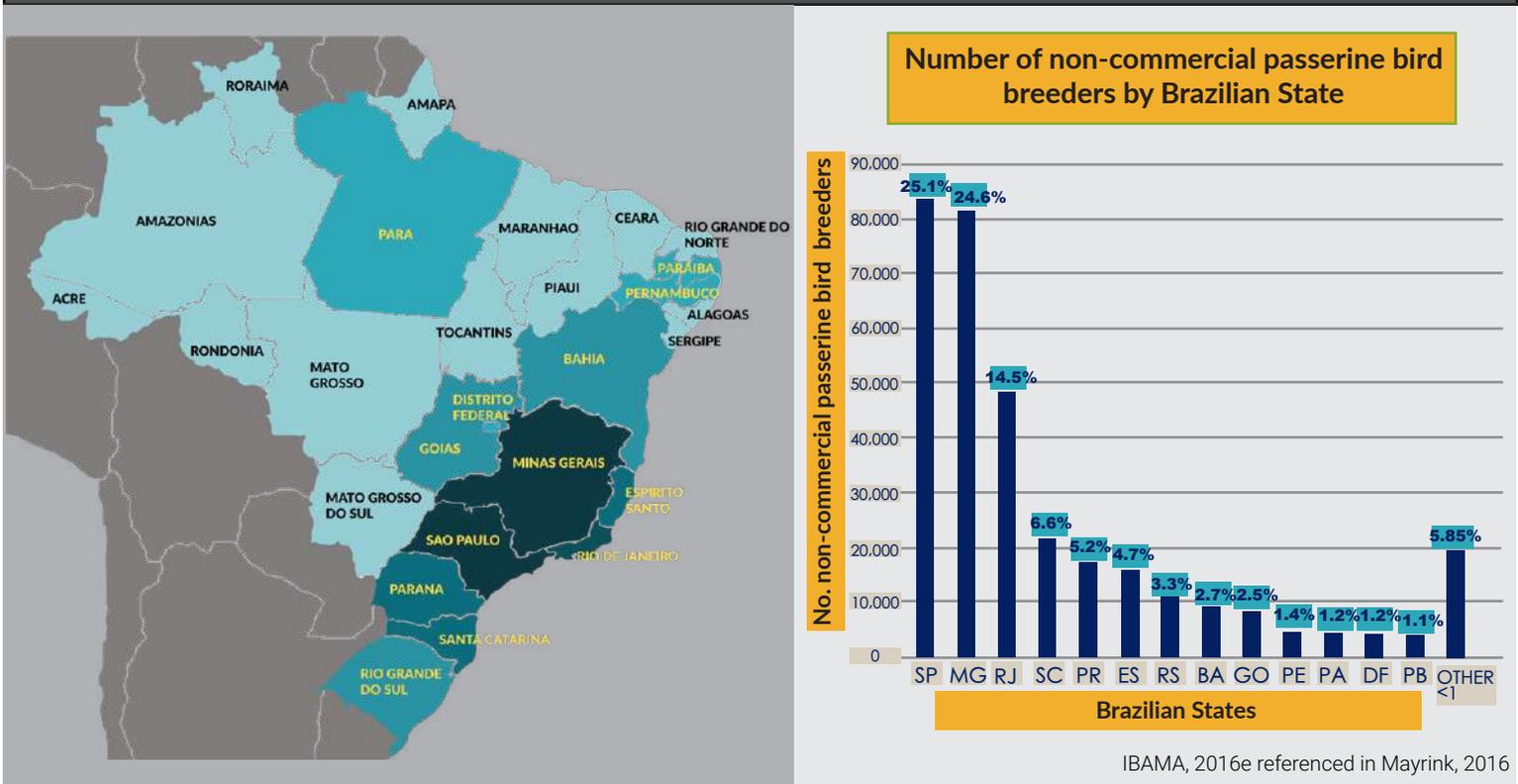
4.7 Amateur breeders of passerines: the interface between legal and illegal trade

The widespread culture in Brazil of keeping and breeding songbirds—known in Portuguese as “*cultura passarineira*”, loosely translated as “birding culture” (Marques, 2009)—acts as a powerful driver of both the legal and illegal trade in the country (Mairynek, 2016). The so called birding culture in Brazil denotes the habit of keeping songbirds at home as pets, but is also largely defined by the hugely popular bird-singing contests (which are legal), which move large sums of money, and by bird fights (as in cockerel fights, but using wild passerine birds which are illegal).

The year 1972 marked the initial regulation of non-commercial keeping and breeding of wild birds in Brazil. Since then, there has been huge growth in numbers of registered keepers and breeders of passerines (Borges, 2011):

- 1972 to 2003/04 (31 years) = 73,000 breeders (1.2 million registered birds)
- 2003/04 to 2007/08 (4 years) = 210,000 breeders (187% growth; over 2 million registered birds)
- 2010 (8 years after creation of SISPASS) = 300,000 breeders (300% growth; 80% of breeders have up to 20 registered birds).

FIGURE 4: NON-COMMERCIAL PASSERINE BIRD BREEDERS (SISPASS REGISTERED) BY STATE²⁷



²⁷SP = São Paulo; MG = Minas Gerais; RJ = Rio de Janeiro; SC = Santa Catarina; PR = Paraná; ES = Espírito Santo; RS = Rio Grande do Sul; BA = Bahia; GO = Goiás; PE = Pernambuco; PA = Pará; DF = Distrito Federal; PB = Paraíba

In 2001, through the issuing of I.N. No. 5, IBAMA became the only agency legally responsible for producing and distributing bird rings, which from this point on were required to be closed rings (prior to 2001, rings were open and made of aluminium, and were produced and supplied by ornithological associations). The internal diameter of rings of different sizes was standardised, as well as thickness of the ring, and for the first time included the IBAMA acronym and logo.

According to one IBAMA official interviewed for this assessment, IBAMA I.N No. 5 (2001) required the re-registration of all birds held by amateur bird breeders, including all breeders who were members of ornithological associations who previously were not declared to (or registered with) the authorities. The incorporation of rings produced by ornithological associations (which were made of malleable materials, mostly aluminium) on the official IBAMA system greatly facilitated the forgery of rings. This I.N. created an opportunity to legalise huge numbers of birds that had been acquired illegally, and the associations acquired many new members overnight, who were eager to legalise their illegal stock.

In 2003, a digital information system known as SISPASS was developed by IBAMA (through regulation I.N. IBAMA No. 1) to manage and control the amateur breeding of passerine birds. The system, launched in January 2004, is self-declaratory and mandatory for use by non-commercial breeders and keepers of passerines and by the agencies responsible for the management and control of this activity (ibid).

In 2004, preliminary analysis of SISPASS data raised initial suspicions of potential abuses of the self-declaratory systems and malpractice amongst non-commercial passerine breeders, when it revealed that only 25% of declared hatchlings were female, contradicting the expected 50%/50% rate. Furthermore, there was a convergence of the most captive bred species and the most seized from the illegal trade, which could indicate that the illegal trade was supplying the captive stock (Borges, 2015. Presentation to the House of Representatives, National Congress, 6th May 2015).

In 2008, IBAMA launched a pilot of the so-called “Operation Delivery” (see Box II) in Juiz de Fora, in Minas Gerais state, a traditional hub of illegal wildlife trade. This operation consisted in hand-delivering orders of identification rings to randomly selected non-commercial breeders at their registered addresses to verify actual numbers of hatched birds on site and their physical condition. Requests for rings dropped by 76% in the year the operation was launched. “Operation Delivery” was then rolled out to several Brazilian states, with similar results (ibid). However, despite its effectiveness at dramatically reducing the number of illegitimate requests for bird rings and the



Red-cowled Cardinal in Pantanal wetlands © Yifei ZHANG / WWF

resulting reduction in the laundering of illegally-sourced birds by unscrupulous breeders, “Operation Delivery” has recently been made redundant. One IBAMA agent interviewed for this assessment estimates that requests for rings drop by about 140,000 rings every time current “Operation Delivery” incursions are carried out.

The main irregularities verified by IBAMA’s various “Delivery” operations included: sale of rights (rings, codes); factories for manufacturing falsified rings; falsified rings; tampering of official rings; conflicting information on individual birds (sex, age, species); “phantom” registration of non-existent birds; commercialisation of birds by non-commercial breeders; and non-existing addresses.

These operations provided sufficient evidence that, whilst there are honest amateur keepers and breeders of passerines, there has been widespread fraud and malpractice within the category of non-commercial breeders as a whole. This is clear from the analysis of seizure data on IBAMA’s Open Data website, carried out for this assessment. A large number of seizures are comprised of birds kept illegally in a domestic environment, usually less than ten birds per seizure, and mostly seized due to irregularities or lack of proper documentation and/or due to inconsistencies with the information stored on SISPASS (e.g. birds/rings registered on SISPASS not located at breeding facilities inspected by the authorities, probably sold to other breeders, which is not permitted for non-commercial bird breeders, information on the system not matching species/age/sex of animal inspected, among others).

In 2011, IBAMA issued “*Instrução Normativa*” I.N. No. 10 (20th September 2011) which defines three categories of breeders / keepers of passerine birds:

- Amateur breeder / keeper: individuals who keep and/or breed in captivity passerine birds belonging to the species listed in Appendices I and II of the I.N. (not for commercial purposes).
- Commercial breeder / keeper: individuals or businesses who keep and/or breed in captivity passerine birds belonging to the species listed in Appendix I of the I.N. (for commercial purposes)
- Buyer of native passerine birds: individuals who keep in captivity native passerine birds belonging to the species in Appendix I, purchased from commercial breeders (breeding not allowed; not for commercial purposes).

By 2010, analysis of identification ring distribution data provided IBAMA with compelling evidence of malpractice by bird keepers and non-commercial breeders, suggested that a much larger number of rings was requested for newly hatched birds than the declared numbers of hatched chicks. Over time, this created a surplus of rings, which were sold for high prices or used for “laundering” wild specimens (from 2004–2010 registered breeders held a surplus of almost 250,000 rings).



Box II: “Operation Delivery”

“Operation Delivery” was designed to detect and curb the widespread and illegal practice of laundering passerines birds taken from the wild through the use of forged or adulterated rings and false declarations of hatchlings on IBAMA’s online SISPASS system.

An analysis of SISPASS data from 2010 revealed that the five most popular species of birds at amateur breeding facilities (“Curió” or Chestnut-bellied Seed-Finch *Sporophila angolensis*, “Canário-da-terra” Saffron Finch *Sicalis flaveola*, “Trinca-ferro” Green-winged Saltator *Saltator similis*, “Coleirinho” Double-collared Seedeater *Sporophila caerulescens*, “sabiá-laranjeira” Rufous-bellied Thrush *Turdus rufiventris*) were also among the species seized in the largest numbers from the illegal bird trade, as can be seen in the graphs below.

“Operation Delivery” consisted in hand-delivering rings requested by breeders only once on-site verification of hatchlings had been carried out, instead of the usual mail deliveries. Analysis of data obtained through an Information Transparency request (e-SIC) to IBAMA revealed a sharp reduction of almost 97% in bird ring requests (for some specific ring sizes) throughout the duration of the Operation, as compared to numbers of rings requested prior to the Operation. An example of the reduction in numbers of rings requested for hatchlings is provided below (size 3.5mm fits the Green-winged Saltator *Saltator similis*).

The numbers are partial, as they refer to specific periods of time. In addition, not all Brazilian states have the capacity to implement “Operation Delivery”, suggesting that the total numbers of forged rings currently in use are likely to be much higher. However, the Operation was discontinued in early 2020 due to political pressures

Figure 5. Requests for rings size 3.5 mm before and after “Operation Delivery”

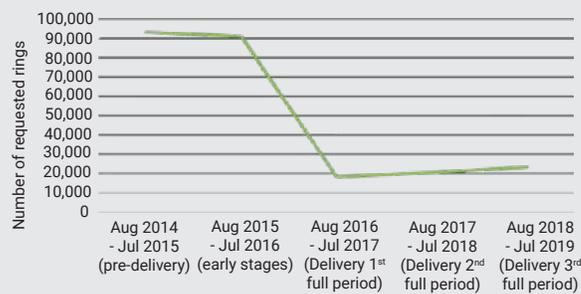


Figure 6. Species most bred by non-commercial bird breeders according to SISPASS (2010 data, %)

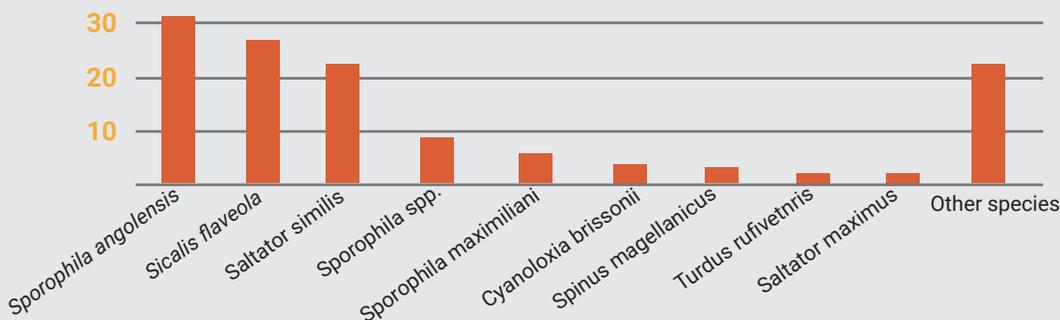
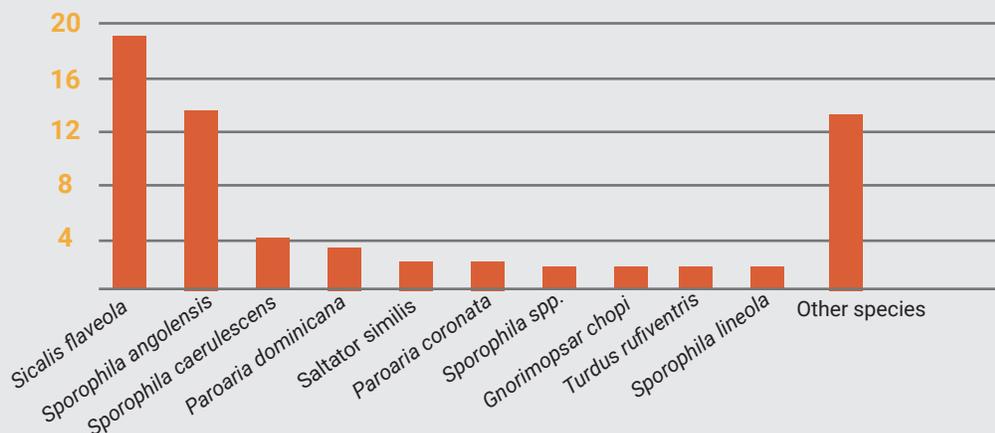


Fig. 7. Species most seized by law enforcement agencies (2010 data, %). Figures modified from Borges, R.C.



Chestnut-bellied Seed-Finch, *Sporophila angolensis*



Saffron Finch, *Sicalis flaveola*



Green-winged Saltator, *Saltator similis*



Double-collared Seedeater, *Sporophila caerulescens*



Rufous-bellied Thrush, *Turdus rufiventris*



Ultramarine Grosbeak, *Cyanocompsa brissonii*

“Operation Russian Roulette” (*Operação Roleta Russa*), launched by IBAMA and the Federal Police in 2010, targeted 247 non-commercial passerine breeding facilities with birds registered on SISPASS (Table 2). Of these, 30 facilities (12%) were listed to non-existent addresses and 31 (12%) did not allow IBAMA access to the facilities. Only 44% of the total number of registered birds in the target breeding facilities were found at the inspected breeding facilities, and large numbers of birds found at the inspected breeding facilities had irregularities (registered but no ring, ringed but not registered, forged or adulterated rings, etc). Bird traps were also found in several of the surveyed facilities.

TABLE 2. OPERATION RUSSIAN ROULETTE (2010)

Total no. of target non-commercial breeding facilities	247	
Non existing address / address is not a breeder	30	12% of target facilities
Breeder did not allow IBAMA access	31	12% of target facilities
Total no. of inspected breeders	186	
Total no. of registered birds in target breeding facilities	2,898	
Birds with no ring in inspected facilities	76	
Registered birds not found at inspected breeding facilities	1,608	56%
Ringed and registered birds found at inspected breeding facilities	1,290	44%
Ringed birds not on registered list	48	
Ringed birds with forged / adulterated rings	28	
Ringed birds with suspected forged / adulterated rings	37	
Bird traps	21	
Breeding facilities with other illegal animals	10	
Notifications	30	12% of target facilities
Infraction notices	118	48% of target facilities
Fines resulting from notifications + infraction notices	148	60% of target facilities

In 2012, through I.N. No. 16, a new model of ring was produced made of stainless steel, which included various security features to reduce the risk of forgery. And in 2017, I.N. No. 10 introduced a prohibition which prevented birds ringed with the old ornithological association rings from participating in bird-singing contests.

From the promulgation of this regulation, the amateur breeder and buyer categories provide legal backing to individuals who wish to keep native passerine birds as pets, if they do not commercialise them. The amateur breeder category is the most well represented, including close to 400,000 breeders across the country (data from July 2016).

At the same time, the promulgation of Complementary Law 140 in December 2011 (“*Lei Complementar 140*”) transferred the responsibility for wildlife management to the state-level environmental agencies, including authorising the registration of new non-commercial breeders of native passerine birds. Although IBAMA is no longer responsible for issuing authorisations for new breeders, it is

still responsible for managing SISPASS for inter-state and international transit and transfers, CITES-listed species, and for collaborating with agencies at other government levels (Federal District, state and municipal) for the fulfilment of their shared responsibilities for the protection of wildlife.

However, despite the number of commercial passerine breeders, and potential large supply of all the most popular species, the illegal trade in these species persists at alarming rates. Alves *et al.* (2013) argue that keeping or breeding common wild birds (not rare) in captivity is not a viable alternative to the illegal trade, on the basis that large numbers of birds declared as legally captive-bred are indeed sourced from the illegal trade and subjected to a fraudulent “legalisation” through the use of forged rings. The high prices charged for captive bred birds (due to necessary investments of time and resources needed to obtain a limited number of animals) as compared to wild-caught birds (often 10 times higher) is another factor undermining the role of captive breeding in replacing the illegal trade (Mairynk, 2016).

In the Brazilian context, combating the illegal songbird trade is inextricably linked to the need for stringent control of legal breeding facilities (both commercial and amateur) to prevent the “laundering” of illegally captured wild birds through tampering and forging of rings (Alves Filho, 2015, cited in Mairynk, 2016). A recent literature review of the circumstances under which commercial captive breeding of wild animals can contribute to conservation has found that in many cases legal commercial breeding can often backfire (Tensen, 2016), due to the fact that consumers prefer wild-caught animals, even if illegally sourced, in order to invigorate their breeding stocks and due to the existence of uncontrolled “laundering” practices. In addition, commercial breeding of wild animals can only fulfil a conservation purpose when consumption demand does not stem from the legal trade, and when legal commercial breeding is able to offer animals at prices that are more competitive than those from the illegal trade.

Five officials and agents from IBAMA, the Federal Police, the Federal Highway Patrol and the Public Prosecutor’s Office who were individually interviewed for this assessment (Phase 2) shared the view that one of the main driving forces behind the bird trade in Brazil is demand created by the non-commercial breeders registered on SISPASS, characterised by widespread forgery of rings, falsification of documentation and fraud through false self-declarations on the system. According to all interviewed IBAMA officials, the vast majority (around 80%) of animals seized from the illegal trade due to irregularities is comprised of passerine birds illegally held in captivity with dubious information on SISPASS. Nonetheless, despite all data showing massive irregularities, there is a strong lobby both by commercial as well as non-commercial breeders (the former of wildlife in general, the latter of passerines), to make regulations of these sectors less stringent and they achieved their aim in early 2020.



Green-winged Saltator

In the Brazilian context, combating the illegal songbird trade is inextricably linked to the need for stringent control of legal breeding facilities to prevent the “laundering” of illegally captured wild birds.

The demand created by non-commercial breeders is compounded by the widespread culture of keeping and breeding birds, “birding culture” (“*cultura passarineira*”), as mentioned earlier. The attitude and behaviour of people who keep wild birds in captivity has roots in family tradition and lack of awareness of the negative impacts of the trade on wildlife. Analysis of data from the Military Environmental Police of São Paulo (“*Polícia Militar Ambiental de São Paulo*”) based on interviews with 129 people prosecuted for unauthorised possession of wild animals in 2011, 2012 and 2013 revealed that 59% of offenders declared the main reason for keeping wild animals is family tradition, claiming to have been influenced by parents and grandparents who traditionally keep/kept wild animals as pets (Marques, 2018).

Also, there is a strongly-held belief that wild caught birds are needed to reinvigorate the stocks of breeders who supply birds for singing contests (which are legal in Brazil) and for bird fights (which are illegal), in order to introduce aggressiveness and the longer singing capacity into their stocks, which if true would present a never-ending demand for wild-caught birds.

However, the general acceptance that cultural factors help to drive the wild pet trade works in conflict with the approach taken by environmental authorities, who tend to resort to repression as the principal means of addressing illegal wildlife trade. The complexity and multi-faceted nature of the trade requires a more sophisticated and multi-pronged approach to tackle the issue effectively (ibid).

Repression of wildlife related crime, on its own, has not succeeded in curbing the trade nor has it managed to address the cultural issues that sustain it. One main reason for this is the relatively mild penalties defined in the applicable legislation. As mentioned before, the maximum penalty in the criminal sphere (independent of the administrative fine) for commercialising wild animals or their parts is six months to one-year detention (restriction of freedom, which is not imprisonment) and application of a fine. Penalties for illicit activities under two years (maximum penalty) are considered to have “lesser offensive potential” (“*menor potencial ofensivo*”) and are regulated by Law 9099 of 1995 which legislates over “special civil and criminal court cases”, which allows for a settlement agreement to be reached (which does not imply in admission of guilt by the offender) and sentence reduction (for example payment of staple food baskets or community service) or even filing of the case. This is made worse by the fact that Law 12.403 of 2011 ruled the end of preventive imprisonment for crimes punishable with less than four years imprisonment, such as conspiracy to commit crimes and gang formation (“*formação de quadrilha*”).



Amazon River Dolphin © naturepl.com / Doc White / WWF

Because wildlife trafficking is not considered a “serious crime” in Brazil, impunity is rife.

Therefore, a multi-faceted approach is needed, taking into account the severe social inclusion issues in rural areas where animals are collected from nature, the need for education of potential end consumers to create behaviour change and decrease demand, but also the need for an effective repression of the crimes being committed by active wildlife traffickers as well as those people involved in fraud and forgery of documents. The need for more effective law enforcement cannot be underestimated, given that the sense of impunity amongst wildlife traffickers is largely responsible for the continuation of these and all related crimes. Because wildlife trafficking is not considered a “serious crime” in Brazil, impunity is rife.

4.8 Conclusions of wildlife legislation section

Wildlife protection legislation in Brazil is extensive, complex and detailed. However, at the same time, it is inadequate and imprecise, where it fails to provide a clear definition of wildlife trafficking and is unable to differentiate between professional traffickers, opportunistic animal sellers, and people who keep a few animals at home as pets. Furthermore, the inadequate application of the settlement agreement (*transação penal*), where the necessary circumstances for its use are not present, severely increases impunity and recurrence in committing wildlife crimes.

The illegal trade in wild animals and plants continues to threaten the country’s biodiversity, either as a contributing factor to other major threats—in particular habitat loss—or as a principal threat in its own right.

Nonetheless, the shortcomings of Brazil’s wildlife protection legislation, although a contributing factor to the relentless rates of biodiversity loss, cannot alone be held responsible for the ongoing illegal trade in birds, reptiles and mammals in the country—lack of resources, capacity and integration between agencies and forces are all contributing factors as well.

According to one expert consulted during the production of this assessment (Tuglio, V. São Paulo State Prosecutor, pers. comm.) simply increasing the penalties for the crimes described in Article 29 of the Environmental Crimes Law (which would render IWT in Brazil a “serious crime”) would greatly strengthen IWT efforts, allowing for investigators to have access to several investigative tools, such as phone tapping. Others are of the opinion that adding the term “wildlife” to existing legislation (specifically, Article 180A of the Penal Code) would be the best solution (Alexandre Saraiva, presentation delivered at a workshop on wildlife trafficking legislation organised by Freeland Brasil and the Public Prosecutors of Sao Paulo state, May 2019)—see Box III. Furthermore, several stakeholders believe that the solution would be a completely new criminal type with a specific description of conducts related to wildlife trafficking and penalties proportional to the damage and impacts produced.

From a legal perspective, a comprehensive and integrated National Wildlife Protection Policy, including a specific framework for combating illegal wildlife trafficking, is needed. This would replace the out-dated Fauna Protection Law 5.197, which despite its important historic role in regulating the protection and use of Brazil’s wildlife, no longer fulfils its purpose, and has been largely revoked by the 1988 Federal Constitution and the 1998 Environmental Crimes Law.

The development of a new National Wildlife Protection Policy that addresses both the domestic and international illegal trade in wildlife in Brazil would allow for streamlining and harmonising

existing wildlife legislation and re-defining wildlife trafficking as a “serious crime”, as recommended in Resolution no. 69/314 of the 2015 UN General Assembly (“Tackling illicit trafficking in wildlife”), and as defined by the 2000 UN Convention against Transnational Organised Crime (UNTOC), which is punishable by imprisonment for a minimum of four years (Mairynk, 2016). Changing the status of wildlife trafficking to “serious crime” is also a clear commitment included in the recently issued Lima Declaration²⁸, of which Brazil is a signatory.

However, there are risks associated with this approach given its dependence on a sympathetic and wildlife conservation-oriented government and National Congress. In 2016, a “National Wildlife Policy” bill was proposed to Congress which would have enabled the creation of hunting reserves and game farms in Brazil and defined “hunting” as both killing as well as taking live animals from the wild for commercial purposes. This bill, together with another bill proposed at the same time, which would have cancelled the federal list of Brazilian endangered species, would have allowed for the hunting and trapping of hundreds of Brazilian native endangered species.

Therefore, it is critical to consider the political environment in the country before pushing for a new Wildlife Policy. For this reason, several IWT experts propose using the existing legislation and tools to improve enforcement and wildlife protection, minimising changes to the overarching laws that form the existing legal framework for IWT in Brazil. Lastly, focusing on a National Strategy for Combating Wildlife Trafficking could foment necessary changes without giving too much room for setbacks.

²⁸Lima Declaration on Illegal Trade in Wildlife. <https://www.unodc.org/documents/treaties/UNTOC/Publications/TOC%20Convention/TOCebook-e.pdf>



Night Monkey © Lina Pelaez-Entropika

Box III: Application of Alternative Legislation in Wildlife Trafficking cases on Brazil

The main Federal Law for combating wildlife trafficking is Article 29 of the Environmental Crimes Law (9.605/1998). However, this law is not effective for differentiating the professional trafficker from the small-scale amateur animal trader, neither does it treat wildlife trafficking as a “serious crime.” Under the existing law, judges have discretion to offer settlement agreements to offenders that do not require an admission of guilt or may choose not to penalise wildlife trafficking acts at all.

Although reference documents, such as the UN Resolution on Tackling Illicit Trafficking in Wildlife, call for countries to enhance counter wildlife trafficking efforts, and repeatedly stress the need for countries to strengthen their existing legislation, changing federal legislation can take a long time and the result is largely dependent on the political environment.

Operation Oxossi (2009, described in detail in Box V) set a legal precedent for convicting wildlife traffickers based on Article 180 of the Brazilian Penal Code. In November 2017, the final document produced at the “First Meeting for the Development of Brazil’s National Strategy for Combating Wildlife Trafficking” included amongst other proposed strategic priorities: (1) the need adequately to apply the settlement agreement for IWT cases (which is applied in cases where the circumstances required for the agreement to take place are not fulfilled); and (2) the need to enhance the use of articles 180 (fencing), 288 (conspiracy/association for crime) and 296 (fraud or forgery of governmental documents and seals) of the Brazilian Penal Code in IWT cases.

Moreover, other articles of the Penal Code could and should be used in wildlife related cases, such as articles 155 (theft), 157 (robbery), 334 (smuggling), among others. Also, by applying one or more of these articles, law enforcement agents could have access to investigative tools which they would not be able to use if relying solely on the Environmental Crimes Law. Furthermore, Article 79 of the Law 9.605/1998 states that the Brazilian Penal Code and the Code of Penal Process should be applied alongside the Environmental Crimes Law.

In 2019, a workshop organised by Freeland Brasil and the São Paulo Prosecution Office, funded by the US Forest Service, with the collaboration of several organisations (including the US Department of Justice and the US Department of State), brought together State and Federal Police Commissioners, Prosecutors and Judges with the aim of developing guidelines for the application of alternative laws in wildlife trafficking related cases. The final agreed text, which is currently used in the Federal Police training academy, reads as follows:

“Considering the relevance of the social and environmental impacts caused by the crimes of poaching, illegal harvest, possession, trade and trafficking of wildlife, and that these activities cause severe violations of the welfare of wild animals, which are sentient and conscious beings, we, the undersigned, participants of the Workshop “Legislation and Wildlife Trafficking”, which took place at the São Paulo Prosecution Office, on May 7–8, 2019, understand that:



Maned Wolf © Anthony B. Rath / WWF



Red bellied Piranha © Staffan Widstrand / WWF

- According to the Brazilian Civil Code animals can be considered as property, it is possible to use the “Fencing” Law (Penal Code, Article 180, caput and § 2º or 180-A), where the crimes described on the Environmental Crimes Law (9.605/1998, article 29) can be considered as previous offence;
- Brazilian legislation recognises animals under different legal protections (as property as well as part of the environment), it is therefore, possible to use “bridge offences” in wildlife trafficking cases between the Environmental Crimes Law (9.605/1998 Article 29) and the Fencing Law (Penal Code, Article 180 or 180-A), in the same way that this is done for cases involving mineral resources (Law 9.605/1998 article 55 and Law 8.176/1991 Article 2nd);
- IWT is an activity organised through a network, those investigating and/or prosecuting such cases should search for elements that may be defined as a crime of conspiracy or an association to commit a crime (Penal Code, Article 288), which could involve, for example, the seizure and inspection of cell phones;
- The criminal prosecution of wildlife trafficking cases should, whenever possible, also consider other associated crimes, such as Forgery of Public Seals and/or Documents (Penal Code Article 296), Smuggling (Penal Code Article 334), as well as Illegally Recharging Ammunition (Law 10.826/2003, Article 16, single paragraph, subsection VI);
- All seizure of wild species and products thereof must be properly communicated to the Revenue Service aiming at detecting potential Fiscal Evasion and/or Money Laundering (Law 9.613/1998);
- All the factors mentioned above (specially in cases of larger seizures, with high numbers of specimens and/or high price species), as well as the violations of animal welfare and the negative impacts on the environment must be taken into account in the police report, and, in the most serious cases, legal means should be used to detain and arrest the offenders;
- It is possible to apply the bridging offences approach for crimes described in Article 29, caput and §1º, III, of the Law 9.605/1998 (illegal wildlife trade) together with the violations of animal welfare (Article 32, Law 9.605/1998);
- The legal interest protected by Article 32 of the Law 9.605/1998 (crime of mistreating animals/

violations of animal welfare) is the dignity of the animal, and its physical and psychological integrity;

- Law enforcement agencies as well as rehabilitation and triage facilities of seized wild animals must always list all items related to animal mistreatment (such as malnutrition, dehydration, abnormal behaviours for the species, among others) which need to be taken into account during the legal process. This evaluation has to be conducted either by a veterinarian, a biologist, a zootechnician or an agronomist. When not presented, the Public Prosecutor must request the list of violations of animal welfare;
- In cases in which animal mistreatment must be evaluated, a police investigation should be conducted (rather than just the usual signature of the misdemeanour document) and the offender's criminal record should be taken into account;
- The triage and rehabilitation facility that takes in the seized animals should indicate the costs of the care of each individual until release in the wild or another destination. The value should be charged from the offender as part of the "damage mitigation" required by law;
- The damage mitigation is a necessary condition for the offering of a settlement agreement (Article 27, Law 9.605/1998);
- The requirements listed under the subsections I, II and III of Article 76 of Law 9.099/1995 (which allows offering a settlement agreement for minor crimes—"petty crimes") need to be carefully analysed since, if the offender does not fulfil them, the settlement agreement cannot be offered. Furthermore, we also consider that the following guidelines are relevant for a possible future change in the legislation:
- Article 225, §3º, of the Brazilian Constitution imposes the criminalisation of conduct which is detrimental to the environment, however, the reduction of penalties in Law 9.605/1998 (in relation to the previous Law 5.197/1967) undermines the constitutional principle of prohibition of socioenvironmental setbacks. It is suggested that Congress should adapt the legislation, aiming at compiling the criminal classifications and assigning penalties which are compatible with the seriousness of the crimes;
- The rule of Article 2, §3º, of the Decree 24.645/1934 ("Animals will be assisted in the legal process by representatives of the Prosecution, their legal substitutes, and by members of Animal Protection Societies") is still valid, with the status of ordinary law, therefore, the annulment of Decree 11/1991 is not valid.

The conclusions presented in this document shall be widely publicised, through different medias, which will be encouraged to broadcast environmental education and awareness shows/programmes about the detrimental effects of the illegal hunting, capture, harvest, transport and trade, as well as of keeping wild animals in captivity, including the risk of contamination by zoonosis and the risk to public health, and disseminating information about the criminal networks that feed the illegal markets and other selling points.

Undersigning this document are the participants of the workshop "Legislation and Wildlife Trafficking", which took place at the São Paulo Prosecution Office, on 7th and 8th May 2019."

5. OVERVIEW OF THE ILLEGAL WILDLIFE TRADE IN BRAZIL

OVERVIEW OF THE ILLEGAL WILDLIFE TRADE IN BRAZIL

Brazil has a long history of utilising wild animals and their parts, beginning with cultural uses by indigenous peoples and then with increased frequency and severity since the arrival of the Portuguese in 1500. Since then, millions of wild animals have been trapped, killed and traded (both live and their parts), driven by the economic ambitions and cultural traditions of both Brazilian and foreign nationals (Marques, 2009). For centuries there were no controls on the capture, use and trade of wild animals. It was only in 1967 that the trade became illegal in Brazil with the passing of Fauna Protection Law 5.197, which ruled that the native fauna and related products were owned by the state.

Some authors (de Albuquerque, 2014) argue that at the time the Fauna Protection Law came into force, thousands of people earned a living from the trade in wild species and whose activities had overnight become illegal. Without economic alternatives, this “vacuum” triggered the start of the illegal trade in wild animals in Brazil. It is likely that other factors also strongly influenced the birth of IWT in Brazil, including the deeply rooted habit of keeping wild animals at home, and the considerable sums of money traders were able to make from selling wildlife, enhanced by illegality since the passing of this law.

The illegal wildlife trade remains rampant in Brazil today, due to a lack of resources allocated to combatting IWT by the official agencies, insufficient capacity for command and control activities, a lack of co-ordination between the states and the federal agencies, and weak penalties and long judicial proceedings. There are also issues with ill-conceived regulations such as the Brazilian National Environmental Council (CONAMA) Resolution no. 457, which rules that offenders caught trafficking wildlife or holding wild animals illegally can, in certain cases, be appointed as guardians of the confiscated animals—a clear conflict of interest which potentially undermines the efforts of the authorities responsible for combatting the trade, resulting in a sense of impunity of the offender, and potentially further stimulating illegal practices.

Currently, demand for wild animals or their parts in Brazil (of legal or illegal origin, from either wild or captive-bred stocks) comes from a range of productive industries and end-consumer groups, including (modified from Sinovas *et al.*, 2017):



zoos and aquariums



private collectors



commercial breeders



scientific institutions



amateur breeders



wild pet market



fashion industry



ornamental / home products



food industry



traditional medicine and traditional religion



timber industry



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Hard evidence of the size of the international illegal wildlife trade is scant, although there are indications of international trafficking in *Podocnemis* spp. river turtles, ornamental fish, Psittacidae eggs and nestlings, jaguar parts, some *Adelphobates* spp. frogs, other amphibians, shark fin, seahorses and sea cucumber, primates, insects, reptile skins and leather, among others. Some of these are discussed in more detail in Section 6 – Wildlife Trade in The Brazilian Amazon, whilst others are beyond the scope of this assessment (e.g. marine species, non-Amazon amphibians and reptiles).

Up-to-date systematised official figures on the illegal trade of wild animals in Brazil at the national level are not available due to the fragmented, incomplete, and often inconsistent datasets held by the various agencies who are responsible for enforcing wildlife protection legislation at the federal, state and municipal levels, and by multiple police forces who are responsible for disrupting the criminal chains that fuel IWT in Brazil. Box IV provides an example of what successful interagency co-ordination can look like.

Despite these data deficiencies, the numbers emerging from some of the more reliable records held by individual agencies and police forces provide an idea of the magnitude of the trade in Brazil.

Chapter 5 provides an overview of the following:

- 1. general size and composition of illegal wildlife trade in Brazil**
- 2. size and composition of the illegal bird trade**
- 3. wildlife capture sites and major trafficking routes**
- 4. post-seizure placement of wild animals.**

Information for these sections is based on a review of the scientific literature, an analysis of available data from official agencies, e-SIC information requests and anonymous interviews with wildlife crime officials from IBAMA, ICMBio, the Federal Police, the Public Prosecution Offices (federal and state levels), the Civil Police, Federal Highway Patrol, and the Sao Paulo Military Environmental Police.

Box IV: Example of successful co-ordination between agencies

The Fiscalização Preventiva Integrada (FPI) and the Integrated Crime Prevention initiative of the São Francisco River Basin

The “FPI of the São Francisco River Basin” programme was created in 2002, following a request made by the Bahia State Prosecution Office (through State Prosecutor Dr Luciana Khoury), with the aim of addressing the diverse and complex environmental issues in the Sao Francisco river basin, through a co-ordinated effort to assess these threats and impacts, and adopt measures for their mitigation and remediation.

The first joint initiative took place in 2002 in Bahia state through a co-ordinated effort between nine institutions. The FPI’s specific objectives are: 1) to remedy existing environmental damage and prevent new forms of degradation; 2) to conduct environmental awareness activities, aimed at building awareness and capacity for disseminating information on the importance of environmental conservation; 3) to provide guidance and stimulate established local businesses to comply with environmental sustainability principles; 4) to enhance accountability for environmental damage; 5) to follow up on the results of inspections, ensuring that issues detected are addressed and corrected; 6) to encourage and co-operate so that new projects and enterprises are established based on the principles of sustainable development; 7) to foster environmental citizenship in the São Francisco River Basin.

The actions developed by the FPI are developed through joint planning and decision making. Teams are formed for each area of work including a support team and FPI co-ordination team. The “fauna” team carries out inspections focused on wildlife trafficking, predatory hunting, and the illegal maintenance of wild animals, and promotes environmental awareness campaigns for the voluntary handing-over of illegally kept wild animals, aimed at the conservation of biodiversity and ecosystems.

According to data from 2014 in the book “*Velho Chico*” (Ministério Público da Bahia e Órgãos Parceiros do Programa FPI, 2014), over 10,000 wild animals have been rescued from illegal trade or captivity since 2002 as a result of FPI initiatives. The FPI programme has a successful education component, as suggested from the low numbers of re-offenders. According to the interviewee of the Federal Highway Patrol, during the FPI implementation in October 2019, previous offenders who had been issued with police reports (TCO) during the August 2018 FPI were revisited. Only two were repeat offenders of wildlife crimes.

Building on the successful results of this initial effort, the FPI approach was consolidated into an ongoing repeatable effort, which is currently implemented in five Brazilian States (Bahia, Alagoas, Sergipe, Minas Gerais and Pernambuco), through a co-ordinated effort between 78 institutions (including federal and state environment agencies, civil society organisations, the Brazilian Navy, academic institutions, fire brigades, federal and state public prosecutor’s offices, the Federal Police, the Military Police, Civil Police, and collaborators from the education, environmental health, law and biological fields).

The FPI of the São Francisco River Basin has been successful on many fronts and is a proven model to be adopted elsewhere.



5.1 Size and Scope of Brazil's Illegal Wildlife Trade

It is frequently stated that approximately 38 million wild animals are impacted by illegal hunting and wildlife trade in Brazil each year, four million of which are believed to be sold commercially, the vast majority through the illegal domestic trade (Renctas, 2001). This estimate is often misused as the absolute number of trafficked animals in Brazil, however it is based on the assumptions that for every illegal wildlife product brought into the trade, three animals are poached or impacted, and for every 10 live animals that are trapped and trafficked, only one reaches the end-consumer (Redford, 1992; Lacava, 1995). The rationale being that damaged or low-quality products (skins, furs, etc.) are discarded, animals are wounded but able to escape, offspring die if parents are captured, etc. In addition, pre-sale mortality rates of birds mentioned in the available literature at the time ranged from 36% (Red Spectacled Amazon chicks *Amazona petrei*) to 90% (tanagers *Tangara* spp.). Authors also estimated that the number of animals seized by the authorities accounted at the time to only 0.45% of all animals brought into the illegal trade. Post-capture losses occur due to a variety of reasons, including wounded animals that escape capture later perish; adults are often killed during capture of young animals; and mortality rates caused by stress during capture, transport and captivity.

The 38 million animals figure is still widely used as it appears to be the only estimate ever provided on the overall volume of the IWT in Brazil. Although it is not possible to provide a reliable estimate of the exact volume of Brazil's IWT with the currently available data, it is possible to use several different numbers, statistics and estimates to piece together the bigger picture.

Trade by Numbers

Seizure data are often used as a proxy to access the scope of illegal wildlife trade, since precise estimates of the number of animals taken from the wild are difficult to obtain. Here we provide the results of several partial analyses mentioned in the literature, analysis of datasets accessible from relevant agencies and police forces at the federal, state and municipal levels, and information obtained through e-SIC requests.

- Wild animals seized from the illegal trade in Brazil can be released immediately if it is clear they have been recently trapped. Otherwise they must be processed through a system, which begins at CETAS²⁹ or CRAS. The capacity of these centres adequately to house, rehabilitate and then release/rehome wild animals seized from the trade is variable (depending on the state where the seizure has taken place), and in almost all cases is insufficient. Nonetheless, numbers of animals admitted are a useful proxy for the species most targeted by wildlife traffickers.
- An analysis of the largest compilation of official live animal seizure data carried out in Brazil to date (Destro *et al.*, 2012) revealed that in 2008 alone, CETAS received over 60,000 wild animals (most from police force seizures). The actual number of seized animals is likely even higher, as many are released before they reach the CETAS facilities (ibid). These numbers also exclude wildlife parts, products and dead specimens.
- São Paulo state has three main wildlife reception centres—CeMaCAS (DEPAVE-3)³⁰; IBAMA CETAS³¹; and CRAS/PET³²—which together account for 80–90% of all wild animals received in fauna reception centres in the state (SAVE Brasil, 2017). Both CeMaCAS (DEPAVE-3) and CRAS/PET (which account for 68% of all received wild animals) have well organised and systematised data on the wild animals they receive, which are updated reasonably regularly. However, most times they operate at the limits of their capacity; if more human and financial resources were available, they would be able to receive more animals. It is a recurring comment among law enforcement agents that they would seize more animals but for the CETAS/destination bottleneck.
- According to data compiled by the Environmental Secretariat of the State of São Paulo, between 2001 and 2012, CPAmb³³ (the Environmental Police Force of the State of São Paulo) seized over 250,000 animals in this state alone, about 25,000 each year (SAVE Brasil, 2017).
- According to data obtained via e-SIC from the CPAmb, the institution seized 32,420 animals in 2017; 32,509 in 2018; and 17,111 until July 2019, reaching a total of 82,040 between January 2017 and August 2019 in São Paulo state alone (see Section 5.2 for a complete analysis of data from the Environmental Military Police of São Paulo state).
- A study by Beck *et al.*, 2017 (cited in SAVE Brasil, 2017) also used CPAmb data, and found that over a 4-year period (2012 to 2015) the force responded to 33,580 reports of offences (not seized animals, but reports) involving wild animals. Over 90% of all cases involved wild birds, followed by mammals (7%) and reptiles (3%).
- According to one IBAMA interviewee, in 2018 more than 72,000 wild animals were received by the IBAMA-managed CETAS across Brazil, of which 60–80% were apprehended by the state-level Military Environmental Police forces in various states, an indication of the important role this state level police force plays in combating IWT in the country. However, most seizures are

²⁹There are 23 CETAS in Brazil

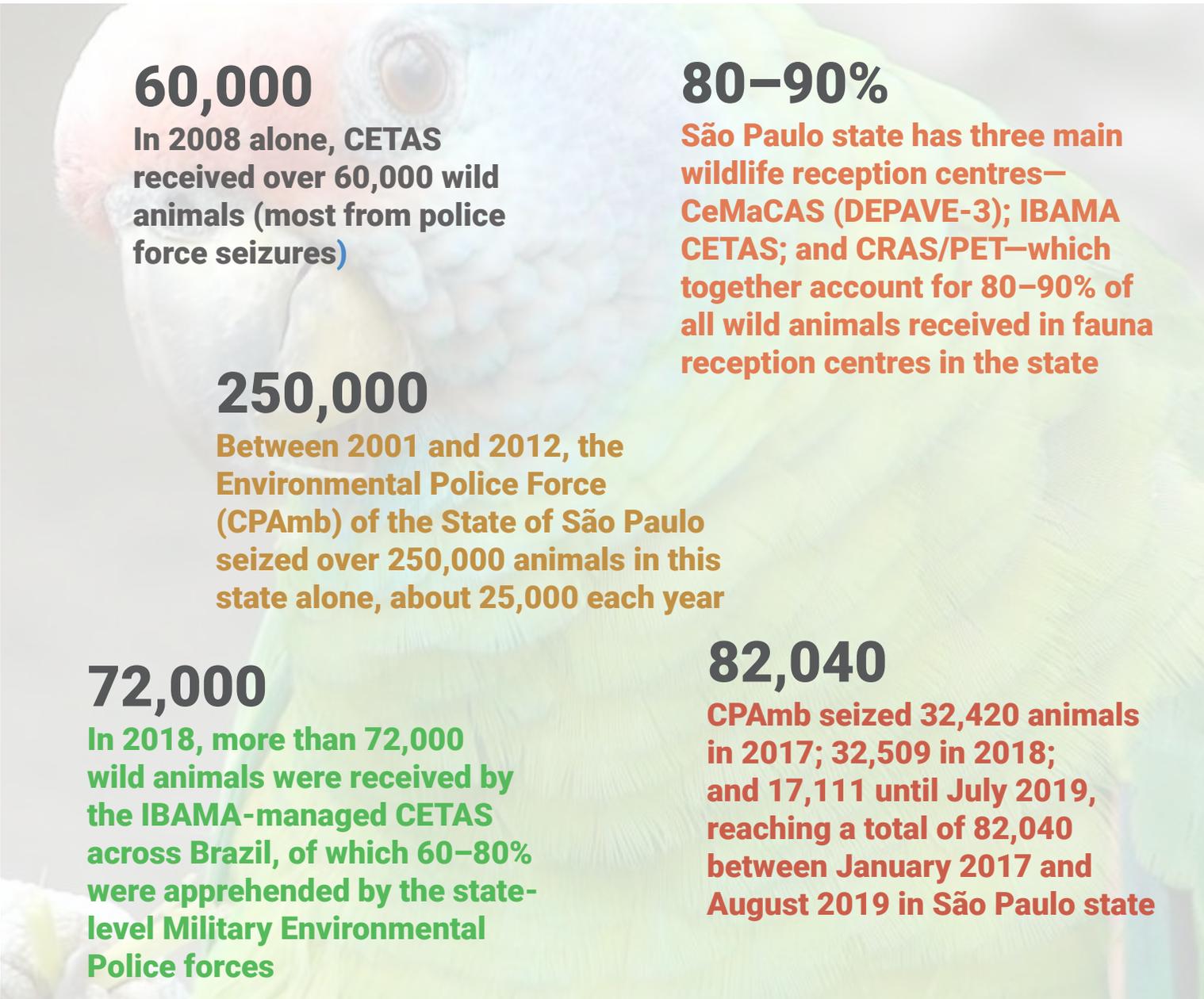
³⁰CeMaCAS (DEPAVE-3): Centre for Management and Conservation of Wild Animals

³¹IBAMA CETAS: the federal-level IBAMA CETAS in the city of Lorena, São Paulo state

³²CRAS/PET: the state-level Fauna Recovery Centre located in the Tietê Ecological Park (Parque Ecológico do Tietê-PET)

³³ECPAmb – Comando de Policiamento Ambiental do Estado de São Paulo (one of several police forces in the state responsible for controlling the trade)

- made from final consumers who keep wild animals illegally in their homes, not from traffickers.
- An emblematic example of the reach that IWT can have in Brazil is “Operation Oxóssi”, the most important transnational counter wildlife trafficking operation ever held in the country. Oxóssi took place in 2009 and was a large effort by the Federal Police involving 450 agents in eight Brazilian states. This single operation disrupted an international wildlife trafficking ring that was estimated to traffic approximately 100,000 animals of several species and prices ranges per year, supplying illegal wildlife traders in five countries other than Brazil as well as to markets in Rio de Janeiro (see Box V for more details on this operation).



60,000

In 2008 alone, CETAS received over 60,000 wild animals (most from police force seizures)

80–90%

São Paulo state has three main wildlife reception centres—CeMaCAS (DEPAVE-3); IBAMA CETAS; and CRAS/PET—which together account for 80–90% of all wild animals received in fauna reception centres in the state

250,000

Between 2001 and 2012, the Environmental Police Force (CPAmb) of the State of São Paulo seized over 250,000 animals in this state alone, about 25,000 each year

72,000

In 2018, more than 72,000 wild animals were received by the IBAMA-managed CETAS across Brazil, of which 60–80% were apprehended by the state-level Military Environmental Police forces

82,040

CPAmb seized 32,420 animals in 2017; 32,509 in 2018; and 17,111 until July 2019, reaching a total of 82,040 between January 2017 and August 2019 in São Paulo state

Box V: Operation Oxóssi

Operation Oxóssi (2009) was one of the most important counter wildlife trafficking operations in Brazil and resulted in the dismantling of an international wildlife trafficking syndicate active in at least six countries.

It is estimated that this syndicate was responsible for trapping, illegally transporting, trading and smuggling as many as 100,000 wild animals per year, moving millions of dollars.

Initially, Oxóssi was set up to disrupt a local criminal trafficking scheme involving wild animals poached from the Tinguá Biological Reserve, a Brazilian federal protected area in Rio de Janeiro state near the town of Nova Iguaçu. Investigations were also aimed at understanding the illegal wildlife trade at the Feira de Caxias street market, the origin of the trafficked animals and part of the routes used by traffickers.

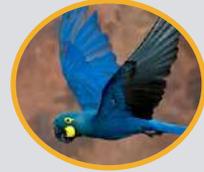
However, during the investigations a much larger scheme was uncovered. Wild animals were trapped not only in Tinguá Biological Reserve, but also in many other sites across eight Brazilian states, including several protected areas. The investigation proved that a large proportion of the wild animals illegally traded in many street markets in Rio de Janeiro State—Duque de Caxias, Honório Gurgel, Areia Branca, Neves and Alcântara—had been captured in other Brazilian States, especially in Bahia, Pará, Minas Gerais, São Paulo and Espírito Santo, and trafficked through a complex transport and distribution network involving bribery and corruption of governmental officers.

Investigations also uncovered that eggs and nestlings of parrots and macaws (all CITES Appendix I and II), which were collected and/or captured in the Brazilian northeast were trafficked internationally to Europe. Eggs were purchased from a poacher in northeast Brazil, transported to a location in Bahia, and then to Rio de Janeiro. After the payment was confirmed, eggs were trafficked attached to the body of smugglers, or the nestlings were shipped internationally with false documentation to several European countries. With the collaboration of INTERPOL, 102 targets (including several Brazilian state police officers) were identified from eight Brazilian states and five countries—Spain, Portugal, Czech Republic, Russia and Switzerland.

The investigation and the considerations presented by the case's Police Commissioner (Delegado Alexandre Saraiva) demonstrated that offenders repeatedly committed the crimes described in articles 180 (e.g. "fencing", or accepting merchandise known to be the product of a crime), 288 (conspiracy) and 334 (smuggling) of Brazil's Penal Code, as well as the crimes described in articles 29 (illegally keeping, transporting or selling wildlife, among other actions) and 32 (animal mistreatment) of the Environmental Crimes Law 9.605/1998.



Hyacinth Macaw
Anodorhynchus hyacinthinus



Lear's Macaw
Anodorhynchus leari



Red-browed Amazon
Amazona rhodocorytha



Vinaceous-breasted Amazon
Amazona vinacea



Red-tailed Amazon
Amazona brasiliensis



Golden Parakeet
Guarouba guarouba

Investigators were able to use surveillance and wire-tapping to demonstrate the “stability” and “permanence” of the criminal activities, tactics which are only available to combat Penal Code offences, and would likely not have had access to these investigative tools based solely on articles 29 and 32 of Law 9605/1998.

The result was 3,567 wild animals seized, 10 Police Reports issued, 17 arrests of suspects in the act (“flagrantes”), 39 other arrests, 8 vehicles and 65 guns forfeited, and 51 structures used as shelter for trapping animals in protected areas (“hunting ranches”) destroyed.

The species trafficked included Hyacinth Macaw *Anodorhynchus hyacinthinus*, Lear’s Macaw *Anodorhynchus leari*, Red-browed Amazon *Amazona rhodocorytha*, Vinaceous-breasted Amazon *Amazona vinacea*, Red-tailed Amazon *Amazona brasiliensis*, Golden Parakeet *Guarouba guarouba*, Bearded Bellbird *Procnias averano*, Buffy-fronted Seedeater *Sporophila frontalis*, Temminck’s Seedeater *Sporophila falcirostris*, Great-billed Seed-Finch *Sporophila maximiliani*, Jaguar *Panthera onca* and Ocelot *Leopardus pardalis*.

Besides having been one of the most important counter wildlife trafficking—national and transnational—actions in Brazil, Operation Oxóssi represented a breakthrough in IWT in the country as it provided the legal basis and an important precedent for the use of the Penal Code, especially Article 180, in wildlife trafficking cases, paving the way for its wider use in Brazil allowing the justice system to prosecute and set penalties for professional traffickers which are more consistent with the serious crimes they commit and their profound detrimental impacts on society.



Bearded Bellbird
Procnias averano



Buffy-fronted
seedeater
Sporophila frontalis



Temminck’s
Seedeater
Sporophila falcirostris



Great-billed
Seed-Finch
Sporophila maximiliani



Jaguar
Panthera onca



Ocelot
Leopardus pardalis

5.2 Size and Scope of the Domestic Illegal Bird Trade:

The following analysis and discussion of the illegal domestic bird trade in the northeast, southeast and central-west regions of Brazil is based on data from the following sources:

- a) Scientific Literature Review
- b) IBAMA's Open Data Portal
- c) Environmental Military Police of São Paulo state (CPAmb-SP)
- d) News articles on Official and Non-Official websites

Analysis of Bird Trade Data from the Scientific Literature

A synthesis of partial data in the relevant literature on the illegal domestic bird trade over the last 20 years provides a snapshot of the size and composition of this trade and confirms the results of the additional analyses presented in the subsequent sections.

- Based on Destro et al. (2012), 24 of the 30 most confiscated species from the illegal trade from 2005 to 2009 were birds, including the top five confiscated species. According to the same study, birds comprised over 80% of the domestic trade during this period. Between 2002–2009, 81% of all animals received by the official wild animal reception centres (CETAS) were birds, mostly passerines (perching or songbirds).
- A study by Alves et al. (2013) revealed that at least 295 species of birds were sold commercially in the illegal pet trade. Based on these figures, the authors estimate that around 400 species—or 20% of Brazil's native bird species—are currently impacted by illegal trade.
- According to a ten-year analysis (2003–2013) from the CRAS/PET reception centre in the city of São Paulo managed by the State Government (see Table 3), a total of 47,136 birds from 387 different species were received by the centre during the period (average 4,285 birds/year). However, around 60% of this total belonged to just 10 species. Almost 90% of all animals received by the centre were seized from the illegal trade by various police forces including the Federal Police, Civil Police, Environmental Police, the Metropolitan Environmental Civil Guard, IBAMA and the Secretariat of the Environment. The remainder were handed over by members of the public, the fire brigade, air traffic control authorities, and others. The largest group of birds were passerines, followed by parrots (SAVE Brasil, 2017).
- The most frequently received species was the Saffron Finch *Sicalis flaveola*, which topped the list every year over the ten-year period except for one year (2003). The Green-winged Saltator *Saltator similis* and the Double-collared Seedeater *Sporophila caerulea* are also amongst the top three most frequently received birds. The Thraupidae seed-eating family accounted for about half of the birds arriving at the centre (23,305 individuals from 48 species).
- The second most frequently received bird family were the Psittacidae; although parrots were the most diverse group of birds brought to the centre (55 species), only one species, the Turquoise-fronted Amazon *Amazona aestiva* was amongst the top ten most frequently received bird species overall (eighth place). More recent data from CPMAMB-SP places *A. aestiva* in 4th place in terms of numbers of seized birds for this species in the last two and a half years.
- Approximately 12% of all birds received (5,831) by the CRAS/PET were endangered species (globally, nationally or on the official list of endangered species of the State of São Paulo), including nine species of Psittacidae and two globally threatened passerines: the Buffy-fronted Seedeater *Sporophila frontalis* and the Temminck's Seedeater *Sporophila falcirostris*. Analysis of species sensitivity to anthropic disturbance of the birds received by the centre revealed that 43% of the species were considered to have low sensitivity, and therefore were potentially more likely to adapt to modified environments once released.
- The findings of SAVE Brazil's analysis of the CRAS/PET data are consistent with the findings

of the same authors' analysis of data from another large reception centre in São Paulo state, CeMaCAS (DEPAVE-3), which from 2003 to 2012 received a total of 20,614 birds from 303 species. In contrast with CRAS/PET, less than half of the birds received by DEPAVE-3 during this period came from seizures from the trade. However, a separate analysis of their data on confiscated birds shows a similar pattern to that from other reception centres: a dominance of passerines, with the Saffron Finch *Sicalis flaveola*, Double-collared Seedeater *Sporophila caerulescens* and the Green-winged Saltator *Saltator similis* as the top species received.

- The findings from both analyses reveal that these three species comprise 30% of all bird species received as confiscated birds in both centres. These findings are also consistent with those from other similar studies, including national-level studies (Destro et al., 2012; Beck et al., 2017) and other state-level data, such in the analysis of data from CETAS in the northeastern state of Paraíba (Pagano et al., 2009).
- Therefore, it is reasonable to conclude that, even in the absence of a comprehensive systematic analysis of the records of all Brazilian reception centre and seizure data from all wildlife trade control agencies, the primary species and quantity patterns in the State of São Paulo are a fair representation of the trade in the other major destination states in Brazil (i.e. the States of Rio de Janeiro and Minas Gerais).
- There is compelling evidence of a strong and highly damaging trade in Turquoise-fronted Amazon *Amazona aestiva*, as summarised in Box VI.

400 species (20% of Brazil's native bird species) are impacted by illegal trade

- ~ 4,285 birds/year are received by the CRAS/PET reception centre in the city of São Paulo (90% were seized from illegal wildlife trade)
- 12% of all birds received (5,831) by the CRAS/PET were endangered species
- The most frequently received species were the Saffron Finch, Green-winged Saltator, and Double-collared Seedeater
- Parrots were the most diverse group of birds with 55 different species



Table 3. Species received by CRAS/PET wildlife reception centre (São Paulo) 2003–2013 (based on SAVE Brasil, 2017)

TOP 5 BIRD SPECIES RECEIVED BY CRAS/PET 2003–2013					
Family	Scientific name	Common name-EN	Common name-PT	IUCN	Indiv
Thraupidae	<i>Sicalis flaveola</i>	Saffron Finch	Canário-da-terra	LC =	7300
Thraupidae	<i>Sporophila caerulescens</i>	Double-collared Seedeater	Coleirinho	LC ↑	4732
Thraupidae	<i>Saltator similis</i>	Green-winged Saltator	Trinca-ferro	LC ↓	4671
Thraupidae	<i>Paroaria dominicana</i>	Red-cowled Cardinal	Galo-da-campina	LC =	2957
Icteridae	<i>Gnorimopsar chopi</i>	Chopi Blackbird	Pássaro-preto	LC =	2636
TOP 5 ENDANGERED SPECIES RECEIVED BY CRAS/PET 2003-2013 (INCL NATIONAL / STATE-LEVEL ENDANGERED SP)					
Family	Scientific name	Common name-EN	Common name-PT	IUCN	Indiv
Cardinalidae	<i>Cyanoloxia brissonii</i>	Ultramarine Grosbeak	Azulão	LC ?	2025
Thraupidae	<i>Sporophila frontalis</i>	Buffy-fronted Seedeater	Pixoxó	VU ↓	1617
Thraupidae	<i>Sporophila angolensis</i>	Chestnut-bellied Seed-finch ³⁵	Curió	LC ↑	1005
Psittacidae	<i>Ara ararauna</i>	Blue-and-yellow Macaw	Arara-canindé	LC ↓	298
Thraupidae	<i>Sporophila falcirostris</i>	Temminck's Seedeater	Cigarra	VU ↓	221
OTHER GLOBALLY ENDANGERED SPECIES RECEIVED BY CRAS/PET 2003-2013					
Family	Scientific name	Common name-EN	Common name-PT	IUCN	Indiv
Thraupidae	<i>Sporophila maximiliani</i>	Great-billed Seed-finch ³⁶	Bicudo	EN ↓	113
Cotingidae	<i>Procnias nudicollis</i>	Bare-throated Bellbird	Araponga	VU ↓	26
Thraupidae	<i>Gubernatrix cristata</i>	Yellow Cardinal	Cardeal-amarelo	EN ↓	11
Psittacidae	<i>Amazona vinacea</i>	Vinaceous-breasted Amazon	Papagaio-de-peito-roxo	EN ↓	10
Psittacidae	<i>Anodorhynchus hyacinthinus</i>	Hyacinth Macaw	Arara-azul	VU ↓	10
Psittacidae	<i>Pyrrhura cruentata</i>	Ochre-marked Parakeet	Tiriba-grande	VU ↓	10
Thraupidae	<i>Tangara fastuosa</i>	Seven-coloured Tanager	Pintor	VU ↓	9
Psittacidae	<i>Amazona brasiliensis</i>	Red-tailed Amazon	Papagaio-de-cara-roxa	NT ↑	6
Accipitridae	<i>Amadonastur lacernulatus</i>	White-necked Hawk	Gavião-pombo-pequeno	VU ?	4
Psittacidae	<i>Pyrrhura perlata</i>	Crimson-bellied Parakeet	Tiriba-de-barriga-vermelha	VU =	4
Psittacidae	<i>Amazona rhodocorytha</i>	Red-browed Amazon	Chauá	VU ↓	3
Psittacidae	<i>Guaruba guarouba</i>	Golden Parakeet	Ararajuba	VU ↓	3
Cracidae	<i>Crax fasciolata</i>	Bare-faced Curassow	Mutum-de-penacho	VU ↓	2
Psittacidae	<i>Pionites leucogaster</i>	Green-thighed Parrot	Marianinha-de-cabeça-amarela	EN ↓	2
Icteridae	<i>Curaeus forbesi</i>	Forbes's Blackbird	Anumará	EN ↓	1
Thraupidae	<i>Tangara peruviana</i>	Black-backed Tanager	Saíra-sapucaia	VU ↓	1

³⁵Although the Chestnut-bellied Seed-finch *Sporophila angolensis* is common in other parts of Brazil, it is considered endangered in the State of São Paulo (and Critically Endangered in Minas Gerais). Authorised breeders have successfully bred this species for years, however the large supply of legalised captive-bred birds has not managed to reduce the trade in wild birds from this species, judging by the fairly steady numbers of birds seized and/or handed over to reception centres every year.

³⁶The status of the Great-billed Seed-finch *Sporophila maximiliani* is a cause for great concern. This species is considered critically endangered at the national level and is close to extinction—according to the IUCN Red List, the population of this species in Brazil is estimated to be less than 250 mature individuals. Birds from this species delivered to reception centres are likely to be escaped or seized birds from illegal breeders. One interviewee from IBAMA claimed that the only reason that poaching of this species is not higher is because it is so rare in nature.

IUCN Red List Terms

LC = species of least concern ↓ = population decreasing
 VU = vulnerable species ↑ = population increasing
 NT = near threatened species = = population stable
 EN = endangered species ? = uncertain

Analysis of Bird Trade Data from the IBAMA's Open Data Portal

A preliminary analysis of the illegal domestic bird trade was carried out using seizure data from IBAMA's Open Data Portal for the years 2017, 2018 and 2019 (partial to September). These data capture seizures carried out by IBAMA in nine states of the northeast (Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Sergipe, Alagoas, Bahia), four states in the southeast (Minas Gerais, São Paulo, Rio de Janeiro, Espírito Santo) and two states in the central-west (Goiás and Mato Grosso do Sul)—15 of the 26 Brazilian states.

Initially, data were filtered to include only seizures of more than 10 individuals of any one species, which revealed a disproportionately low number of seizures in 2017 as compared to 2018 and 2019. This may be explained by the lack of training of agents responsible for entering data in the new digital platform (IBAMA's Open Data Portal was created in 2017). It may also be due to the fact that many of these initial entries were not discriminated by species. Therefore, data from 2017 were considered unreliable and excluded from the analysis.

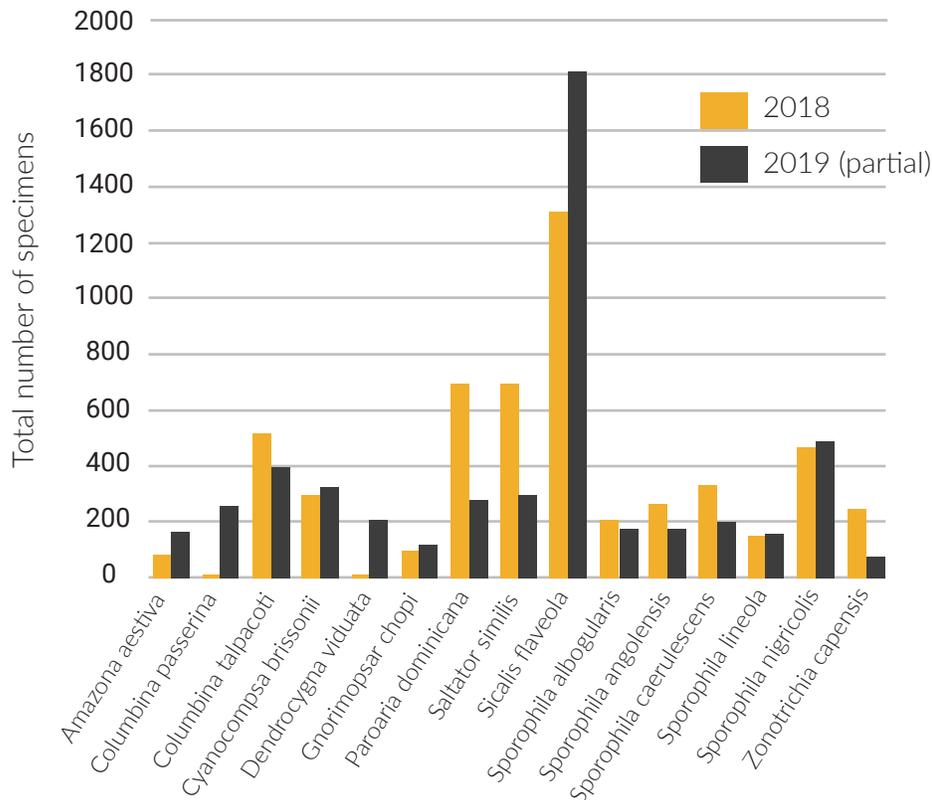
For the years 2018 and 2019 (partial), 163 species were recorded in seizures containing more than 10 individuals of any one species (including multi-species seizures), however, this total includes 15 exotic (non-native wild species) which were found together with native species during inspections without proper origin/importing/marking/CITES documentation. Most of the 163 species were represented by small numbers of individuals seized per year (multi-species seizures often contain only one or two individuals per species). Therefore, in order to select only the most relevant species for the illegal trade, the data were filtered again to select those species for which at least 50 animals were seized per year in at least one of the two years analysed, resulting in 29 species with at least 50 seized specimens. The data were filtered again to identify species with more than 100 individuals seized in 2018 or 2019, which resulted in 21 species. Of this new total, the 15 species with the largest numbers of birds seized by IBAMA in 2018 and 2019 (partial to September) are listed in Table 4 below.

TABLE 4: BIRD SPECIES WITH LARGEST SEIZURES BY IBAMA IN 2018–2019			
	2018	2019 (partial)	Total
Saffron Finch <i>Sicalis flaveola</i>	1305	1810	3115
Red-cowled Cardinal <i>Paroaria dominicana</i>	692	274	966
Dubbois' Seedeater <i>Sporophila nigricolis</i>	461	489	950
Ruddy Ground-dove <i>Columbina talpacoti</i>	516	393	909
Green-winged Saltator <i>Saltator similis</i>	336	290	626
Ultramarine Grosbeak <i>Cyanocompsa brissonii</i>	293	324	617
Double-collared Seedeater <i>Sporophila caerulea</i>	329	193	522
Chestnut-bellied Seed-finch <i>Sporophila angolensis</i>	258	173	431
White-throated Seedeater <i>Sporophila albogularis</i>	205	180	385
Rufous-collared Sparrow <i>Zonotrichia capensis</i>	243	68	311
Lined Seedeater <i>Sporophila lineola</i>	152	150	302
Common Ground-dove <i>Columbina passerina</i>	12	250	262
Turquoise-fronted Amazon <i>Amazona aestiva</i>	71	158	229
Chopi Blackbird <i>Gnorimopsar chopi</i>	98	116	214
White-faced Whistling-duck <i>Dendrocygna viduata</i>	7	205	212

The Saffron Finch *Sicalis flaveola* was by far the most seized species, representing 31% of the total, followed by the Red-cowled Cardinal *Paroaria dominicana* (10%) and Dubbois' Seedeater *Sporophila nigricolis* (9%). In this dataset, the Turquoise-fronted Amazon *Amazona aestiva* appears in 13th with only 229 individuals seized over the two-year period. However, as revealed in data from the Environmental Military Police of São Paulo state (CPAmb - SP, listed below) and also described in Box VI: Turquoise-fronted Amazon Trafficking in Brazil, numbers of seized birds of this species by state-level police forces are much higher than those detected in IBAMA's open data, ranging from 700 to over 1,000 seized parrots in a single annual reproductive season, depending on the source of data.

Figure 8 below illustrates the importance of the Saffron Finch for Brazil's domestic illegal wildlife trade. This species is also important to the transboundary illegal wildlife trade in the Amazon region, where subspecies of *S. flaveola* from Peru and Venezuela are trafficked in high numbers into Brazil.

Figure 8. Total number of specimens of the 15 most seized species in 2018 and 2019 (based on analysis of data on IBAMA's Open Data Portal)



It is important to mention the Eared Dove *Zenaida auriculata* and its subspecies (*Z. a. noronha*) (widely distributed in northeast Brazil), which have traditionally been poached in large numbers for their meat and illegally kept in captivity. IBAMA data from 2018 and 2019 (partial) reveals that 3,033 *Z. auriculata* and 8,056 *Z. a. noronha* were either poached, traded, transported or kept illegally in several different Brazilian states.

Entries in the IBAMA Open Data of several endangered species are of special concern. The Great-billed Seed-finch *Sporophila maximiliani* is Endangered according to both IUCN and the Brazilian Red List of Threatened Fauna. Although scarce throughout its range, it still appears in illegal trade, with 127 specimens seized in 2018 and 36 in 2019 (considering only seizures of more than 10 individuals). Other endangered species appearing in IBAMA seizure data in 2018 and 2019 include one Lear's

Macaw *Anodorhynchus leari* in 2019 (listed by IUCN as Endangered, Brazil’s Red List and CITES Appendix I) and one Yellow Cardinal *Gubernatrix cristata* in 2018 (listed by IUCN as Endangered, Brazil’s Red List and CITES Appendix II). Both species garner very high values on the illegal market, nationally and internationally.

Analysis of data from the Environmental Military Police of São Paulo state (CPAmb-SP)

As part of this assessment, an e-SIC information request was submitted to the Environmental Military Police (CPAmb) of São Paulo state. The response was quick and well-organised, and included detailed seizure data, including location (city or town) of seizure, year, species, number per species and values of fines.

Based on the data provided, this police force alone seized 32,420 animals in 2017, 32,509 animals in 2018 and 17,111 from January to July 2019—a staggering total of 82,040 animals seized between January 2017 and July 2019 in São Paulo state alone, which maintains the historical mean of specimens seized by this police force at 30,000 per year. Birds accounted for about 80% of all animals seized (see Table 5), corroborating other data sources (Beck *et al.*, 2017; SAVE Brasil 2017; Destro *et al.*, 2012).

Additional data provided by CPAmb-SP of illegally sourced wild animals between 2017 and July 2019 reveals a total of 495 species, including several endangered species, such as the Harpy Eagle *Harpia harpyja*, Hyacinth Macaw *Anodorhynchus hyacinthinus*, Jaguar *Panthera onca* and the highly

TABLE 5: NUMBER OF SPECIMENS SEIZED BY THE ENVIRONMENTAL MILITARY POLICE OF SÃO PAULO STATE (CPAMB-SP) BETWEEN 2008 AND 2016

Year	Wild Birds	Other Wildlife	Total Wildlife
2008	25,828	5,344	31,172
2009	23,939	4,054	27,993
2010	19,951	3,954	23,905
2011	23,538	4,420	27,958
2012	22,960	4,102	27,062
2013	26,647	3,264	29,911
2014	23,064	2,937	26,001
2015	32,530	5,598	38,128
2016	22,337	2,164	24,501

threatened Yellow Cardinal *Gubernatrix cristata*, native to southern Brazil and northern Argentina (IUCN Red List estimated population 1,000–2,000), amongst many others. The most frequently seized species (50 or more specimens seized from January 2017 to July 2019) totalled 66 species.

The top 15 most seized bird species by the CPAmb-SP police force during this period are described in Table 6 below. Again, the Saffron Finch *Sicalis flaveola* is the species with the largest numbers of seized specimens, followed by the Double-collared Seedeater *Sporophila caerulescens* and the Green-winged Saltator *Saltator similis*.

The Turquoise-fronted Amazon *Amazona aestiva* came in fifth, with the staggering average of over 1,000 seized birds per year, a very significant number, given that the CPAmb-SP figures account for only one of several police forces in the state of São Paulo, and that most *A. aestiva* seized in São Paulo are believed to come from the same region in Mato Grosso do Sul state. A recent article (25th November 2019)³⁷ published online by a major national newspaper, covering a joint IBAMA/Mato Grosso do Sul state Environmental Military Police operation (CPAmb) to disrupt trafficking of Turquoise-fronted Amazons in that state reports that 418 *A. aestiva* were seized in 2018, whereas a total of 1,045 birds of this species had been seized through November 2019, an increase of 142%. This may be due to a higher detection rate by law enforcement agencies, but regardless, parrot expert and researcher Gláucia Seixas, quoted in the article, claimed that 85% of the 300 *A. aestiva* nests that her research monitors have been poached by traffickers. She predicts that if poaching continues, it is likely that this species will become Endangered.

The numbers of seized birds belonging to Psittacidae spp. species were also surprising, with several threatened species listed (e.g. 8 Hyacinth Macaws *Anodorhynchus hyacinthinus*) and other less threatened species in relatively high numbers (e.g. 240 Blue-and-yellow Macaws *Ara ararauna*).

TABLE 6: TOP 15 MOST SEIZED BIRD SPECIES BY THE CPAMB-SP POLICE FORCE FROM JANUARY 2017 TO JULY 2019

Scientific Name	Common Name	2017	2018	2019 (partial)	Total
<i>Sicalis flaveola</i>	Saffron Finch	6443	6582	3208	16233
<i>Sporophila caerulea</i>	Double-collared Seedeater	6135	6475	3415	16025
<i>Saltator similis</i>	Green-winged Saltator	3785	3995	1984	9764
<i>Spinus magellanicus</i>	Hooded Siskin	3112	651	505	4268
<i>Amazona aestiva</i>	Turquoise-fronted Amazon	1134	1180	808	3122
<i>Gnorimopsar chopi</i>	Chopi Blackbird	841	1452	387	2680
<i>Sporophila lineola</i>	Lined Seedeater	895	862	564	2321
<i>Sporophila angolensis</i>	Chestnut-bellied Seed-finch	1017	885	280	2182
<i>Cyanoloxia brissonii</i>	Ultramarine Grosbeak	550	710	288	1548
<i>Aratinga leucophthalma</i>	White-eyed Parakeet	515	594	304	1413
<i>Paroaria dominicana</i>	Red-cowled Cardinal	460	534	292	1286
<i>Zonotrichia capensis</i>	Rufous-collared Sparrow	450	423	198	1071
<i>Turdus rufiventris</i>	Rufous-bellied Thrush	435	382	210	1027
<i>Coryphospingus cucullatus</i>	Red-crested Finch	437	379	160	976
<i>Sporophila nigricollis</i>	Yellow-bellied Seedeater	236	285	185	706

³⁷<https://g1.globo.com/ms/mato-grosso-do-sul/noticia/2019/11/25/trafico-de-papagaios-cresce-142percent-em-ms-numero-de-aves-apreendidas-salta-de-431-para-1045.ghtml>

TOP 15 SEIZED BIRD SPECIES



Data obtained from news articles on official and non-official websites

Trade data were also obtained from official government websites including those of federal and state government agencies and police forces (which usually have specific news or press webpages), as well as non-official websites including those of the media and civil society organisations. Although data from news articles cannot be used for analysis of quantitative data, they provide an indication of the widespread and sustained nature of the illegal wildlife trade in Brazil, with news of seizures being published across the entire country throughout the year and involving large numbers of species. They also show that despite the considerable resource, equipment and capacity constraints faced by government agents and police forces responsible for controlling IWT in Brazil, efforts are being made and the amount and quality of the information on these websites is growing and slowly improving.

Interestingly, although official websites published more articles on wildlife seizures during the 10-year period analysed, the total number of reported seized specimens was significantly larger in news articles on non-official websites: 50,606 seized specimens on official websites and 70,263 on non-official websites.

Figure 9. Comparison between number of bird specimens seized on non-official news sites (blue) and on official news sites (grey)

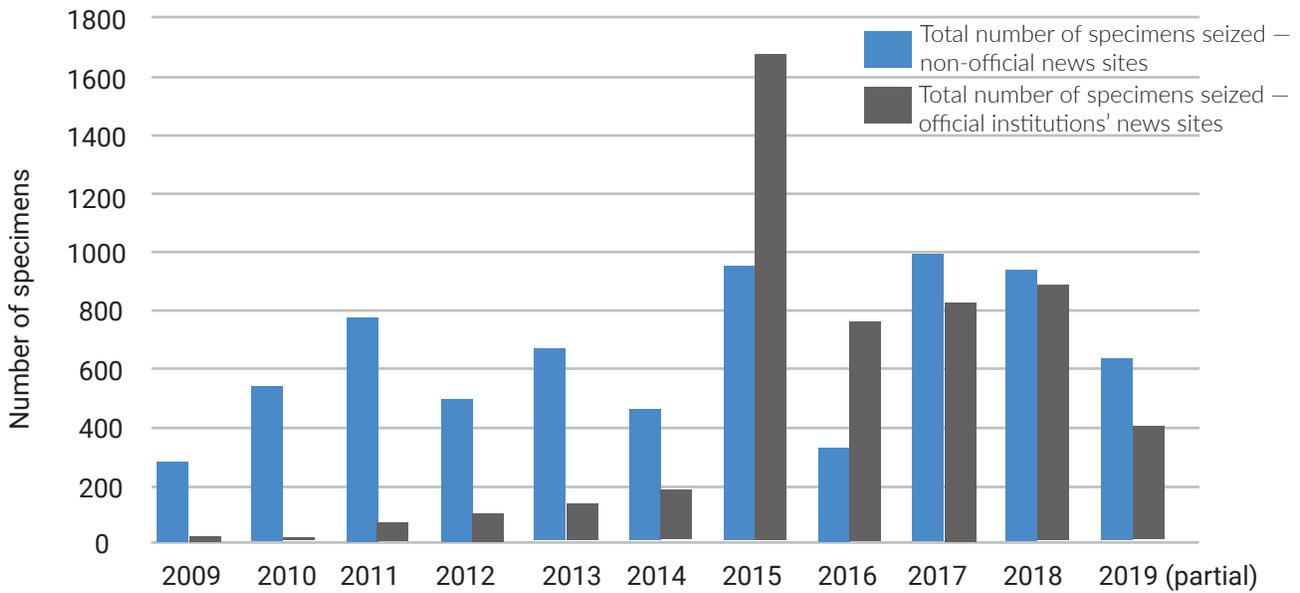


Figure 9 shows the difference between the number of seized bird specimens reported in news articles from official and non-official websites. Until 2015, it appears that government institutions did not report seizures of wild animals often, likely because IWT was not considered a priority by the communication divisions of the agencies. From 2015 onward, official websites displayed more seizure information, however this information may still be incomplete in terms of species identification or numbers of seized animals per species.

A total of 377 news articles featured on official websites covering a 10-year period (2009 to October 2019) were analysed. Collectively these articles mention a total of 50,606 specimens of wild birds belonging to an estimated 1,042 species (the use of common names can make it difficult to identify species). A total of 274 news articles were published on non-official sites over the same period which mention 70,263 seized bird specimens belonging to an unknown number of species. The fact that the number of reported specimens seized was higher on non-official sites as compared to official sites was unexpected. The data from non-official websites provide additional insight into seizures not published by state-level enforcement agencies and can help build a more complete picture of IWT in Brazil, particularly in cases where official agencies are unable to gather or systemise their data, and where this information would otherwise be lost.

Box VI: Turquoise-fronted Amazon trafficking in Brazil (World Animal Protection)

World Animal Protection's campaign, "Wildlife. Not Pets" focuses on the booming global trade in wild animals kept as pets, also known as "exotic pets". This campaign aims to disrupt this industry and to protect wild animals from being poached from the wild and bred in captivity, just to become someone's pet (World Animal Protection 2019a).

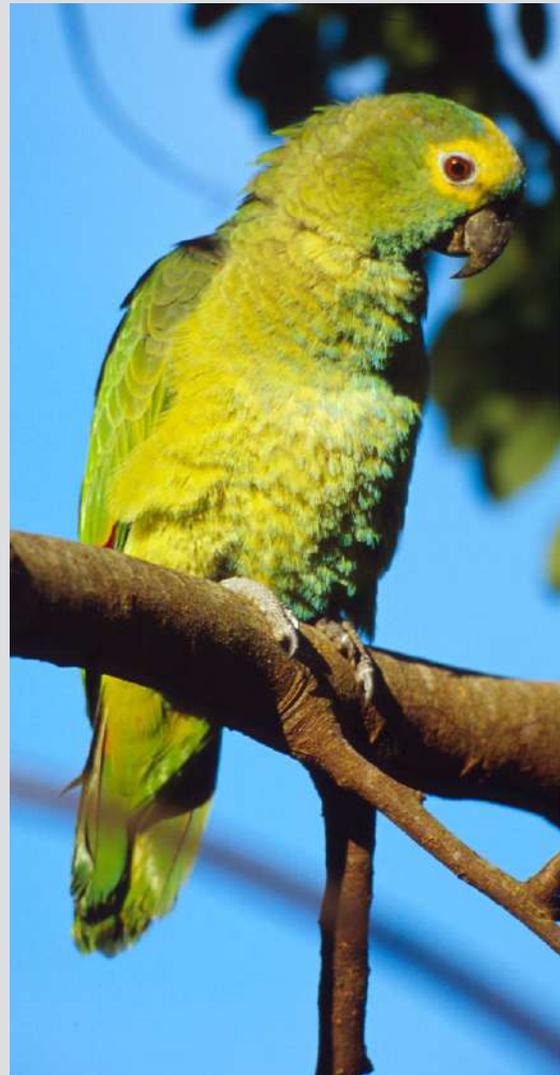
Parrots are amongst the most frequently traded wild animals in the world today. Their popularity stems both from their capacity for mimicry and their exuberant colouring. In Brazil, several species are popular, such as the Blue-and-yellow Macaw *Ara ararauna* and the Orange-winged Amazon *Amazona amazonica*, however, the Turquoise-fronted Amazon *Amazona aestiva* is by far the most desired parrot, due to its capacity to learn, its size and striking plumage (Ribeiro & Silva, 2007).

Although there is a legal trade of birds of the Psittacidae family (parrots, macaws and parakeets) in Brazil, with currently 205 commercial breeders and businesses, trafficking of these animals has reached critical levels in the country. So, despite the existence of a legal market, illegal trafficking of the Turquoise-fronted Amazon has continued regularly and in high volumes, indicating that the legal trade has done very little to reduce the pressure on natural populations (Vilela, 2012; IBAMA, 2016; Costa *et al.*, 2018; World Animal Protection, 2019).

Turquoise-fronted Amazons taken from the wild are subjected to poor conditions in transit and typically condemned to spend the rest of their lives in cages.

In Brazil, large numbers are kept as pets by rural populations and, at the national level, trafficking of these birds is an organised activity involving the shipment of thousands of eggs and newly-hatched young to distribution hubs in São Paulo, Rio de Janeiro and Belo Horizonte (Destro *et al.*, 2012) before they reach their end-consumers across the country and abroad. Trade in the Turquoise-fronted Amazon is seasonal and tied to their breeding season which takes place from September to December.

The average annual number of Turquoise-fronted Amazons seized by authorities totals approximately 1,440 individuals (Vilela, 2012; IBAMA, 2016; World Animal Protection, 2019b; data from the Environmental Military Police of Mato Grosso do Sul state). It is reasonable to assume that this figure, based on official seizures from illegal trade, represents a fraction of the total numbers traded, and a small part of the overall impact on wild populations of this species. The states of Mato Grosso and Minas Gerais rank highest in criminal cases for trafficking parrots. According to agents from IBAMA and the Secretary for the Environment and Sustainable Development (SEMAD) in Minas, approximately 700 Turquoise-fronted Amazon chicks were seized in just three months in 2019. In the state of Mato Grosso do Sul 1,045 parrots had been seized from the trade before the end of the breeding season, an increase of 142% in relation to the numbers of parrots seized (418) in the state in the previous year (Andrade, 2019).



Turquoise-fronted Amazon © Michel Gunther / WWF

Trafficking of Turquoise-fronted Amazons in Brazil begins with taking chicks from their nests before they have even grown feathers or opened their eyes, after which they are transported and held in precarious conditions, packed together, often in darkness and in cold environments, resulting in high mortality rates. Poor hygiene is intrinsically linked to trafficking and represents an increased risk of contamination and the transmission of zoonoses (Carvalho *et al.*, 1986). Heightened stress due to inadequate feeding is a frequent cause. Among the diseases potentially transmitted to humans is Psittacosis (an infectious disease caused by the bacterium *Chlamydia psittaci*) which in more severe cases may result in death (Raso *et al.*, 2015). Studies have shown mortality of up to 96% of newly hatched chicks in cases of chlamydial contamination (Raso *et al.*, 2002).

Captive birds often suffer from malnutrition, which accounts for 90% of clinical cases, associated with diets based only on sunflower seeds or leftover food. Vitamin deficiencies and a lack of variety in diet commonly leads to physiological problems, leading to death from malnutrition and liver-related problems. In addition, captive birds often have their wings clipped to prevent them from flying. As naturally social birds, parrots typically fly in pairs or groups in the wild and are rarely seen on their own. But in captivity, most live alone. Each of these behavioural deprivations generates stress, which in many cases goes unnoticed, even when they self-mutilate—parrots will often remove their own feathers when solitary and in situations of chronic stress (Bergman and Gaskins, 2011).

According to the World Pet Association (WPA), companies, governments and international trade organisations involved in the wildlife pet trade, whether wittingly or not, all have a crucial role to play (WPA 2019a), and should work to develop actions and policies which will decrease the illegal trade and keep these wild animals in the wild.



5.3 Wildlife Capture Sites and Major Trade Routes

The primary source regions for illegal wildlife are rural areas throughout Brazil, particularly the impoverished states of Bahia, Pernambuco, Paraíba, Piauí and Ceará in the northeast, the Amazon region in the north, as well as the states of Mato Grosso, Mato Grosso do Sul and Goiás in the Midwest (Alves, 2013; Destro, 2018). The illegal sale of wild animals is often a relevant source of income for hundreds of poor families in rural areas (Destro, 2018; Destro *et al.*, 2019).

Analyses from Destro (2018) and Destro (2019) show that wild animal capture sites are characterised by having well preserved vegetation cover and existence of protected areas, which demonstrates the relevance of both social inclusion programmes and law enforcement close to protected areas.

The main destination region for wild animals captured in the northeast, Amazon and Midwest regions has historically been the southeast region of Brazil (São Paulo, Rio de Janeiro and Minas Gerais) and the southern-most state of Rio Grande do Sul (Alves, 2013), a southwards flow that primarily uses roads for transportation of trafficked animals, except in the Amazon region where rivers are the primary transit routes.

Figure 10. Main source regions for illegal wildlife



Figure 11. Main destination regions for illegal wildlife



Anonymous interviewees from the Federal Highway Patrol and IBAMA mention that there is also a somewhat recent northwards flow of trafficked animals from the southeast to the northeast of the country. These interviewees also highlighted the states of Bahia and Minas Gerais as particularly relevant in IWT in Brazil, adding that these states play multiple roles in the trade as sources for wild animals, transit states—to the south as well as to the northeast—as well as consumer hubs.

Data from the CETAS in Paraíba state, in the northeast, reveal key source sites where birds are trapped for the trade, including Serra Branca, Remígio, Queimadas, Cabeceiras, Lagoa Seca, São Vicente do Seridó and the São José da Mata district in the rural areas of Campina Grande (Rocha, 2006, cited in Pagano *et al.*, 2010). Destro (2018, PhD thesis) lists all known localities of wild animal captures in the country.

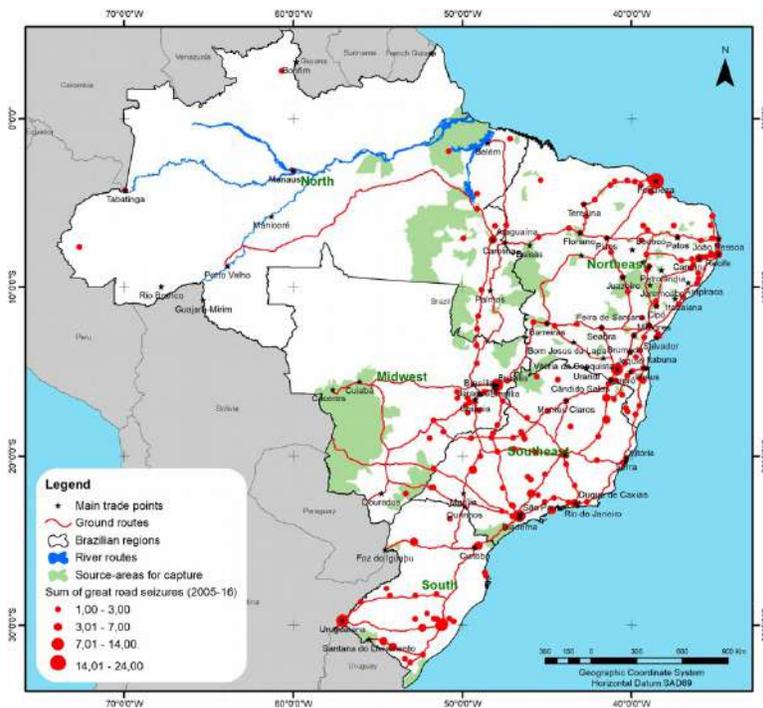


Figure 12: Main source areas for illegal wild animal capture and primary river and land routes used for their transportation (Source: Destro 2018, updated from Destro et al., 2012)



Identifying the precise site of capture is often challenging, given the multiplicity of locations, widespread distribution of the main traded species, and difficulties in accessing presumed source areas. In addition, like other types of organised crime, the primary sale locations are constantly changing.

According to interviewees from IBAMA and from the Federal Police, airports play an important role in IWT in Brazil, with large numbers of animals transported by air, both domestically and internationally (either smuggled or transported with false documentation/forged markings). Key airports for international trafficking of Brazilian wildlife are São Paulo (Guarulhos), Manaus, Belém, Recife, Salvador, Rio de Janeiro and Fortaleza.

Trafficking of native Brazilian bird eggs is another problem, with trafficking networks extending to Europe (specifically Portugal) and other parts of the world (Ortiz-von Halle, 2018).

In the northeast of Brazil, after their capture, animals are passed to small-scale traffickers who, aided by social media, visit their current suppliers, often collecting trapped animals by motorcycle or bicycle. These small assemblages of animals are then passed on to medium-scale traffickers who store them until appropriate long-distance transport is arranged by large traffickers in destination cities in the southeast or internationally. Once in large urban centres, animals are sold in open markets, pet shops and online (Develey, P., pers. comm., 30th January 2019). According to IBAMA interviewees, it is currently very common for animals to be ordered via WhatsApp groups/messages and delivered in busy subway stations, which makes escaping easy for traffickers if needed.

A more detailed description of the routes used by wildlife traffickers in the Amazon region, including routes to/from other Amazon countries, is provided in chapter 6. Illegal wildlife trade in Brazil is usually associated with other illicit activities (firearms possession, contraband, corruption, conspiracy, gang formation). It is characterised by widespread impunity of offenders, who, despite having been caught many times, do not serve their sentences or pay fines.

Box VII: Links between wildlife trafficking and other types of organised crime

IBAMA interviewees reported on recent incidents involving two-way trafficking of wildlife and contraband (or other illicit activities) on the borders of Brazil with other Amazon countries including Bolivia, Peru and Colombia, but also Paraguay in the south. This perception of a link between wildlife trafficking and other types of organised crime is confirmed in a study on organised crime in Brazil by the Wilson Centre (Olinger, 2013), which reveals that wildlife trafficking is often associated with other forms of illicit trade including drugs, arms, gems and timber.

Wild-caught animals are illegally transported across borders by traffickers whose primary purpose is the smuggling of other illegal merchandise (including drugs, cigarettes, alcohol and even arms) in the opposite direction. Therefore, the same traffickers bringing drugs and counterfeit merchandise into Brazil, leave the country with illegal wildlife. Interviewees for this assessment reported that this practice is common, citing a recent (but unverified) report of the trafficking of 20 macaws in a vehicle to Paraguay.

Another case was reported (but no evidence provided) on the tri-national border of Brazil with Colombia and Peru, where cocaine was being smuggled into Brazil and wild animals smuggled out of the country by the same traffickers. One unconfirmed case reported by an IBAMA interviewee involved a drug trafficker in Boca do Acre (Acre state, on the border with Peru) who used river turtles to disguise the smell of the drugs he was trafficking. A news article from an online broadsheet in Rondônia state reported on the seizure in a private residence of cocaine, live river turtles and illegal fishing equipment. A Federal Police interviewee stated, however, that although it is possible that there is a direct connection between wildlife trafficking and other types of trafficking, as yet there has not been a proven case of joint trafficking of wildlife and drugs in a border region. Nonetheless, an IBAMA interviewee noted that the absence of a confirmed connection between wildlife and other types of trafficking is probably a result of deficient controls, equipment and enforcement, and of the highly porous borders between Brazil and neighbouring countries, in particular in the Amazon and Pantanal regions.



© Jaguar and Ocelot skins © Adam Markham / WWF

5.4 Placement and Release of Seized Animals

The large numbers of animals seized by authorities across Brazil creates a huge challenge for the appropriate and scientifically-sound placement of confiscated animals. IBAMA's "Instrução Normativa" 23/2014 provides guidance and defines procedures for the placement of animals seized by the authorities or voluntarily handed in to reception centres by the public, as well as for the functioning of the CETAS. This regulation recognises the following options for the post-seizure placement of wild animals: a) immediate release into the wild; b) captivity (which includes, among other types, commercial and non-commercial breeders); c) gradual re-introduction in the wild; d) research institutions; and e) euthanasia (SAVE Brasil, 2017).

Release into the wild is often the most common form of placement for seized animals (Destro *et al.*, 2012), and is backed by existing legislation (Environmental Crimes Law 9.605/98 and Federal Decree 6.514/08), but is often carried out without the appropriate scientific guidance, care or safeguards.

According to SAVE Brasil (2017), releasing these animals into the wild receives a fair amount of criticism, on the basis that the releases are often carried out in the absence of proper criteria (Wajntal and Silveira, 2000) and that seized animals, when released, face difficulties adapting (IUCN, 2000; Joffily, 2010). However, there is also evidence (Kanaan and Gleason, 2014) of successful releases of birds seized from the trade in natural or semi-natural habitats and their subsequent adaptation to these new environments. For example, the successful release of over 40 endangered Vinaceous-breasted Amazons *Amazona vinacea* into the Araucarias National Park in 2011 and 2012, most of which remained in the area, paired and nested in subsequent years, with low mortality rates.

Other studies (Lima & Santos, 2005; White Jr *et al.*, 2012) have shown that adequate post-seizure care in captivity together with protection of good quality habitat, can result in successful release and adaptation of seized birds, or even their offspring, to a new natural environment.

Griffith *et al.* (1989) analysed hundreds of translocations and releases of wild animals and identified different factors that can help predict the success of the release. Most of the bird species seized in Brazil fall under the categories which would indicate higher release success (R. C. Borges, presentation delivered at a workshop on wildlife trafficking legislation organised by Freeland Brasil and the Public Prosecutor's Office of São Paulo state, May 2019).



Vinaceous-breasted Amazons

Release into the wild is often the most common form of placement for seized animals, and is backed by existing legislation, but is often carried out without the appropriate scientific guidance, care or safeguards.

SAVE Brasil (2017) proposes an “experimental protocol” for the release of confiscated birds, which is based on guidelines developed for this purpose produced by others (IUCN, 2000; IUCN, 2014; Efe *et al.*, 2006; Vidolin *et al.*, 2004; WPA & IUCN/SSC, 2009) and in the existing national legislation (Environmental Crimes Law 9605/1998, Federal Decree 6518/2008, IBAMA “*Instrução Normativa*” no. 23). The protocol, which was developed with the participation of several experts from governmental institutions, academia and NGOs, includes decision-making flow charts for identification of species/subspecies and suitability assessments of release areas; guidance for the assessment of the conservation status of species/subspecies; suggested additional research needed to support release decision-making (e.g. habitat, carrying capacity, population and sex ratio assessments of potential release areas), and post-release monitoring requirements. There are currently 33 official “release and monitoring areas” (ASMFS³⁸) registered with the Integrated Fauna Management System of the State of São Paulo (GEFAU³⁹), including protected areas (for the release of endangered species only), private reserves, the “legal reserve” areas within private properties, areas under habitat restoration, and for some species, agricultural landscapes and urban areas and parks. However, these areas are insufficient in number and size to cope with the large numbers of confiscated animals continually being seized from the trade.

There are considerable challenges involved in performing scientifically sound releases of animals into the wild. Ideally, population genetics studies of the species to be reintegrated into the wild should be undertaken. Failing to do so creates a risk of mixing genetically diverse populations, leading to a phenomenon called outbreeding depression (Templeton, 1986). A next step would be to carry out origin assignment inferences, which can be done using microsatellites or stable isotopes. Only then, animals of a certain species with diverse populations should be released back into the wild. Sometimes the place of origin can be inferred from basic information obtained during the seizure. Ideally animals should be sent back to the presumed sites of capture/collection, although in practice this is difficult to accomplish in Brazil given Complementary Law 140, which exempts the state where the animal was seized from responsibilities to protect wildlife beyond its jurisdiction. In order to send animals back to a different state of origin, the local CETAS can send the animals to a CETAS in another state closer to the presumed origin, however in most cases this is not possible due to lack of space in the receiving CETAS and lack of resources to arrange the transfer, quarantine, acclimatisation and post-release monitoring.

³⁸ASMFS-Áreas de Soltura e Monitoramento de Fauna Silvestre

³⁹GEFAU-Sistema Integrado de Gestão da Fauna Silvestre do Estado de São Paulo



Nonetheless, given that CETAS are usually overcrowded with healthy animals which were unlawfully taken from nature where they performed a relevant ecological role, and given that defaunation is an increasingly important component of ecosystem health and regeneration ability, it is not logical to prevent release efforts and to divert all these animals to captivity. However, IUCN guidelines for releases into the wild should be followed.

Conducting planned releases also creates opportunities for engaging local communities and young people in monitoring released birds, a powerful education and awareness-raising activity.

More research and monitoring of planned and controlled releases of seized animals needs to be carried out in order to assess the impacts reliably, both positive and negative, of releasing wild animals seized from the trade into a new natural environment. The results of such research can inform the development of guidance and the actions of the authorities responsible for repressing the trade (SAVE Brasil, 2017).



Toco Toucan © R.Isotti, A.Cambone / Homo Ambiens / WWF



6. WILDLIFE TRADE IN THE BRAZILIAN AMAZON



WILDLIFE TRADE IN THE BRAZILIAN AMAZON

Brazil shares the Amazon biome with seven other countries (Bolivia, Peru, Ecuador, Colombia, Venezuela, Guyana and Suriname) and one overseas territory (French Guiana). Almost 60% of the Amazon is in Brazil (Peru 11.3%, Colombia 7.9%, Venezuela 6.7%, Bolivia 6%, Guyana 3.5%, Suriname 2.3%, Ecuador 1.7% and French Guiana 1.3%). The porous borders of the Brazilian Amazon with its eight neighbours and a lack of co-ordination between enforcement agencies in these countries pose great challenges to their efforts to control illegal wildlife trade in this region.

In South America, geopolitical borders are considered hotspots for wildlife crimes and trafficking (UNEP, 2018). There is increasing evidence that in some parts of the border the illegal smuggling of wild animals, timber and other plants goes hand-in-hand with the smuggling of drugs and other illicit types of trafficking, such as in the triple border region between Brazil, Colombia and Peru (See Box VII: Links between wildlife trafficking and other types of organised crime). The lack of resources and insufficient capacity to control the flow of goods both in and out of the country means that the illegal trafficking of flora and fauna is virtually free of controls.

A crucial aspect of this transnational trafficking is that different Amazon countries assign different legal status to wildlife within their territories. For example, whilst in Brazil parrots (and other wildlife) are regarded as of “collective public interest” to be protected by the state, in Suriname, parrots are categorised as “cage species” that can be trapped in the wild during the open hunting seasons under a quota system and sold in pet shops or exported. No permit is required to keep pet parrots or other species in the “game” or “cage” categories (Sinovas *et al.*, 2017).

6.1 Size and composition of illegal trade in the Amazon

As discussed in previous sections, the tradition of keeping and breeding wild animals as pets (especially songbirds and parrots) is deeply rooted in the culture of many Brazilians in the northeast, southeast and south of the country, driving much of Brazil’s domestic illegal wildlife trade. In the Amazon, the relationship between local people and local wildlife is conditioned by the relatively recent occupation in the region (with many migrants from other regions of the country), the close ties with indigenous peoples and traditional

communities, the vastness of the region, and the high levels of poverty. Large numbers of wild animals (both terrestrial and freshwater species) are captured and consumed for subsistence, and sold for commercial purposes (mostly illegally, some legally) to both domestic and international markets. Bird feathers are frequently used for production of “indigenous” handicrafts for the tourism industry, as well as oils and creams produced from wild animals including the Amazon River Dolphin *Inia geoffrensis* and river turtles *Podocnemis* spp.

Informal discussions with a high ranking enforcement agent who has been working in the Brazilian Amazon for many years revealed that data on wildlife trafficking in/ from the region are notoriously scarce and that whatever data exist are scattered across multiple law enforcement agencies who are responsible for IWT at various levels (state, federal). Available data are not consolidated—not even within individual agencies.

Complementary data from IBAMA and ICMBio were analysed for the Amazon region, covering the period from 2012 to 2019. Invertebrates, various fish species as well as all flora species were removed from the dataset and then the remaining data were filtered by year. Data for each year were filtered by state, and then data for selected states were transferred to a “regional” spreadsheet (by collating information from eight of the nine legal Amazon states—Acre, Amazonas, Amapá, Mato Grosso, Pará, Rondônia, Roraima and Tocantins)⁴⁰. Analysis was then done by year. Infractions occurring at any stage of the trafficking chain (capture, transport, sale or keeping captive) were considered. In order to differentiate between small and larger numbers of seized animals, a first cut was performed to include only seizures involving more than ten animals, 10 kg of wild meat or 50 kg of the more popular species of fish. A second cut was performed to eliminate seizures with more than ten animals but comprising small numbers of multiple species. As a result, the analysis aimed to prioritise the most frequently traded animals and those with the largest numbers or volumes in the trade. Some flagship species, such as Jaguar *Panthera onca*, were included in the analysis, even if present in low numbers in seizures, or rarely seized.

⁴⁰The ‘Legal Amazon’ in Brazil comprises the eight states listed above plus the western part of the state of Maranhão; however, Maranhão was not included in this analysis as the illegal wildlife trade in this state is more similar to that of other northeastern states, rather than the IWT typical of Amazon states.



© Edward Parker / WWF

Bird feathers are frequently used for production of “indigenous” handicrafts for the tourism industry, as well as oils and creams that use wild animals including the Amazon River Dolphin and river turtles.

Results

After the first above-mentioned cut (eliminating seizures with few animals), the total number of species in all seizures during the period 2012–2019 was 160 species of which 38% were fish (food or ornamental), 34% were birds (food, handicrafts or captivity), 15% were mammals (food, captivity or skins), and 12% were reptiles (food, captivity, collections). Less than 1% were unidentified amphibians (however, turtles, terrapins and tortoises were sometimes classified as amphibians on IBAMA's spreadsheet) and less than 1% were unidentified butterflies. However, following the second cut (only species illegally traded in larger numbers and/or those more frequently traded during the period), the total number of species trafficked in the Amazon region fell to 72, which confirms the supposition that the complete dataset includes a large number of species with small numbers of individuals per species, as well as species that are only seized a few times during the seven-year period defined for the analysis (infrequent). Of these 72 species, 53% were fish (food and ornamental), 18% were mammals (food and pets), 15% were birds and 14% reptiles.

Nevertheless, despite these limitations, the analysis of data from IBAMA's Open Data portal and ICMBio's seizure data did reveal which species and groups of animals appear most frequently and in the largest numbers and volumes in seizures of illegally caught and commercialised wild animals in the Amazon region:

- a) River turtles (order Testudines) and their eggs**
- b) Ornamental fish**
- c) Fish for consumption**
- d) Wild meat**



© Luis Barreto / WWF-UK

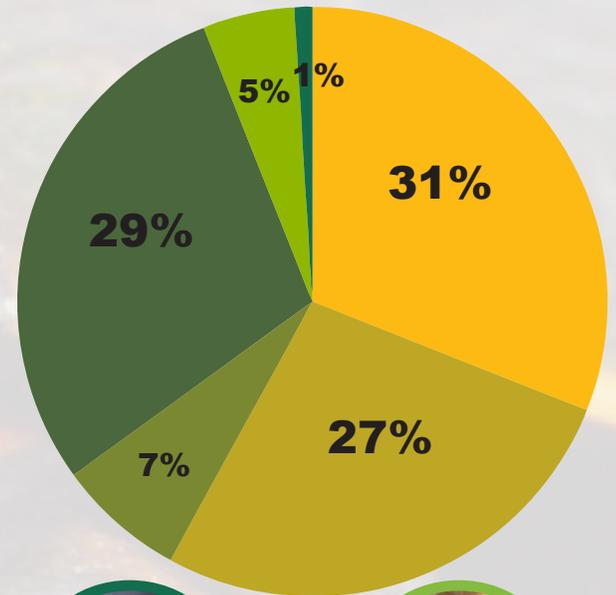
RIVER TURTLES

Yellow-spotted River Turtle © Juan Pratginestos / WWF

The capture of *Podocnemis* spp. river turtles and collection of their eggs for food and commercialisation has a long history in the Amazon region and strong cultural ties, despite the fact that all Amazon river turtles, and land tortoises are listed in CITES Appendix II. Egg collection is believed to have led to the extinction of the South American River Turtle *Podocnemis expansa* in the Upper Amazon e.g. in Venezuela (Pritchard and Trebbau, 1984).

Interviewees from the Federal Police and from IBAMA consider the trade in chelonians (Testudinae)—including river turtles, terrapins and tortoises—as the most significant in the Amazon region, in terms of numbers and volumes traded. Different species of chelonians have different uses amongst local people, ranging from consumption of the meat and eggs of river turtles to keeping land tortoises as pets (also used in traditional medicine in the Amazon, due to the belief that keeping pet tortoises helps cure asthma in children).

Aggregated data from 2012 to September 2019 (Figure 13) show a predominance of South American River Turtle *Podocnemis expansa* at 29% and Yellow-spotted River Turtle *Podocnemis unifilis* at 27% of all species seized from illegal sale, transport or captivity with an additional 31% unspecified Testudines (which highlights the importance of better training in species identification for enforcement agents).



1% Big-headed Amazon River Turtle, *Peltocephalus dumerilianus*



5% Red-headed Amazon River Turtle, *Podocnemis erythrocephala*



29% South American River Turtle, *Podocnemis expansa*



7% Six-tubercled Amazon River Turtle, *Podocnemis sextuberculata*

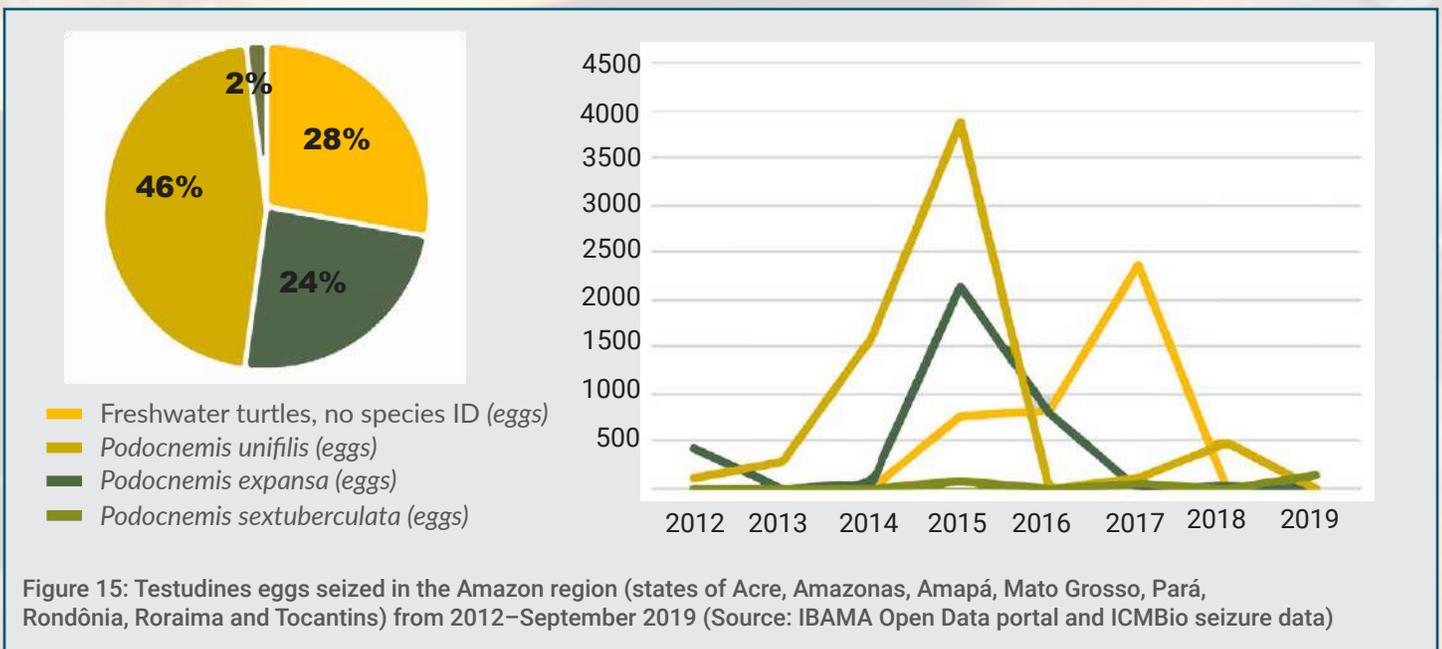
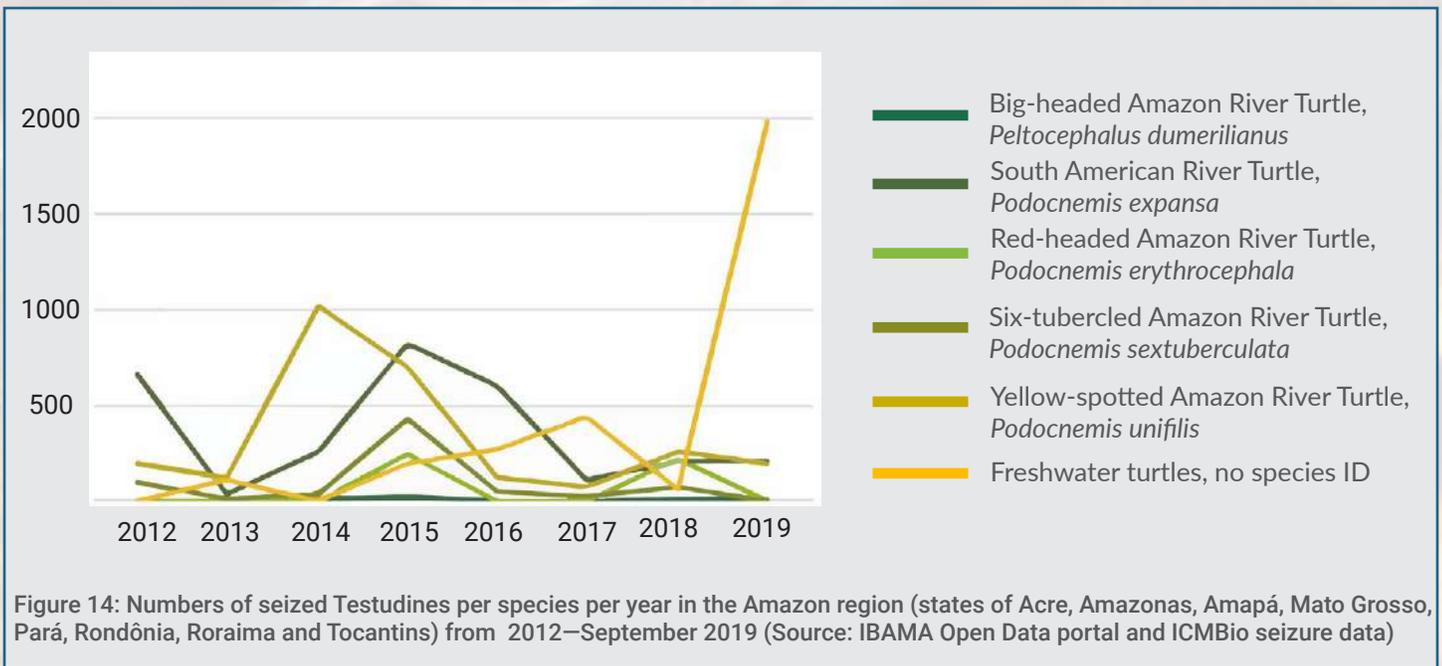


27% yellow-spotted Amazon River Turtle, *Podocnemis unifilis*



31% Freshwater turtles, no species ID

Figure 13: Seizures of Testudines in the Amazon region (states of Acre, Amazonas, Amapá, Mato Grosso, Pará, Rondônia, Roraima and Tocantins) from 2012–September 2019 (Source: IBAMA Open Data portal and ICMBio seizure data)



The data also show a marked presence of Testudines eggs in seizures from 2012 to September 2019. Of the total number of seized eggs during this period, 46% were Yellow-spotted River Turtle eggs *Podocnemis unifilis*, 24% were South American River Turtle eggs *Podocnemis expansa*, and 28% were eggs of unidentified Testudines (Fig 15). Again, accurate identification of a significant proportion of eggs seized by the enforcement agents may have revealed either a more balanced preference for eggs of either species, or a preference for eggs from one species over the other.

There was also a spike in the numbers of seized river turtle eggs in 2015 (with 3,872 eggs of *P. unifilis* alone), followed by another spike in 2017 (again comprised mostly of eggs from unidentified species: 2,362). It is important to note that the numbers of seized animals / eggs in the IBAMA data do not reflect the perceptions of those involved in IWT law enforcement, which is that the numbers of wild

animals or their products subject to poaching and trafficking are disproportionately large, compared to the numbers seized by the authorities.

The majority of seizures of river turtles and eggs took place inside areas protected by ICMBio. This highlights the need for strengthening the agency and its enforcement capacity, as well as for taking a social inclusion approach with the development of economic alternatives for local communities that live in the surrounding areas, as a strategy to reduce over-exploitation of river turtles in the Amazon region. It is worth noting that the above analysis is based on seizures involving more than ten individuals, meaning that seizures with fewer than ten animals or eggs were not included in the analysis (as they are more likely to be for consumption by local fishermen and their families, not for commercial use).

IBAMA's long-standing Amazon River Turtle Programme ("*Programa Quelônios da Amazônia*") for the protection of river turtle nesting sites in the region has had encouraging results. In the 40 years since its establishment, the programme has been directly responsible for the successful hatching of over 80 million river turtle hatchlings of three *Podocnemis* spp. in eight Amazon states through monitoring nesting beaches and clamping down on poaching of adults during the nesting season (IBAMA, 2018). After having been depleted almost to the point of no-return, populations of *Podocnemis expansa* are now recovering.

Communities are also increasingly receptive to playing a role in management programmes of wild populations and in low-cost captive breeding programmes (Pantoja-Lima *et al.*, 2014). Captive breeding initiatives for river turtles and caiman, as well as tanneries and manufacturing facilities exist in the region and could be regarded as an economic alternative to local communities, however, whilst sustainable in principle, there is also extensive evidence of these captive breeding facilities being used for the laundering of wild-caught and poached animals. There is also the associated risk of enabling the import and export of skins produced from wild (as opposed to captive-bred) animals, which appears to be a recurring problem in wildlife captive breeding programmes in Brazil.

According to an IBAMA interviewee, the institution recently issued a new regulation to curb the illegal practice in several caiman captive breeding operations of over-estimating the caiman populations on their ranches in order to get permits for collecting larger numbers of eggs, as part of the ranching system they use to manage wild populations of caiman (which involves incubating wild-collected caiman eggs, raising caimans to slaughter age, and releasing a proportion of caiman into the wild to repopulate the populations on their ranches).

ORNAMENTAL FISH

Cardinal Tetra

The aggregated data from IBAMA/ICMBio 2012–2019 (partial) for ornamental fish revealed 30 species in trade plus unidentified species. Many of the species were recorded only once in one single seizure, or in low numbers as compared to the species with larger numbers of individuals seized. Less common species were eliminated from the analysis to focus on species that appear in more than one seizure, with more than 500 individuals per seizure. This resulted in a list of nine top species of ornamental fish in terms of numbers seized, together with a large proportion of fish in the “unidentified species” category. Of the nine species with identification, the vast majority belonged to a single species, the Cardinal Tetra *Paracheirodon axelrodi*⁴¹ (Figure 16).

The remaining eight species, including the hugely popular Zebra Pleco *Hypancistrus zebra*⁴² and four species of the genus *Corydoras* (known as Cory catfish), correspond to less than a quarter of total numbers seized. The presence of the Zebra Pleco in IBAMA and ICMBio seizures is significant, given that exports of this rare diminutive catfish, which is endemic to the “large bend” portion of the Xingu River, have been banned. The Zebra Pleco is listed in CITES Appendix III, and although not assessed by the IUCN Red List, is already listed as Critically Endangered in Brazil’s Red Book of Brazilian Endangered Fauna (ICMBio/MMA, 2018) due to the illegal capture of large numbers of fish for the international aquarium market, and more recently due to the construction of the Belo Monte dam. Interviewees from IBAMA and from the Federal Police reported trafficking of the Zebra Pleco across the border from Brazil to Colombia and Peru (thousands of km from their native Xingu River), where they are exported as “legal and captive bred” mostly to Asia.

⁴¹<https://www.fishbase.se/summary/8195>

⁴²<http://www.fishbase.org/summary/Hypancistrus-zebra.html>

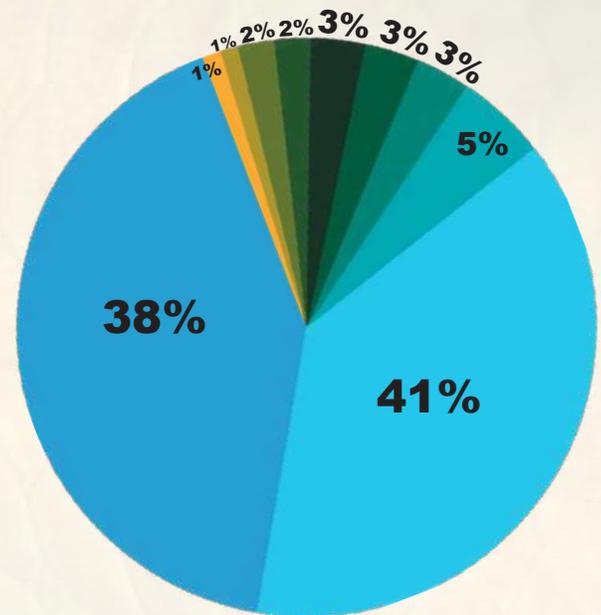
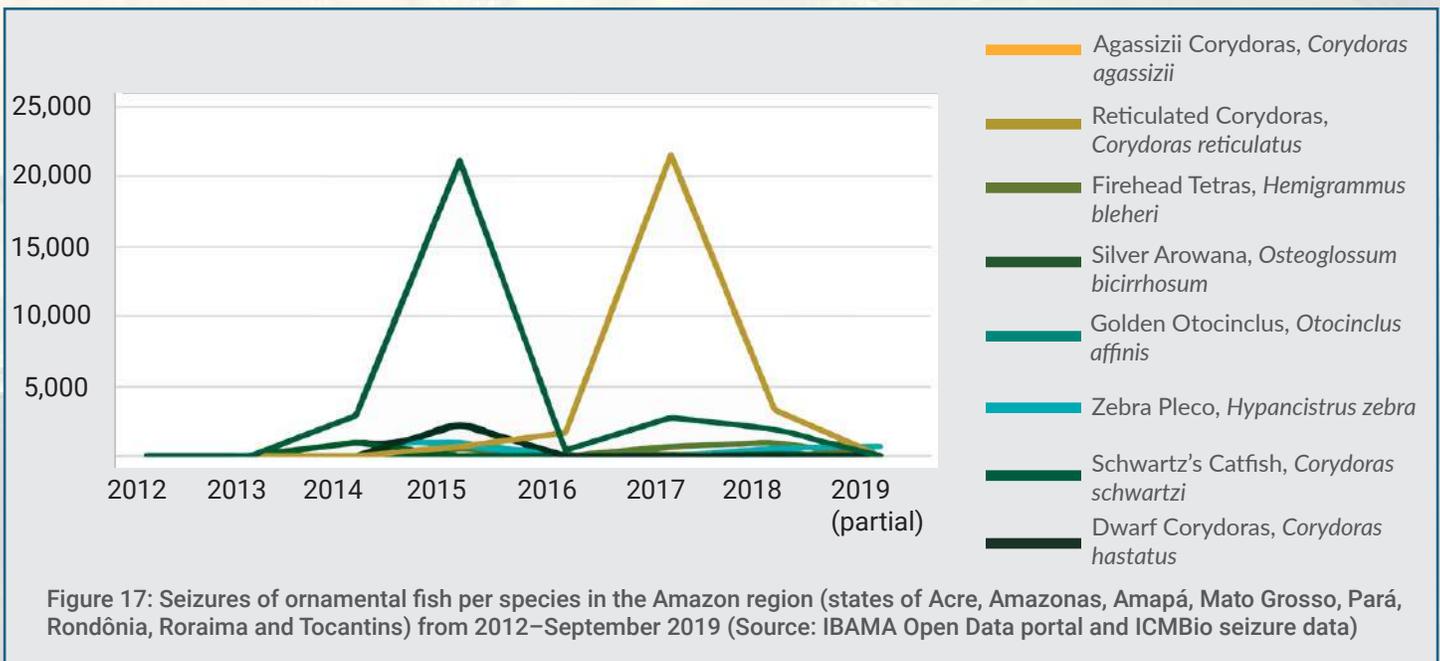


Figure 16: Species of ornamental fish seized in the Amazon region (states of Acre, Amazonas, Amapá, Mato Grosso, Pará, Rondônia, Roraima and Tocantins) from 2012–September 2019 (Source: IBAMA Open Data portal and ICMBio seizure data)

It is interesting to note that the Silver Arowana *Osteoglossum bicirrhosum*⁴³ is listed as both an ornamental fish and fish for consumption as food.

Some Asian cultures believe that arowanas (or dragon fish) have magical powers to keep evil spirits away and attract good fortune, happiness and wealth. The Asian species, known as the Golden Arowana *Scleropages formosus*, is listed in CITES Appendix I and is considered Endangered by IUCN, with existing populations in decline. This has resulted in greater demand for South American arowanas. The Black Arowana *Osteoglossum ferreirai*⁴⁴ is protected in Colombia and cannot be collected. The Silver Arowana *O. bicirrhosum* is more commonly found in seizures than the Black Arowana. Surprisingly, the rare Golden Arowana *Scleropages formosus* from Asia features heavily in the IBAMA dataset, both as an ornamental fish and as fish for consumption as food. This species is one of the world’s most valuable species of ornamental fish and can fetch US\$2,000 per individual⁴⁵. It is likely that enforcement agents who filled in the electronic offence forms simply wrote “aruana” on the entry and the first species identified by the system was the Golden, rather than the Silver arowana. It is likely that the agents who filled the forms did not realise this mistake, therefore entries recorded as Golden Aruanas were treated as *O. bicirrhosum* in the analysis.

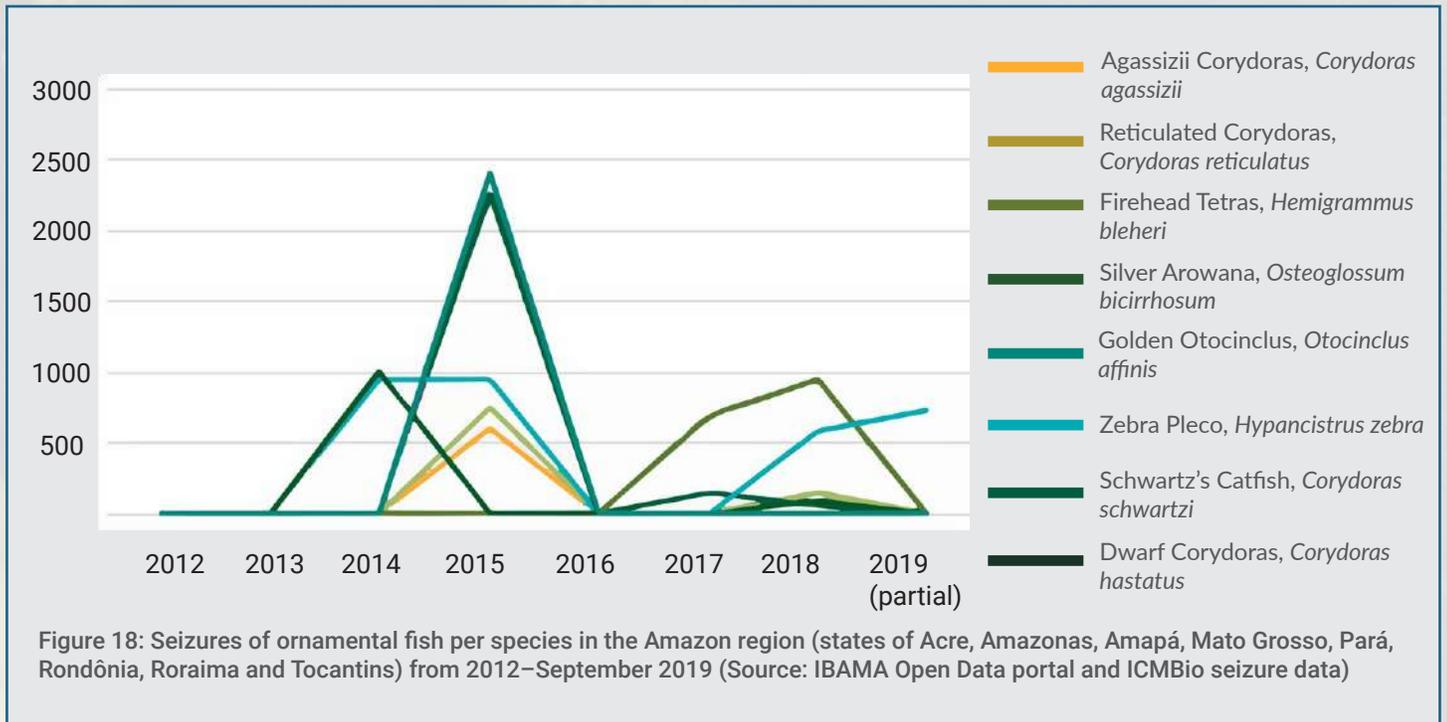
Like the results for river turtle eggs, the analysis of data for ornamental fish per species (Figure 17) reveals two clear spikes in numbers of fish seized—one in 2015 (large numbers of unidentified species of ornamental fish and another in 2017 (large numbers of Cardinal Tetras *Paracheirodon axelrodi*). When these two troughs are removed from the analysis, the results (Figure 18) show strong representation of the genus *Corydoras* and an increase in the numbers of Zebra Pleco *Hypancistrus zebra*—the much sought-after endemic catfish from the Xingu River “large bend”. This fish is allegedly being bred extensively in captivity at a viable price, but seizures of the species still seem to be increasing, according to a Federal Police interviewee.



⁴³<http://www.fishbase.org/Summary/SpeciesSummary.php?id=6234&lang=portuguese>

⁴⁴<https://www.fishbase.in/summary/Osteoglossum-ferreirai>

⁴⁵<https://www.nature.com/articles/srep24501>



Many seizures of ornamental fish, specifically those carried out by the Federal Police in airports, are not included in the IBAMA or ICMBio datasets, highlighting the need for more integrated data recording by the various agencies and police forces responsible for enforcement and control. An unpublished study conducted by Freeland Brasil in 2016 on wildlife trafficking between South America, Southeast Asia, China and Japan (using data from 2012 onward) revealed seizures of 940 young (2012), 40,000 ornamental fish of various species including the *Corydoras* and *Ancistrus* genus (2013) and 6,200 *Osteoglossum bicirrhosum* (2013). Data for 2018 from the Federal Police (personal communication) include 400 ornamental fish of various species, 82 plastic containers with several hundreds of ornamental fish of various species, 145 fish from a group with various species known as “bodó” (likely the Common Pleco *Liposarcus pardalis*), 389 Zebra Pleco *Hypancistrus zebra*, 16 Candy-striped Pleco (probably *Peckoltia vittata*), 29 medium-sized fish from unidentified species, 224 fish from small-sized unidentified species, 2,700 young Black Arowana *Osteoglossum ferreirai*, as well as what appeared to be fish from a new species, yet to be described by science.⁴⁶



⁴⁶During the final review process of this report, updated data on seizures of ornamental fish by the Federal Police in the State of Amazonas for 2018 and 2019 revealed that in 2018, in fact 700 Zebra Pleco (not 389) and 672 unidentified ornamental fish (not 224) had been seized, as well as the species and numbers already listed here. In 2019, the updated numbers of seized ornamental fish included 10,000 juvenile arowanas, 482 Zebra Pleco and 21,000 unspecified juvenile ornamental fish. All but the arowanas were seized in airports, ports or in Tabatinga (Brazilian border town with Leticia, Colombia). Most likely destination of all ornamental fish listed here is Colombia, except for the 10,000 juvenile ornamental fish seized in 2019 which were to be sold in Peru.

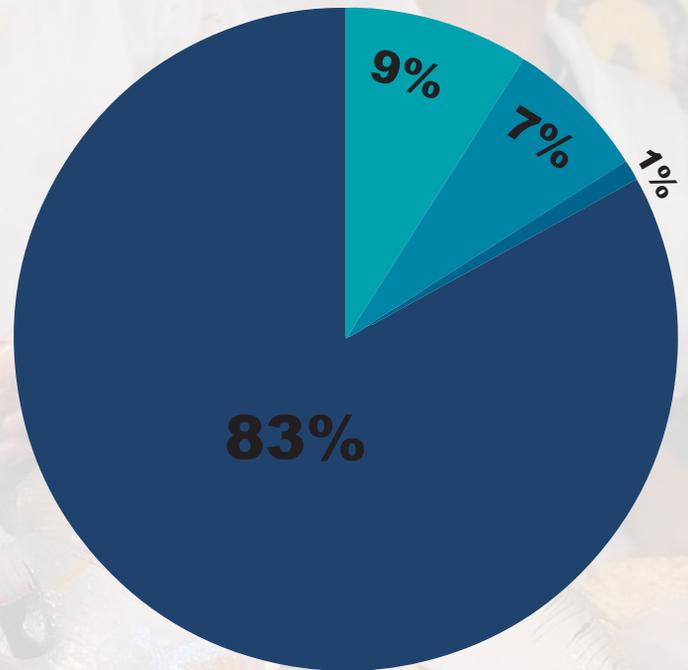
FISH FOR CONSUMPTION

Arapaima (Pirarucu) © Michel Roggo / WWF

The largest volumes of fish used for consumption in IBAMA and ICMBio seizures during the period analysed are from a single species: Arapaima (or Pirarucu) *Arapaima gigas*⁴⁷(Figure 19). This giant fish is part of a primitive group of carnivorous bony-tongued fish, the Osteoglossidae (same family as the arowanas), that crush their prey with a large tongue studded with teeth (Amazonian people use Pirarucu tongues as seed-graters). The Arapaima is the world's second largest freshwater species (reaching 4.5 metres in length and 200 kg), and the largest freshwater scaled fish species in the world. The Arapaima has first class market status in the Amazon region and is an important protein source in the diet of people living along the river, but it also has a strong international export market in the USA (Sinovas *et al.*, 2017). Furthermore, its skin is extensively used as leather for a multitude of products, which are exported, and its scales are used to produce decorative items, jewellery and other artefacts.

The analysis of IBAMA / ICMBio data on Arapaima *Arapaima gigas* in Figure 20 shows a clear increase in numbers of fish seized in the 2014–2015 period. Given that other species also display peaks around 2015, it is likely that these spikes correspond to times when additional resources, staff time/effort and possibly greater managerial interest and support were available for enforcement and control operations in this region.

Arapaima is extensively farmed in the Amazon, not only in Brazil but in other Amazon countries as well, notably Peru (see Box VIII).



83% Pirarucu, *Arapaima gigas*



9% Tambaqui, *Colossoma macropomum*



7% Piracatinga, *Calophysus macropterus*



1% Silver Arowana, *Osteoglossum bicirrhosum*

⁴⁷<https://www.fishbase.in/summary/Arapaima-gigas.html>

Figure 19: Species of fish for consumption analysed for this assessment seized in the Brazilian Amazon region (states of Acre, Amazonas, Amapá, Mato Grosso, Pará, Rondônia, Roraima and Tocantins) from 2012–September 2019 (Source: IBAMA Open Data portal and ICMBio seizure data)

Box VIII: Arapaima management in the Central Amazon region

The Mamirauá Sustainable Development Reserve is considered to be a successful and sustainable management programme, focused on the Arapaima *Arapaima gigas*. This extraordinary species can reach 4.5 m in length; its meat has an appealing colour and texture, and is of easy preparation, hence this is a much sought-after species.

Management of Arapaima in Brazil is determined by state-level legislation and therefore varies between states (Sinovas *et al.*, 2017). In some states, fishing Arapaima requires prior studies and a local management plan. Although fisheries statistics are available for the management areas, this is not the case for other areas. Nonetheless, population increases have been observed in managed areas, and local extinctions have occurred in areas where harvest is not controlled.

Fisheries are controlled through a licence system that allows local communities in the management areas to capture a given number of adult Arapaima. These harvest quotas are issued annually by IBAMA and are up to 30% of the adult Arapaima recorded in fishing areas, to ensure that most of the population is not affected.

The first harvest quota was authorised in 1999 in the Mamirauá Sustainable Development Reserve, but it was not until 2015 that 23 permits were issued in 21 different areas, including protected areas, fishing agreement areas and indigenous lands.

Management of the fisheries has allowed the recovery of Arapaima populations in the wild, and it has contributed to improving the quality of life of more than 300 local communities that take part in the management. In 2015, in the state of Amazonas alone, close to half a million individuals were caught in 21 Arapaima management areas, and gross sales of these fish resulted in revenues exceeding US\$2.8 million. Such practices help protect not only the managed fish, but also the ecosystems where they live.

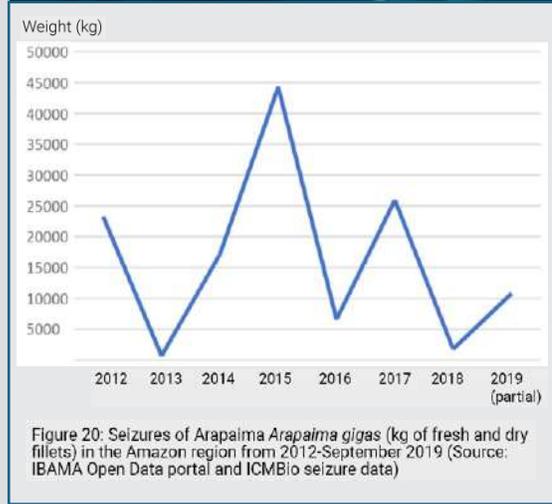
IBAMA participates in the management of Arapaima at the pre-harvest, harvest monitoring and post-harvest stages, including through analysis of fishing reports from previous years, participation in meetings with local communities, establishment of catch quotas, monitoring population counts and fishing activities, and controlling trade through a system of transportation licences for fish caught as part of management plans. Since Arapaima fishing is only considered to be non-detrimental when it is undertaken in management areas, the Brazilian government only authorises the export of Arapaima when it originates in management areas or when it has been bred in captivity according to CITES requirements.

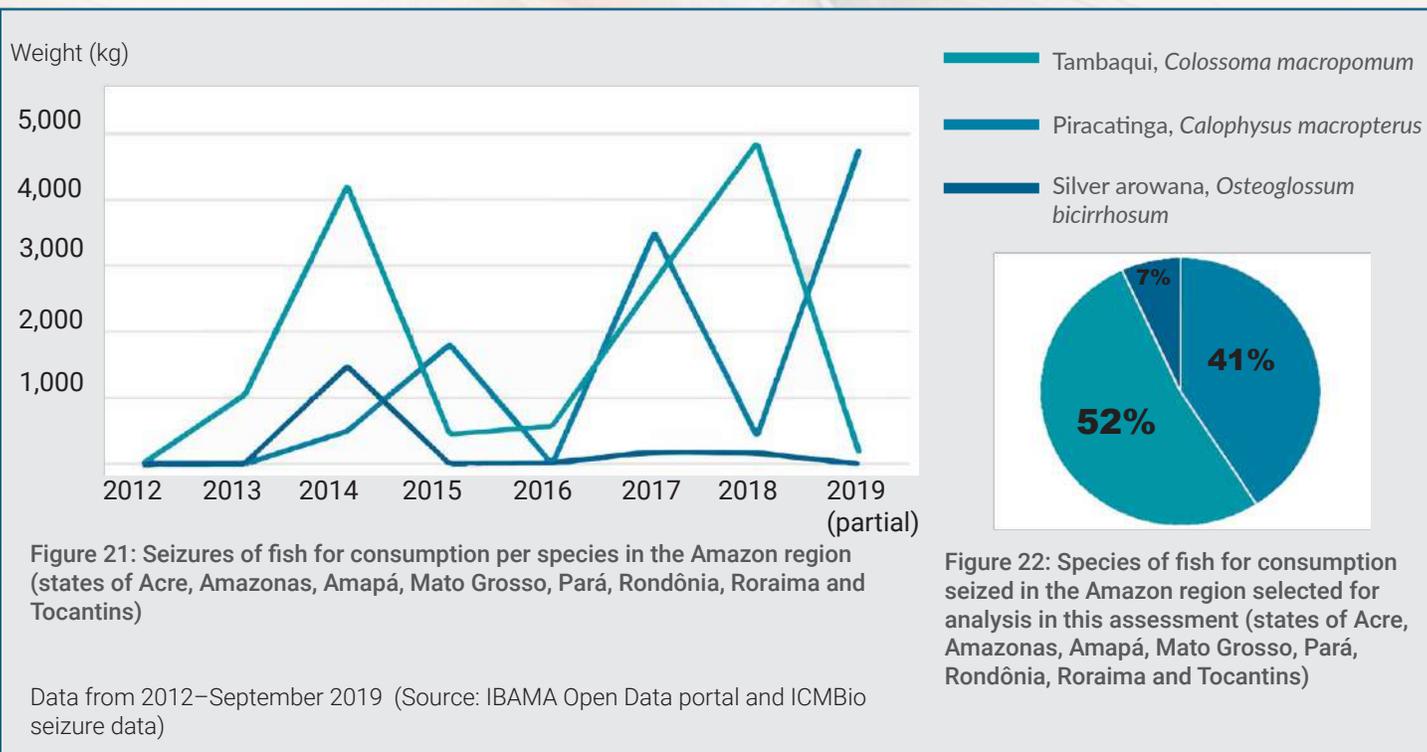
Fishing by communities in management areas does not result in meat exports, as domestic demand is very high, and the prices paid nationally are good; therefore, only skins and scales tend to be exported. The meat that is exported is from aquaculture, but there have only been exports in recent years as that is when fish breeders were able to meet CITES requirements for captive breeding. Brazil does not export live (juvenile) Arapaima specimens because of minimum size fishing restrictions and because the domestic market is able to absorb more than what is produced through aquaculture.

It is important to note, however, that the difficulty in differentiating legal from illegal Arapaima has led to extensive laundering and several attempts to transport and sell illegally caught fish. It may not be a coincidence that there were spikes in seizures of illegal Arapaima after the issuing of more permits to harvest the species.



Pirarucu © Michel Roggo / WWF





Removing Arapaima from the analysis reveals the relative importance of the other three selected species for analysis in this assessment (Figure 22)—Tambaqui *Colossoma macropomum*⁴⁸, Piracatinga *Calophysus macropterus*⁴⁹ (also known as Vulture Catfish) and the Silver Arowana *Osteoglossum bicirrhosum*⁵⁰. They are not necessarily the most seized species in terms of volume, but they all play a relevant role in regional and international illegal trade of fish for consumption, as explained below.

Tambaqui is the largest fruit- and seed-eating characin in the Amazon region (reaching up to 100 cm) and with first class market status⁵¹. This species was selected for analysis because it appears in high volumes in seizure data, with trade of illegal specimens being prevalent, as well as due to the fact that large specimens are the highest priced fish in the Central Amazon, where 91% of the total yield for this species is concentrated. Various restrictions exist to protect adult and young Tambaqui from overfishing, but these have neither been respected by fishermen nor can they be enforced by authorities in such a large area. The best management strategy would be to prohibit sales of young Tambaqui in urban markets.

Silver Arowana is a curious species, which displays mouth-brooding behaviour by males and is not among the most relevant in terms of volume in the seizure data. However, it was selected for analysis in this assessment because, besides being traded in large numbers as an ornamental fish (as seen in the previous section), the Silver Arowana is also a popular fish for consumption in the Brazilian Amazon⁵¹. Its yields as a fish for consumption are greatest in the Central Amazon in Brazil (77%), followed by the Peruvian Amazon (16%). It has second class market status. Therefore, this species not only plays a relevant role in the illegal supply chain as a food resource domestically, but it is relevant both for the domestic as well as for the international illegal trade as an ornamental fish.

Piracatinga, like the arowana, was not among the most seized in terms of volume, but the species is very relevant to the illegal wildlife trade. The species is captured using poached Caiman *Caiman crocodilus* and Amazon river dolphins (*Inia* spp and *Sotalia* spp) as bait, making its fishery highly destructive. Piracatinga is widely trafficked

⁴⁸<https://www.fishbase.in/summary/Colossoma-macropomum>

⁴⁹<https://www.fishbase.in/summary/Calophysus-macropterus>

⁵⁰<http://www.fishbase.org/Summary/SpeciesSummary.php?id=6234&lang=portuguese>

⁵¹<https://amazonwaters.org/fish/tambaqui/>

⁵²<http://amazonwaters.org/fish/aruana/>

across the borders of Brazil and Colombia, where it is widely consumed. It has third class market status and the Brazilian-Colombian-Peruvian border region accounts for most (78%) of the total yield of this species. It is one of the few catfish species that can bite out pieces of flesh and is also common in waters near urban waterfronts, where it feeds on offal. This catfish was successfully introduced to the Colombian market to replace a formerly popular but now over-exploited fish from the Magdalena river (outside of the Amazon) known as “Capaz” *Pimelodus grosskopfii*. Brazil set a 5-year moratorium on the piracatinga fisheries in 2015, which ended in January 2020.

Data on the seizures of the three additional species analysed for this report show spikes of seizures in different years which could be due to a variety of reasons, including detection effort (Figure 21). An interesting point to note in the graph is the apparent gradual increase in seizures of Piracatinga. Again, the rise may be due to an increase in awareness of law enforcement agents and agencies, hence increasing detection, but, if there is an upward trend in the exploitation of Piracatinga, this should raise a red flag for two reasons. First because the flesh of Caiman *Caiman crocodylus* and river dolphin (*Inia* spp. and *Sotalia* spp.) is used as bait for fishing Piracatinga, despite the IBAMA 5-year moratorium on the Piracatinga fishery since 2015 (an increase in the exploitation of Piracatinga may lead to the continuing or even an increase in river dolphin and caiman poaching). Second, the major consumer market for the Piracatinga is in Colombia, meaning that this may lead to an increase of transnational wildlife crime and smuggling. Or third, as a result of the end of the moratorium.

Note on methodology for assessing the size and composition of the trade in the Amazon

It is worth noting that the analysis of these data took a conservative approach **through eliminating all multi-species seizures that did not provide breakdowns of the volumes of each species in the seizure, likely resulting in an underestimation of volumes seized of each species.**

Although datasets from IBAMA and ICMBio are far from perfect, they comprise some of the most detailed data available and even a simple analysis of the trends such as those presented here reveal important insights into the illegal wildlife trade in the Amazon and the rest of Brazil, as well and suitable approaches for combating IWT in the country more effectively.



Harpooned tambaqui © Edward Parker / WWF

WILD MEAT

Capybara © Jaime Rojo / WWF-US

Wild meat is included in the IBAMA Open Data and ICMBio information and is one of the most pressing illegal trade issues in the Amazon region, according to one of the Federal Police interviewees. In Brazil, as mentioned before, subsistence hunting is allowed by law; however, the trade of bushmeat is illegal. In street markets across the Amazonian states, several tonnes of illegal wild meat are sold both nationally and across local borders, especially on the triple border of Brazil, Peru and Colombia. Species such as paca, tapirs, deer, peccaries and others are widely poached and sold.

Nonetheless, analysis of seizure data of illegal wild meat was challenging, given that most seizures were comprised of multi-species, with no detail of total weight per species. Some seizures were described in weight and others in numbers of carcasses and/or parts. Furthermore, a relevant share of seizures of wild meat are conducted by state-level law enforcement and since we were unable to get data from these institutions for the Amazon region, data for this assessment will represent a severe underestimation of this illegal trade.

Despite these shortcomings, a preliminary analysis of the available data (IBAMA and ICMBio) was conducted. Capybaras, tapirs and pacas were the most common species (Figure 23), however the weight of wild meat per species recorded from 2012–2019 (partial) was considered minor by the Federal Police interviewee and not representative of the actual amounts seized in a single month in the Amazon region. Annual seizures of wild meat do not show a clear pattern, likely due to the gaps in data.⁵³

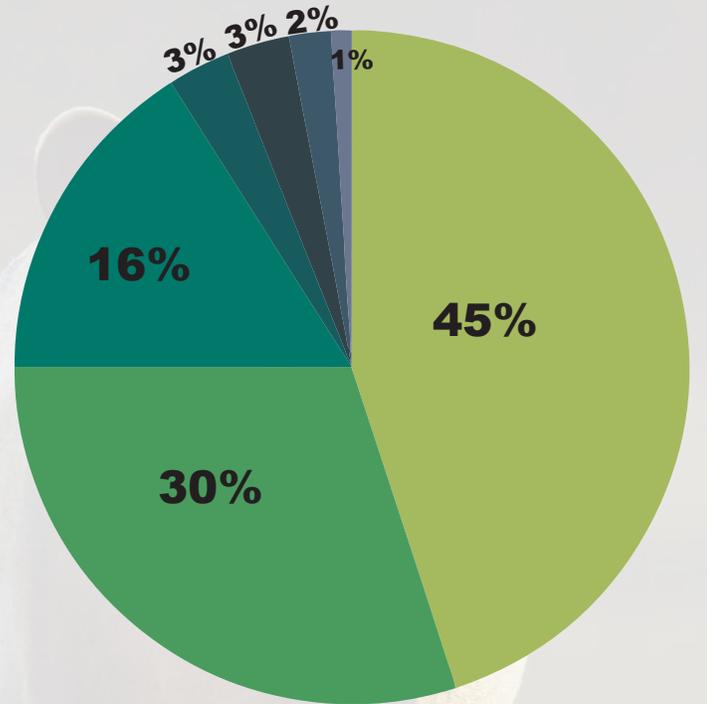


Figure 23: Percentage of species in seizures (recorded in weight – kg) of wild meat in the Amazon region

1% Collared Peccary, *Pecari tajacu*

⁵³Data recently accessed by the authors referring to seizures of wild meat conducted by the Brazilian Federal Police for the city of Tabatinga only reveal that 1,660 Kg (1,5 tons) of illegal wild meat seized in 2018.

Box IX. On the Trail Data

“On the Trail” is a quarterly bulletin by French NGO, *Association de protection de l’homme et de l’environnement* (editor Robin de Bois), that compiles news items on seizures of poached and smuggled wildlife globally, sourced from hundreds of news services and journals specialised in IWT from all over the world.

A review was carried out of 23 quarterly issues of “On the Trail” covering a seven-year period (July 2013 to Jan 2019). The review involved manually selecting news articles and producing a list of all Amazon species mentioned as seized, numbers of seized individuals per species and location of seizures. Given the relatively small number of articles per issue of the bulletin, data were analysed for the full seven-year period (not per year).

The review of “On the Trail” information followed a similar approach to the review carried out for this assessment of news articles published on non-official websites (including media articles) that featured bird seizures over a 10-year period (2009–2019 partial). Similar to the findings of the bird data sourced from websites, the review of “On the Trail” information found that information was incomplete, with most articles mentioning seizures comprised of multiple and unspecified species, and rarely specifying numbers of individuals per species. This information was not considered in the review, although huge numbers of unspecified groups of species are listed (for example, thousands of parrots Psittacidae).

Again, the “On the Trail” information does not allow for a quantitative analysis, however, it did confirm some of the findings of the IBAMA Open Data analysis, in particular the astonishing volumes of illegally sourced Arapaima *A. gigas* meat being seized (to the tune of tens of tonnes of this meat seized over the seven-year period), and to a lesser extent, meat of other food fishes.

The “On the Trail” review also provided some additional insights into the trafficking of wildlife in the Amazon, in particular the large numbers of seizures and volumes of seized wild meat, as well as of river turtles *Podocnemis* spp. and various food fishes poached for their meat (in the context of this assessment, wild meat refers to terrestrial species and aquatic species not covered by the assessment, for example caiman *Caiman* spp. and *Paleosuchus* spp. and Manatee *Trichechus inunguis*). This is an interesting finding, given that deficiencies of the wild meat data on IBAMA’s Open Data Portal only allowed for a preliminary and indicative analysis of the Amazon wild meat trade.

The most popular species in the Amazon wild meat trade are Paca *Cuniculus paca*, Tapir *Tapirus terrestris*, Peccary *Tayassu* spp., caiman (unspecified), deer (Cervidae) and primates (unspecified).



Parrots



Arapaima



River turtles



Tapir



Caiman



Primates

6.2 Amazon capture sites and major trade routes

Major routes - Overall wildlife

In the upper reaches of the Amazon river, the **triple border region of Brazil, Colombia and Peru** is identified as a major trafficking route for wildlife, where the border towns of Tabatinga (Brazil) and neighbouring Leticia (Colombia) are considered a particularly relevant hub (A. Maldonado pers. comm., 6th December 2018). Interviewees for this assessment from IBAMA and the Federal Police also consider this tri-national border as a major gateway for large numbers of live wild animals and volumes of wildlife products being transported between these three countries almost freely, adding that in Tabatinga, on the Brazilian side, there are daily open markets where large volumes (tonnes were mentioned) of illegally sourced wild meat and fish are openly sold. Another well-known market town for wildlife products in this border region is Islandia ('Iceland'), on the Peruvian side. As mentioned in an earlier section (Box VII), this border region is also a major route for trafficking of other illicit merchandise, including drugs and human trafficking. It is also the stage for a decades-long semi-legal exploitation of night monkeys *Aotus* spp. on all three sides of the border by a biomedical institution on the Colombian side (see Box X)

Interviewees for this assessment from IBAMA and the Federal Police confirmed that rivers are major wildlife trafficking routes in the Amazon, in particular the **Purus River** (river turtles and fish for consumption), the **Rio Negro River** (ornamental fish mostly for the international market, in particular in the vicinity of the town of Novo Airão near the Anavilhanas Ecological Station), and the **Madeira River**.

IBAMA and Federal Police interviewees also identified the **border region between the Brazilian Amazon state of Amapá and French Guiana** as relevant for trafficking of birds from Brazil, and there are reported incidents of seizures on boats carrying wild meat, firearms and ammunition across the border to French Guiana. The long and uncontrolled **borders between Brazil, Guyana and Suriname** are also mentioned. Suriname, Guyana and Peru are the only countries in South America that have legislation allowing the legal trade and export of wild-caught birds (Ortiz-von Halle, 2018). Suriname, Guyana and French Guiana each has their own laws for regulating wildlife harvest and trade. French Guiana does not allow any commercial wildlife exports, whereas Suriname and Guyana have established a substantial commercial wildlife trade system based on export quotas (Verheij, 2019). However, large differences in the quotas set annually in both countries and different harvest seasons for individual species allows traffickers to exploit the quota systems, stimulating the illegal cross-border trade and the laundering of illegally captured animals. For example, the 2017 quota for Blue-cheeked Amazon



Tabatinga Brazil

In the upper reaches of the Amazon river, the triple border region of Brazil, Colombia and Peru is identified as a major trafficking route for wildlife, where the border towns of Tabatinga (Brazil) and neighbouring Leticia (Colombia) are considered a particularly relevant hub.

Amazona dufresniana was 70 individuals in Suriname, whereas in Guyana the quota was 520 (ibid). This species is currently listed as Near Threatened and decreasing by the IUCN Red List⁵⁴.

On the **border between Suriname and Brazil**, there is historical evidence that Surinamese wildlife traders have been involved in laundering Brazilian reptiles such as Emerald Tree Boas *Corallus caninus* (CITES Appendix II) by smuggling them from Brazil and then exporting them as Suriname specimens using fraudulently obtained CITES documentation. Illegal trade in this region is intense due to a lack of surveillance on the Brazilian side (Verheij, 2019). Another example of cross-boundary illegal trade between Suriname and Brazil involves the colourful Dyeing Poison Frog *Dendrobates tinctorius*. Despite the fact that Brazil prohibits the export of all wild-sourced fauna without permits, five Dyeing Poison Frog “morphs”—only known from Brazil—have been in the terrarium trade for years. In 2014 it became clear that specimens from Brazilian populations were being smuggled out of Brazil to the EU where they sold for high prices and were easily laundered as “legal” thanks to captive breeding in Europe. Experts pointed out that Surinamese wildlife traders probably obtained these specimens from Indigenous people living in the south who are in frequent contact with neighbouring villages in Brazil.

Although no evidence has been found of illegal trade of parrots between Brazil, Guyana and Suriname, the sheer numbers of **legal exports of parrots from Guyana** of some species would merit a more detailed investigation. Ortiz-van Halle (2018) reports that between 2000 and 2016, Guyana exported 145,000 birds of 24 species (all CITES Appendix II listed), the majority of which (40% of total exports) belonged to a single species, the Orange-winged Amazon *Amazona amazonica*, which is widely distributed in the Brazilian Amazon and Cerrado. In Suriname, from 2000 to 2013, almost 75,000 parrots of this species were exported (20% of total Suriname exports).

Another vulnerable **border region is that between Bolivia and Brazil**. Despite an export ban on all wildlife in 1986 and subsequent decrees (which introduced a general prohibition for capture and trade of native species), Bolivia’s illegal export of its protected wildlife species has continued. Wildlife smuggling occurs across all the borders that Bolivia shares with Argentina, Brazil, Chile, Paraguay and Peru. Bolivia is both a source and a destination for wildlife specimens from neighbouring countries and is also believed to be a transit country. For example, several researchers believe that Bolivia functions as a bridge for illegal wildlife trade between Brazil and Peru (Verheij, 2019). This cross-border trafficking mainly concerns live specimens destined for the pet trade and parts and products for consumption, traditional use or religious festivals. Bolivia has also recently been subject to intense international attention due to several cases of jaguar fangs smuggled to Asia (see Box XII).



Emerald Tree Boa

On the border between Suriname and Brazil, there is historical evidence that Surinamese wildlife traders have been involved in laundering Brazilian reptiles by smuggling them from Brazil and then exporting them as Suriname specimens.

⁵⁴<https://www.iucnredlist.org/species/22686282/93105789>

Two known routes of wildlife trafficking in the region, which were confirmed by IBAMA and Federal Police agents interviewed for this assessment, are **inverse trafficking routes for passerine songbirds from Venezuela⁵⁵ and Peru⁵⁶ into Brazil**. The most prevalent birds in this type of trade are subspecies of the Saffron Finch *Sicalis flaveola*—*S. flaveola flaveola* (with occurs in Colombia, Venezuela, Guyana, Suriname, French Guiana and Trinidad) and *S. flaveola valida* (which occurs in Peru and Ecuador). *S. flaveola valida* and *S. flaveola flaveola* are bigger in size than the Brazilian subspecies and trafficked to Brazil⁵⁷ to be hybridised with local subspecies, so that the bigger and more aggressive offspring can be used in illegal Saffron Finch fighting competitions (similar to dog and cockerel fighting).

⁵⁵<https://noticias.ambientebrasil.com.br/clipping/2011/06/29/71720-passaros-trazidos-da-venezuela-para-o-am-nao-serao-sacrificados.html>

⁵⁶<https://www.campograndenews.com.br/meio-ambiente/pma-prende-trafficante-com-1250-canarios-peruanos-a-4-apreensao-em-1-ano>

⁵⁷<https://www.oeco.org.br/noticias/25003-canarios-peruanos-apreendidos-no-ms/>, <https://noticias.ambientebrasil.com.br/clipping/2011/06/29/71720-passaros-trazidos-da-venezuela-para-o-am-nao-serao-sacrificados.html>



Image: Seizure of 1,005 Peruvian Saffron Finches in Mato Grosso do Sul in 2011 (Image – PMAmb – MS)

Bird fights, and in particular Saffron Finch fights, are common all over Brazil, and involve large numbers of people, moving large sums of money. Information gathering from online media outlets conducted for this assessment found dozens of news articles on seizures of birds involved in fights (“*rinha*” in Portuguese).

Numerous sources (Verheij, 2019; local news articles) suggest there may be a strong **trade in passerine songbirds along the borders of Brazil, French Guiana, Suriname and Guyana, as well as Venezuela**. Species frequently found in seizures in these regions include the Chestnut-bellied Seed-Finch *Sporophila angolensis* and the Broad-billed Seed-Finch *Sporophila maximiliani*. Despite regulations and the existence of a legal trade of both *S. angolensis* and *S. maximiliani*, seizures of birds of these species are common in Brazil.

In the Amazon region alone, a total of 1,171 illegal *S. angolensis* were seized between 2012 and September 2019 in seizures of more than 10 specimens, which could have been multi-species or not (a lot more were in seizures of less than 10 specimens). Interestingly, as seen for other species, there is a spike of seizures in 2015 and an apparent downward trend to 2019 (Figure 24). Although there is no information on the intended destination of the seized *S. angolensis* (exported or domestic market), bird-singing contests with this species are now common not only in Latin American countries⁵⁸, but are growing in importance in the US⁵⁹.

⁵⁸<https://news.mongabay.com/2015/11/latin-american-illegal-wildlife-trade-exploding-in-scope-and-scale>

⁵⁹<https://www.nytimes.com/2015/08/02/nyregion/tiny-birds-big-drama-inside-the-world-of-the-birdmen-of-queens.html>

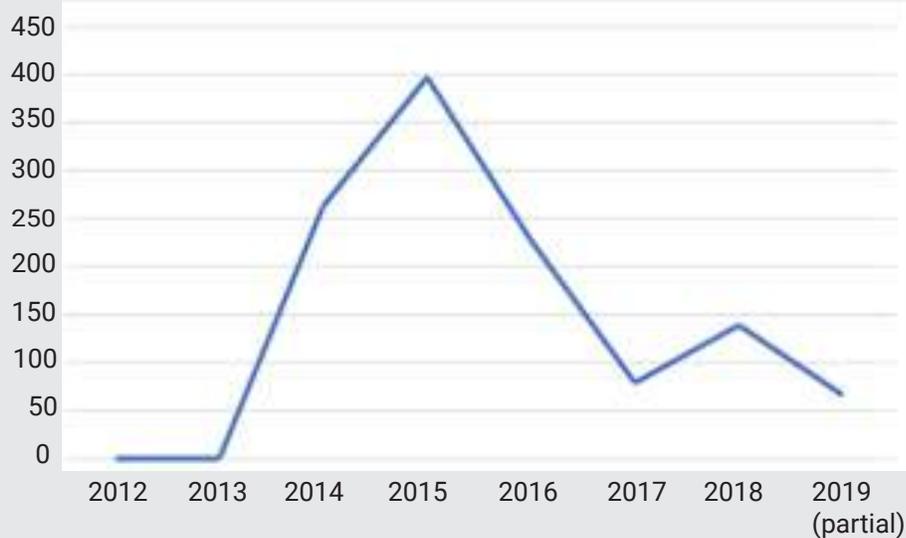


Figure 24: Number of specimens of *Sporophila angolensis* seized in the Amazon region (states of Acre, Amazonas, Amapá, Mato Grosso, Pará, Rondônia, Roraima and Tocantins) from 2012–September 2019 (Source: IBAMA Open Data portal and ICMBio seizure data) recorded in seizures of 10 individuals or more



Chestnut-bellied Seed-Finch

On the other hand, seizures of *S. maximiliani* are not so common any more, probably due to the scarcity of the species in nature (Cabral. R, presentation delivered at a workshop on wildlife trafficking legislation organised by Freeland Brasil and the Public Prosecutor's Office of São Paulo state, May 2019). At the time of the analysis, 10 specimens had been seized in 2017 (looking only at seizures of 10 or more individuals), but in 2019 some 26 specimens had been seized by September, a considerable increase in comparison to previous years.

Similar to other *Sporophila* spp. in the northeast and southeast of Brazil, the famous **Twatwa or Large-billed Seed-finch *S. crassirostris* is a popular songbird in Suriname and other neighbouring countries where it is used in singing contests** (Verheij, 2019). Twatwas have been completely extirpated in Suriname due to decades-long systematic harvesting from the wild, fuelling a vibrant illegal trade of the species, with birds being smuggled from Venezuela via Guyana, and Brazil.

Airports of state capitals in the Amazon region were mentioned by IBAMA and Federal Police interviewees as important exit gateways for Amazon wildlife trafficking, in particular **Manaus airport**, where there have been several seizures of Psittacidae eggs (parrots and macaws) destined for the European market (including Portugal) via large international airports in Rio de Janeiro and São Paulo. Other relevant international trafficking airports in Brazil include Belem, Fortaleza and Recife.

Major routes – River turtles

Interviewees for this assessment from IBAMA and the Federal Police reported that smuggling of river turtles and their eggs is probably the largest wildlife trade issue in the Brazilian Amazon, in volume and numbers, and is relevant for both the domestic market and **regional markets in neighbouring Amazon countries (including Colombia, Peru, and Venezuela)**. They also reported trafficking of Amazon river turtles to Asia for traditional medicine, the pet trade, decorative use (shells) and for consumption as food.

The three main species of *Podocnemis* spp. occur in practically every large tributary of the Amazon (with *P. sextuberculata* having a more limited distribution in relation to the other two species) and harvesting of river turtles and their eggs is intense and widespread in the Brazilian



Amazon. A recent study (Pantoja-Lima *et al.*, 2014) provides an indication of the volumes involved and the commercialisation chain for river turtles in this part of the Amazon. With a focus on the town of Tapauá on the **Purus River** (population 20,000 inhabitants, 450 km from Manaus), the study was based on interviews with local residents over a two-year period. It revealed that 100% of respondents reported consuming at least three species of *Podocnemis* spp. and estimated an annual consumption in Tapauá of around 34 tonnes of turtles per year. The same study identified at least five components related to the chain of commercialisation of turtles on the Purus river: (1) Indigenous Apurinã and (2) residents of bordering rural villages (communities); (3) local smugglers that buy and sell turtles to the community in exchange for manufactured goods; (4) regional smugglers that buy in local towns (Tapauá, Lábrea, and Beruri) to sell in large cities including Manaus and Manacapuru; and (5) professional fishermen. In the state of Amazonas, people consume turtles weekly, as seen in Novo Airão, while in Manaus consumption is less frequent (Rebêlo and Pezzuti, 1984).



Big-headed Amazon River Turtle © Staffan Widstrand / WWF

Box X: The use of night monkeys (*Aotus spp.*) in biomedical research in the Amazon: legal or illegal?

Night monkeys (or owl monkeys) *Aotus* spp. in the Brazil/Colombia/Peru triple border region are supplied as laboratory animals to a Colombian biomedical research institute (FIDIC) for the development of a synthetic vaccine against malaria. Despite the disputed effectiveness of the early trials, the regional Amazon authority in Colombia (Corpoamazonia) has continued to issue annual permits for the capture of 800 *A. vociferans* night monkeys (the Colombian species of *Aotus* spp.) per year. The institute pays indigenous peoples in Peru and Brazil to capture and supply monkeys from *A. vociferans* plus an additional species *A. nancymae* that occurs in Brazil and Peru (for which no permit has been issued). Following several months of confinement at FIDIC facilities for the vaccine trials and other invasive procedures (including removal of the animal's spleen to reduce their immunity levels), the night monkeys are then released back into the wild, mostly in release areas in Colombia and Peru. This practice has led to the local extirpation of the Colombian species *A. vociferans* from the Colombian bank of the Amazon river, the introduction of a new species *A. nancymae* illegally sourced from Peru and Brazil into Colombian territory, and the decimation of *A. nancymae* on the Peruvian side of the river (Maldonado and Lafon, 2017).



Night monkey © Angelica Martinez

For almost 40 years, more than 50,000 night monkeys have been removed from the wild in this trinational border region for FIDIC's biomedical research (figures reported by Corpoamazonia are approximately 13,000 animals), and capture methods have entailed the felling of approximately 65,000 native adult trees per year. Following years of work to highlight the environmental issues associated with the trade in night monkeys in this region, local Colombian civil society organisation Entropika has successfully led a series of legal interventions that have resulted in important policy improvements; an order requiring Corpoamazonia and the Colombian CITES authorities to fulfil their legal responsibilities; public exposure of corruption; the first ruling in Colombia recognising animals as "sentient beings"; the upgrading of *A. nancymae* from "Least Concern" to "Vulnerable" on the IUCN Red List (Maldonado et al, 2017) and in 2019, disciplinary and penal investigations against the Ministry of Environment and Corpoamazonia.

6.3 Placement of animals seized from trade in the Amazon

According to IBAMA interviewees, CETAS records (e.g. Destro *et al.*, 2012) and the data spreadsheets analysed for this assessment (e-SIC ICMBio and IBAMA Open Data), live animals seized from the trade in rural areas in the Amazon region are mostly released back into the wild. Live animals seized in towns and cities are handed over to CETAS facilities if available. Illegally sourced fish seized from markets and fishing boats (i.e. fished during closed seasons, below legal size, etc) are donated to social care and charitable institutions or destroyed. Wild meat is usually destroyed. Live turtles are released immediately after seizure.

As discussed in Chapter 5, the rehabilitation and placement of the thousands of wild animals seized from the illegal trade across the country poses a huge challenge for government authorities and civil society organisations who collaborate with them. Considering the average figure of 30,000 animals seized annually by a single state-level police force (the CPAmb-SP) in São Paulo state alone, it is easy to imagine that the total number of wild animals seized across Brazil's 26 states and the Federal District can easily reach the hundreds of thousands. A large number of these animals will perish soon after being seized by the authorities, given the conditions they suffer during capture, transport and sale. However, a fair proportion of these animals are likely to be fit enough to be reintroduced into the wild.

In a country with continental dimensions, such as Brazil, returning wild animals seized from the trade back into the wild poses a logistical and cost challenge. There is also a conservation dilemma in terms of the challenges involved in identifying suitable habitats for release (repatriation, reintegration or reintroduction) of wild animals, whilst avoiding the risks of upsetting the natural population dynamics of areas selected as release sites, exceeding the carrying capacity of selected sites, causing hybridisation with local subspecies, and other problems resulting from releasing animals of wild species back into nature.

One potential aid is the recent development and application of stable isotopes analysis as a tool in counter trafficking. This tool was developed to support investigations into illegal wildlife trafficking cases, for example differentiating between wild-caught and captive-bred wild animals. However stable isotopes analysis can also be used to determine potential sites for release of seized wild animals produced for this assessment by experts at the National Forensics Institute (INC) and the University of Brasilia.



Box XI: The application of stable isotopes analyses in counter wildlife trafficking efforts: a case study

(Fabio José Viana Costa - INC/PF, Rodrigo Ribeiro Mayrink - INC/PF and Gabriela Bielefeld Nardoto - UnB)

The work of Brazil's Federal Police (Polícia Federal or PF) in combating wildlife trafficking (in particular the PF's National Forensics Institute—Portuguese acronym INC) focuses primarily on transnational trafficking and cases involving money laundering, tax evasion and corruption. A landmark of the Federal Police's IWT work was the 2009 "Operation Oxóssi" (see Box V), a large-scale investigation into poaching and IWT in Rio de Janeiro state with links to eight other Brazilian states and five other countries, which resulted in the dismantling of an international wildlife trafficking criminal organisation and the arrest of 103 people in Brazil, Portugal, Spain and the Czech Republic.

Large numbers of wild animals are seized every year through law enforcement inspections of IWT activities and investigations into fraudulent use of the official control systems that regulate legal wildlife captive breeding activities, such as forgery of the official metallic rings used to identify individual birds. Over the last 13 years, the INC and its regional forensic laboratories have produced over 1,800 wildlife-related forensic reports, and over 59,000 forensic analyses of bird identification rings seized in fraud control investigations.

The analyses of stable isotopes provide a useful tool for investigating wildlife trafficking cases, both to differentiate captive from wild-caught animals (Alexander *et al.*, 2018) and for inferring the geographic origin of seized animals or their parts (Ziegler *et al.*, 2016; Cerling *et al.*, 2018).

In 2015, Brazil's Federal Police started research into the application of stable isotopes analysis in domestic and international counter wildlife trafficking investigations, in partnership with the University of Brasilia. So far, this project has produced isoscapes for inference of the origin of birds and mammals in the Cerrado (Brazilian savannah) and Pantanal (Brazilian wetlands) biomes, as well as for differentiating between captive and wild-caught animals.



Grosbeak

Over the last 13 years, forensic laboratories have produced over 1,800 wildlife-related forensic reports, and over 59,000 forensic analyses of bird identification rings seized in fraud control investigations.

The project is currently being expanded through the development of new partnerships with INPE (the National Institute for Amazon Research) and IBAMA, including CETAS wildlife reception centres (that receive the bulk of seized wild animals), with the aim of developing isoscapes for other Brazilian biomes (Brazilian Amazon, Atlantic Forest and Caatinga). The project is in the process of developing a specific isoscape for wild Amazon river turtles, and future plans include integrating Brazilian isoscapes with data from other Latin-American countries, in particular with other Amazon countries. Alongside scientific research, the isotope technique is starting to be applied in routine INC analyses as part of the investigations into wild bird trafficking and the illegal trade in Amazon river turtles for human consumption.

The use of stable isotopes for assigning origin or source of criminal traces has gained increasing prominence in recent years, both internationally and in Brazil. Stable isotopes are variants of a chemical element determined by the geographic variation of each element. The isotope proportions of the chemical element vary between different environmental compartments. The analysis of these proportions has great potential for the attribution of origin or trace evidence and can contribute to the elucidation of many types of crime.

When animals eat, they ingest proteins, carbohydrates and lipids, which contain stable isotopes of carbon, nitrogen, oxygen and hydrogen in different proportions (the isotopic ratio), which is directly related to the place where these elements were incorporated during the production of that food resource. In addition to food, the proportion of stable isotopes of hydrogen and oxygen in the water ingested by an animal will be incorporated into its tissue (fur, claws, muscles). Analyses of the proportions of stable isotopes obtained from the water and food ingested by an animal and incorporated into their tissues provides a valuable tool for forensic investigations, given that these proportions represent a record of information about the geographic origin of that animal.

This technique has been used, for example, to differentiate between potential geographic origins of birds seized from trade, and to assign the origin of elephant ivory seized in Africa. It can also be used to differentiate wild-caught from captive-bred animals, as they have different diets. For example, the isotopic ratio of carbon in plants reflects the type of photosynthesis that a plant has - there are C3 plants, which are, in general, legumes, trees and shrubs, and C4 plants, which are, in general, grasses, sugarcane and corn. The isotopic ratio in C3 plants is higher than in C4 plants, which allows for a relatively easy differentiation between C3 and C4 plants consumed as food sources. The isotopic ratio of nitrogen reflects several soil biogeochemical processes. The spatial and temporal distribution patterns of isotopic values of C, N, H and O can be mapped and represented in models called isoscapes (isotopes + landscapes), which function as a reference for inferring the most likely region of origin of an animal.

The potential of this tool for origin assignment of trafficked wild animals in Brazil depends on the refinement of currently available environmental isoscapes for the country, which can be accomplished by obtaining more sample points, both spatially and temporally, across the national territory. Current global models are not able to show regional variations in Brazil. In order to enhance the application of the tool in Brazil, it is essential to invest in studies on the spatial variation of isotopic ratios in plant and animal tissues according to regional environmental conditions. Key species could be prioritised, according to how often they appear in IWT seizures. Environmental variables can be used in association with existing isotopic data, building specific regional isoscapes. With the availability of these data, the methodology for isotopic origin assignment can be widely explored for the development of spatial models that can be applied in practice in the Brazilian context.

6.4 Trade in CITES-listed Amazon species

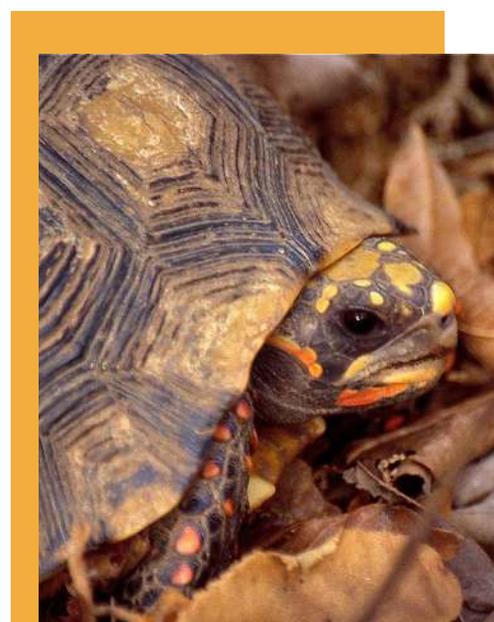
Over 12,000 species native to the eight Amazon countries (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, Venezuela)⁶⁰ are listed under CITES, 99% included in Appendix II. A recent report (Sinovas *et al.*, 2017) produced by the German government's (GIZ) Amazon Regional Programme⁶¹ presents a comprehensive overview of international trade in CITES-listed wildlife in the eight Amazon countries, which co-operate at the regional level as members of the Amazon Cooperation Treaty Organization (ACTO). The analysis provides a baseline of information on trade levels and trends in the eight countries, based on data from their CITES annual reports for the ten-year period 2005–2014, in order to inform trade management in the region. Whilst the report covers the trade in many Amazonian species i.e. species occurring in the Amazon tropical moist forest areas within the eight countries⁶², it also includes all CITES-listed species occurring in other major habitat types within these countries, such as the Andean paramo, Pantanal flooded savannas, Chiquitano dry forests, and Llanos savannas, amongst others.

According to the GIZ report, Brazil's main export during the 2005–2014 period was live plants, of which the majority were artificially propagated orchids, many non-native species. These were mainly destined for the Netherlands, Germany and the United States. The principal orchid species in trade was *Ludisia discolor* (native to China and Southeast Asia), accounting for almost half the live plant trade. Exports of native live Red-footed Tortoises *Chelonoidis carbonaria* were allegedly predominantly captive-bred and exported to mainland China, El Salvador and Taiwan.

The estimated average annual value of Brazil's CITES exports between 2005 and 2014 was US\$13 million. The products with the highest total estimated value were live orchids (US\$1.8 million per year), particularly the species *Ludisia discolor* (US\$0.9 million per year), and timber of Big Leaf Mahogany *Swietenia macrophylla* (US\$1.6 million per year).

There has been a significant increase in the export of Arapaima *Arapaima gigas*, the world's second largest freshwater fish, native to the Amazon basin. This species was assessed in the IUCN Red List as Data Deficient in 1996 and has not been assessed since (World Conservation Monitoring Centre, 1996). Arapaima populations are estimated to be declining through over-fishing, as well as through habitat degradation.

The majority of *A. gigas* exports from the region (2005–2014) consisted of meat and live individuals for the ornamental fish market, with a lower trade in leather products. The total financial value of Arapaima exports was estimated to be US\$1 million per year (54% Peru, 23% Brazil). Arapaima meat is considered



Red-footed Tortoise

Over 12,000 species native to the eight Amazon countries are listed under CITES, 99% included in Appendix II.

⁶⁰This study does not take account of species native to French Guiana, an overseas territory of France which is not part of OTCA. The Amazon biome is shared by the eight countries mentioned and the overseas territory of France (French Guiana).

⁶¹The Amazon Regional Programme is a technical co-operation project entitled "Strengthening of the Regional organisation ACTO" implemented by the German aid agency GIZ on behalf of the Governments of Germany (BMZ) and Netherlands (DGIS), in response to the need to strengthen the capacities of the ACTO to meet the demand of the Amazon countries for regional actions that foster sustainable development in the Amazon.

⁶²Amazon biome as defined in Olson, D.M. and Dinerstein, E. (1998). The Global 200: A representation approach to conserving the Earth's most biologically valuable ecoregions. Conservation Biology 12: 502–515.

to be for the gourmet market (FAO, 2012–2019). In total 416,000 kg of *A. gigas* meat were exported from the region during 2005–2014, the majority after 2010 and, according to the report, as captive bred. Brazil accounted for 38% of the total exports, with Peru being the main exporter (59%). Brazil first exported supposedly captive bred *A. gigas* meat in 2013 and the volume increased by 65% between 2013 and 2014. The main market was the US (92% of exports).

An annual average of 20,000 live captive-bred *A. gigas* were exported almost exclusively by Peru, with an overall increasing trend during 2005–2014. Brazil does not export live juveniles due to minimum size fishing restrictions and because the domestic market is able to absorb more than what is produced through aquaculture. Approximately 90% of live *A. gigas* were exported to Asia for their ornamental appeal, with Hong Kong Special Administrative Region (SAR) alone accounting for almost three quarters of exports from Peru. A more recent trend was the export of large-sized arapaima leather products (6,582), of which 5,177 were wild-sourced (reported by Brazil). Scales are used for arts and crafts.

The analysis in the Sinovas 2017 report suggested that exports of mammals, birds and timber were primarily wild-sourced, while exports of reptile skins, live fish and orchids were primarily captive-bred or artificially propagated.

The main trends presented in the report are that exports of mammal skins, live orchids and timber declined during the study period 2005–2014, whereas exports of live reptiles, amphibians and fish increased over the same ten-year period. These increases were driven largely by substantial growth in the export of reportedly ranched Yellow-spotted Amazon River Turtle *Podocnemis unifilis* (in the case of live reptiles), captive-bred and ranched poison dart frogs Dendrobatidae (in the case of amphibians) and, for fish, captive-bred *Arapaima gigas*.

Levels of exports remained largely stable for birds with the exception of a decline between 2005 and 2006, possibly caused by the European Union bird import ban that entered into force in 2006. Exports of reptile skins also remained relatively constant, apart from a dip in 2008–2009, potentially due to reduced demand for luxury fashion products during the 2008–2009 global financial crisis.

An interesting question that concerns IWT in South America which was raised in the 2016 World Wildlife Crime Report (UNODC) is the fact that given that CITES is the only current framework to regulate the international trade of wild species, those species which are locally protected, harvested illegally, but not listed in CITES, are easily traded internationally after crossing national borders. And this is the case for several heavily trafficked Brazilian species. It is important that a discussion on how protection of wild species can go above and beyond CITES to encompass those locally protected, illegal by origin but non-CITES listed species.



There has been a significant increase in the export of Arapaima, the world's second largest freshwater fish, native to the Amazon basin. This species was assessed in the IUCN Red List as Data Deficient in 1996 and has not been assessed since.



Illegal jaguar parts © Diego Pérez / WWF

6.5 Trafficking of jaguar⁶³ parts in the Amazon region

Up until recently, direct jaguar killings by poachers were motivated mainly by conflict with humans over jaguar attacks on livestock, and by fear of jaguar attacks on people in remote areas. A new threat to jaguars has emerged in recent years—the deliberate killing of jaguars for their parts (fangs, skulls, bones, skins, paws, meat) seemingly destined for the markets in China and possibly Southeast Asia.

Poaching jaguars for their parts is on the increase in some parts of the Amazon region, currently the most important stronghold for the species across its range. However, it is also in the Amazon countries that spikes in trafficking of jaguar parts have started to appear, in particular in Brazil, Bolivia, Peru and the Guianas. Box XII provides an overview of the illegal trade in jaguar parts.

⁶³The jaguar *Panthera onca* is listed as Near Threatened by IUCN and Vulnerable in the ICMBio 2018 Brazilian Red List of Endangered Fauna (which uses IUCN methodology)

Box XII: Trafficking body parts: a new threat to the Jaguar

(Diane Walkington)

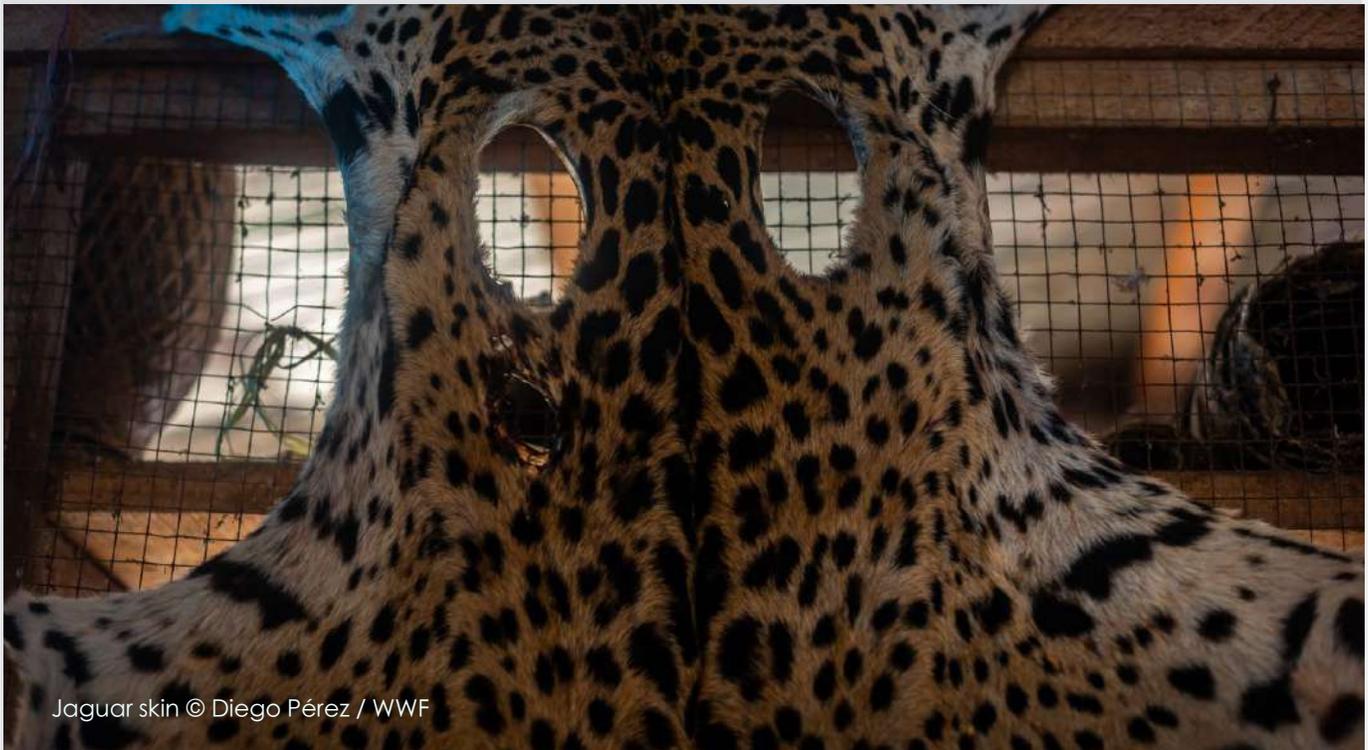
The jaguar *Panthera onca* ranges from Mexico to Argentina across 18 countries. The estimated wild population size is approximately 173,000, of which over half—approximately 87,000—are estimated to be in Brazil (Jedrzejewski *et al.*, 2018). The jaguar has been almost eliminated from much of the drier northern parts of its historic range i.e. Arizona and New Mexico in the United States, northern Sonora State in Mexico, north-eastern and south-eastern Brazil, as well as the pampas scrub grasslands of Argentina. It has been extirpated from Uruguay and El Salvador (Quigley *et al.*, 2017). The most recent estimates are that the jaguar's range has decreased by more than 50% in the last century (*ibid*). The Amazon basin—of which more than half is in Brazil—provides the single largest contiguous block of remaining jaguar habitat and 57% of the species' total nine million km² range area. With the exception of the jaguar subpopulations in the Amazon, the Chaco, and the Pantanal, all other subpopulations are ranked within the IUCN Red List as Endangered or Critically Endangered due to their small size, isolation, low level of protection and growing human presence (De La Torre *et al.*, 2017). Globally, jaguars are listed by the IUCN as “Near Threatened”, with a decreasing population trend (Quigley *et al.*, 2017). Key threats include habitat loss and degradation, loss of natural prey, and illegal killing for trophies, trafficking and in retaliation for livestock depredation (*ibid*).

The jaguar has been included in CITES Appendix I since 1975. The previously rampant commercial killing of jaguars for their pelts for European and USA markets then declined significantly, with CITES controls and anti-fur campaigns progressively shutting down international markets (Nowell and Jackson, 1996). The Jaguar is also protected under national law within all 18 range countries, although that legislation has gaps, as well as ineffective implementation and enforcement in some countries. In addition to the need to tighten and enforce legislation, there is an urgent need for more data to be gathered on jaguar killings and illegal trade, as the evidence currently available represents only a small part of the picture. However, that evidence already shows that in recent years national and international illegal trade in jaguar parts is likely to again be rising and poses a significant additional threat to jaguar conservation.

The first investigations into jaguar trafficking within Brazil are now underway, with preliminary findings that at least 30 seizures of jaguar parts, mostly pelts, took place in Brazil over the last five years (Thais Morcatty, quoted in Berton, 2018). This likely reflects a very small part of what is happening on the ground. A single raid



Jaguar © Staffan Widstrand / WWF



Jaguar skin © Diego Pérez / WWF

of a poacher's home in Curianópolis in the Amazon state of Pará in August 2016 by IBAMA found body parts of 19 jaguars in a fridge, including whole heads, skulls, pelts and paws (IBAMA, 2016). The raid had been motivated by suspicion of possession of arms. Evidence has also emerged of both national and of international trade from São Paulo and Rio de Janeiro (Fraser, 2018). A recent news piece (O Eco, 2019) reported the prosecution of a group of poachers whose wildlife crime operations in the state of Acre over the last 30 years are estimated to have resulted in the killing of over 1,000 jaguars. Evidence gathered through mobile phone monitoring during the investigation led by the state-level Public Prosecutor's Office and the Federal Police, confirmed the killings over a three-month period of eight jaguars by the group, who were arrested for illegal hunting and possession of firearms.

In Suriname there is evidence of Chinese nationals buying and using jaguar parts as early as 2003 and continuing to do so. There is also evidence between 2007 and January 2018 of illegal trafficking of jaguar teeth from Suriname into China (Verheij, 2019). Skins from jaguars poached in southern Suriname can be traded for a hunting rifle with Brazilians along the porous border between the two countries or can be sold for BRL500 (\pm US\$100) each (Kerman, 2010).

In Bolivia, seizure information shows there has been a surge since 2012 in the trafficking of jaguar parts, which appears to be driven almost entirely by Chinese nationals—including both long term residents and newly arrived migrant workers—living in Bolivia (Verheij, 2019). One recent example was the arrest in 2018 of two Chinese citizens in Santa Cruz with Bolivian identity cards. They were in possession of 185 jaguar fangs, three jaguar skins, parts of other species, a 22-calibre pistol, and a large sum of local and foreign currency (Berton, 2018). Seizure data also show China to be the main destination from Bolivia for international trade in jaguar parts (Nunez and Aliaga, 2017; Verheij, 2019). A total of 119 teeth sent from Bolivia were confiscated by customs authorities in Beijing (Berton, 2018).

In Peru's city of Iquitos, located on the Amazon River upstream from the trinational border towns of Leticia (Colombia) and Tabatinga (Brazil), a group of journalists toured some of the markets in 2018, and in just one week confirmed the sale of 44 jaguar teeth, four skulls, five skins and 70 claws, which equates to the killing of at least 24 jaguars (ibid). Between August 2016 and August 2019, an investigation took place into jaguar trafficking in three Peruvian cities that are tourism destinations, Lima, Iquitos and Pucallpa. Sales of items incorporating jaguar body parts to tourists were found to be prevalent in the Amazonian cities

of both Iquitos and Pucallpa, including skins, teeth and skulls (Braczkowski *et al.*, 2019).

International trafficking routes for jaguar parts are currently unclear. For example, it is not known whether seizures in countries such as Bolivia are all sourced from within Bolivia, or whether parts are also smuggled from neighbouring countries such as Brazil, with Bolivia serving as a transit point (Verheij, 2019). There is an equal lack of data on trafficking routes between Brazil and other neighbouring countries such as Peru. These are critical data gaps that need to be filled.

A recent report by the Wildlife Conservation Society (Reuter *et al.*, 2018), which focuses on Mesoamerica, highlights that jaguar trafficking, both national and international, may be increasing in Belize, Honduras, Costa Rica and Panama. There is demand for jaguar paws, meat, teeth and other products, especially in local markets where canines are still considered interesting jewellery. In addition, there is evidence that jaguars are increasingly considered as a replacement for tiger bone for traditional Asian medicine (*ibid*).

In 2018 a significant commitment was made to save the jaguar, with the governments of all jaguar range states and leading international conservation organisations jointly launching a “Jaguar 2030 Conservation Roadmap for the Americas”. Jaguar National Action Plans have been drawn up or are nearing completion by approximately half of the jaguar range countries i.e. Argentina, Bolivia, Brazil, Colombia, Ecuador, Honduras, Mexico, Panama and Paraguay. However, not all of these Plans are being implemented.

During the 18th CITES Conference of the Parties in August 2019, significant commitment was shown by governments to tackle the illegal trade in jaguars and jaguar parts more robustly. An official statement was issued that “The increasing evidence from recent years pointing towards a rise in the illegal trade of jaguar parts throughout Latin America, which could lead to the species’ population loss and local extinctions, has led to an urgent need to collect more data and assess the challenges posed by illegal trafficking”. This lack of data now needs to be addressed.

In October 2019, the First High Level Conference on Illegal Wildlife Trade in the Americas was held in Lima, which enabled sharing of information on illegal species trafficking dynamics in the region. It resulted in the issuance of the Lima Declaration, which declares the jaguar as a symbol of the fight against illegal wildlife trade in the Americas.



Jaguar © Brent Stirton / Getty Images / WWF



6.6 Wildlife tourism in the Amazon

Most tourists who travel to the Amazon region expect to see an abundance of wildlife in the places they visit and are often disappointed to find that sightings of wild birds, dolphins and mammals are rare and hard to come by. Up until recently, some large hotels in Manaus (the capital of Amazonas state, and the main gateway into the Brazilian Amazon for tourism) included collections of animals and mini-zoos on their grounds, but upkeep is expensive and eventually they close down. The Amazon National Research Institute (INPA) allows public visitation to some of its facilities that hold Manatees *Trichechus inunguis* and river dolphins (*Inia geoffrensis* and *Sotalia* spp.), although this practice is often criticised by conservationists and even by two IBAMA interviewees.

The number of “eco-lodges” in the Brazilian Amazon has grown exponentially, in particular in locations with relatively easy access from Manaus. Although a few lodges play by the rules and avoid keeping or deliberately attracting wild animals to their grounds for the entertainment of tourists, many so-called “eco-lodges” offer “wildlife experiences”, including swimming with river dolphins and visits to communities who raise tame wild animals for selfie opportunities.

An IBAMA officer interviewed for this assessment was very critical of INPA, the National Research Institute of the Amazon, based in Manaus, that encourages tourist visitation to the research tanks at its headquarters which hold Pink River Dolphins *Inia geoffrensis*. The view shared by the officer is that this stimulates the so-called “dolphin tourism” (“*turismo do boto*”) which takes place in several locations close to Manaus, where people pay a fee to swim with dolphins, feed dolphins, take “selfies” with dolphins, etc. These activities are detrimental to dolphins and to other wild animals kept in captivity on site, as well as relying on child labour and other illegal activities.

One IBAMA interviewee pointed out four main problems related to wildlife tourism in the Amazon:

1. Child labour is common (as mentioned above).
2. Animals are kept in inadequate conditions of captivity, and many species have low life expectancy due to improper diets (e.g. sloths, who in the wild have a very specific diet) and high turn-over rates following death.
3. Animals are often offered for sale to tourists, further increasing turnover rates, and causing numerous problems for the animals during transport and homing.
4. Wild animals kept in captivity pose a potential threat to health and safety of the people who handle them, through lack of awareness of wild animal handling and management, as well as the potential health and safety issues, through the transmission of diseases.

6.7 Transboundary and International Collaboration in the Amazon region

It has become clear to stakeholders that international wildlife trafficking in the Amazon region and elsewhere in Brazil is highly organised. Trafficking is taking place across the borders of South American countries, eroding regional biodiversity and affecting governance. The relevance of a transregional multiagency approach to IWT in the region has been discussed for several years, with early workshops on the issue dating back to 2001. However, it was not until 2014 that an important step was taken, when members of the Prosecutor's Offices of eight south American countries—Brazil, Argentina, Paraguay, Peru, Colombia, Venezuela, Chile and Ecuador—gathered in Brazil and launched the São Paulo Declaration⁶⁴, which was later reinforced by the Buenos Aires Declaration.

These declarations affirmed the recognition of the institutions present that wildlife trafficking is a serious crime and a threat to biodiversity in South America, that can be addressed through a regional approach. The São Paulo Declaration was the official launch of SudWEN, the South America Wildlife Enforcement Network. SudWEN did not become operational until 2019, when countries present at the 2019 First High Level Conference on Combating Wildlife Trafficking launched the Lima Declaration⁶⁵ committed to elevating wildlife trafficking to the status of “serious crime” and to collaborating regionally for combating wildlife trafficking. In order to accomplish this commitment, country governments, with the support of the US Department of State and the UNODC, also committed to strengthening local Wildlife Enforcement Networks, among which there is SudWEN (besides the Central American WEN, the Caribbean WEN and the North American Wildlife Enforcement Group). Peru agreed to host the first meeting to operationalise SudWEN, which will take place in 2020.

In addition to efforts to promote transboundary and international collaboration at the level of Public Prosecutor's Offices and governments, some initiatives have started to emerge at a more local level. The most recent example of collaboration amongst countries in transboundary areas in the Amazon is a tri-national workshop held in Leticia, Colombia in August 2018, co-organised by the US Department of State, Bureau of International Narcotics and Law Enforcement Affairs (INL) and the US Fish & Wildlife Service (USFWS), with the participation of enforcement agents from Colombia, Peru and Brazil (see Box XIII).

Lastly, Freeland, in partnership with WWF and INL are organising the establishment of a IWT cross border group with invited representatives from Brazil, Colombia, Guyana, Peru and Suriname, aiming at increasing and operationalising actions to curtail transnational IWT in northern South America.

⁶⁴<http://mpambiental.org/site/public/resources/works/DECLARACI%C3%93N%20DE%20S%C3%83O%20PAULO.pdf>

⁶⁵https://www.serfor.gob.pe/wp-content/uploads/2019/10/Declaraci%C3%B3n-de-Lima_4.oct_2019.pdf

BOX XIII: Co-ordination across Amazon borders

A tri-national workshop on Combating Illegal Wildlife Trade was held in Leticia, Colombia in August 2018 with the aim of developing local capacities of the institutions and police forces responsible for combating IWT on the borders of Colombia, Peru and Brazil. The INL Section in the US Embassy in Bogotá, Colombia; the International Operations Unit of the Fish and Wildlife Service (Lima, Peru), the International Technical Assistance Programme of the US Department of the Interior (DOI-ITAP), and the National Police of Colombia were present. The workshop was attended by over 50 environmental control agents and police officers from the three bordering countries and the US, and enabled the discussion of legal and institutional frameworks for combatting IWT in the three countries, sharing best practice and lessons learned, and reaching agreement on future actions and collaborations.

Key results of the discussions are included in the workshop highlight the need for:

- Establishment of an integrated database to improve co-ordinated action between the forces of the three countries.
- Review of the legal and institutional framework for combatting IWT in this border region, including the requirements for legally-traded wild animals and products, and procedures available to police officers and investigators for the arrest of offenders caught in the act of trafficking and seizure of their goods.
- Identification of best practices, lessons learned and effective tools for fighting IWT in the region. Uncoordinated operations, high staff turnover, a lack of familiarity and personal interaction between national forces, and the absence of standardised approaches can undermine the effectiveness of control operations in border areas.
- Mapping of the main trade routes to and from Leticia, based on maps and images produced by the Colombian Air Force, CORPOAMAZONIA, the Colombian Ministry of the Environment and Department of National Parks. Sharing trade route information between national forces of the three countries is key to more co-ordinated operations and investigations.
- A recognition of the importance of engaging the full official hierarchy and resource-base of the forces in the fight against IWT, from the patrol officers to the commanders in capital cities, as well as park rangers and local authorities, supervisors and judges, all working together to stop the trade in border regions.

Key recommendations emerging from this workshop were to:

1. Establish a Trinational Operations Working Group to oversee follow-up to workshop results and co-ordinate co-operation efforts, based on existing transboundary agreements.
2. Gather and share intelligence on most traded species, trade routes and the organised criminal gangs operating in the region, amongst the authorities of the three countries, as a key first step to organising joint operations. The control of the illegal trade in timber, in particular, requires a deeper understanding of the trade and urgent attention by the authorities. The US Fish and Wildlife Service can provide access to its extensive database on the criminal gangs involved in the trade.
3. Build capacity and a deeper understanding in the police forces of the applicable legislation and official documentation related to international wildlife trade in each country (the content and format of relevant trade certificates required by the authorities in each country that accompanies river traffic load).
4. Build capacity and understanding of the relevant legal and institutional frameworks in each country and facilitate the interpretation and application of regulations in border regions, e.g. through the use of standardised checklists of rules, procedures and authorities that need to be engaged in each case.
5. Organise and launch joint and/or simultaneous patrol operations targeting the river and its ports, sawmills, and sales points for wildlife and their parts in local markets, to prevent offenders from exploiting legislative loopholes regarding the distinct responsibilities of different authorities for each type of offence. It was proposed that the Colombian Air Force create an inter-institutional environmental protection department to support the gathering and sharing of up-to-date information in the Colombian Amazon region.

7. TACKLING THE TRADE: INFORMATION AND IMPLEMENTATION GAPS

TACKLING THE TRADE: INFORMATION AND IMPLEMENTATION GAPS

Several actions, mechanisms and programmes have evolved over the years to help tackle the illegal trade in wildlife in Brazil. Some have been described above, others could not be fully incorporated into this document within the timeframe available for this assignment. The following information and implementation gaps remain:



Amazon region:

- Assess impacts of wildlife tourism.
- Assess information on seizures performed by state level law enforcement agencies.
- A more thorough information gathering on the legal status of wildlife, wildlife legislation and data on trade of key neighbouring Amazon countries (Bolivia, Peru, Ecuador, Colombia, Guyana, Suriname, French Guiana).
- More direct links and partnership with US National Strategy for Combating Trafficking, the Peruvian National Policy for Combatting IWT, Eliminate Neutralize and Disrupt (END) Wildlife Act and 2018 Report, the UNODC World Wildlife Crime Report 2016, aiming at identifying opportunities for joint collaboration and strengthening IWT capacity.
- Identify suitable partner organisation(s) for implementation of the recommendations in this assessment.



The domestic legal and illegal songbird trade:

- Assess identification marking systems in other countries aiming at introducing improved control mechanisms for captive-bred stocks (introduce standardised country-wide electronic rings/chips/marking systems/DNA paternity tests, analysis of stable isotopes).
- Research successful community-engagement initiatives (e.g. TAMAR marine turtle programme, *Programa Quelônios da Amazônia*, etc) with a view to incorporating lessons learned from these initiatives into the design of effective community-engagement programmes in source areas. Assess impacts, lessons learned and effectiveness of IBAMA's "*Linha Verde*" public reporting service. The *Linha Verde* helpline receives reports from the general public on illegal and criminal practices involving wildlife, deforestation, pollution, etc. It also responds to queries and

clarifications regarding IBAMA's wildlife control and management systems (SisFauna, SISPASS, etc).

- Review of information, guides, tools designed to assist in combating illegal wildlife trade (e.g. the Bird Identification Guide produced by the Federal Police) and assess their reach and effectiveness.
- Identify suitable partner organisation(s) for implementation of the recommendations in this assessment.



The illegal wildlife trade in Brazil—in general:

- Assess the feasibility of integrating data management systems of different law enforcement agencies.
- Map efforts, available capacity and enforcement issues in ports, airports, roads, border areas, markets, urban areas, protected areas, buffer zones; in-depth information gathering in airports both large and small landing strips (large: Fortaleza, Teresina, Palmas, Belém, Manaus, Brasília, Salvador, Ilhéus, Recife, Vitória, Rio de Janeiro, São Paulo e Foz do Iguaçu), main capture sites in the states of Tocantins (Lizarda; Serra do Jalapão; Mateiros; Santa Rosa; Centenário; Recursolândia; Silvanópolis; Araguaianã; Ponte Alta; Araguaçu; e Ilha do Bananal), Goiás (Chapada dos Veadeiros; São Miguel do Araguaia; Bonópolis) and Minas Gerais (Bunitis; Serra das Araras; Serra dos Gaúchos; Parque Nacional Grande Sertão Veredas; Uruçuia), main sales points.
- Produce detailed maps of current main capture sites.
- Research potential for environmental damage compensation schemes that take into account the value attached to wildlife and poverty levels in capture areas.
- Update analysis of CITES data to 2019 (Ortiz-von Halle, 2018 and GTZ report both provide analysis of CITES data up to 2014).
- Produce analysis of CITES data specifically for the Amazon region (GTZ report uses countrywide CITES data covering all other biomes in addition to the Amazon (Cerrado, Pantanal, Atlantic Forest, Caatinga).
- Carry out detailed assessments of jaguar poaching and trafficking of their parts.
- In depth review of the current status of Sustainable Wildlife Management initiatives and enterprises (caiman, ornamental fish, arapaima, etc) to verify (confirm or disprove) their potential role as a strategy to reduce the IWT of target species in the long-term.
- Work with customs in Brazil and in other countries (such as Spain, Portugal and others) to assess non-CITES listed species which are protected by origin but being traded internationally. Evaluate the extent to which these are likely to have been illegally sourced.

8. FINDINGS AND RECOMMENDATIONS





FINDINGS AND RECOMMENDATIONS

One of the most striking findings emerging from interviews, opinion pieces, relevant literature and news articles is the perception amongst professionals and researchers that IWT in Brazil is very widespread (involving millions of animals and large volumes of wildlife products). Moreover, wildlife experts and professionals are unanimous in pointing out that pervasive and uncontrolled capture of wild animals and plants for the illegal trade is having grave consequences for Brazilian biodiversity, the national economy, the rule of law and good governance. However, existing trade data are rarely consolidated, and therefore unable to confirm or rebuke this shared perception. Poor data collection and management have the effect of playing down the importance and severity of the illegal trade and undermine the efforts of the already-stretched enforcement agents and police forces to combat IWT in Brazil effectively.

This assessment has aimed to identify some of the factors behind the IWT “data paradox”, in which a lack of good quality data on the illegal trade leads to a lack of recognition of its relevance. This in turn de-prioritises IWT in investment and budgetary decision-making processes, leading to a reduction in the human, financial and technical resources needed to improve detection and interception of wildlife crime, resulting in less quality data. This vicious circle widens the gap between the general perception that IWT is serious and widespread and the distorted picture of IWT that poor data provides. Key factors contributing to data deficiencies are a complex, inadequate and imprecise legal framework for IWT that fails to recognise wildlife trafficking as a serious crime, lack of effective personnel in key positions, lack of capacity and continuous training, limitations of existing systems for controlling legal captive breeding and de-linking it from the illegal trade, and a widespread perception that trafficking wildlife is a minor crime characterised by impunity of offenders and mild penalties. In addition, there is virtually no capacity for consolidating and sharing data, which leaves authorities blind to the reality of wildlife trafficking in Brazil.

Given the issues identified in the assessment, a number of recommendations have been drawn up based on the findings of the data analysis, responses from access to information requests, research of official websites and information gathering on non-official websites (civil society organisations, media etc). Recommendations also include suggestions offered by experts interviewed during Phase 1 and Phase 2.

The top five priority recommendations are listed below, followed by a more detailed list of recommendations organised according to key needs and demands emerging from the issues covered by the assessment.

- 1. Develop Brazil's National Strategy for Combating Wildlife Trafficking, creating a multiagency committee responsible for fostering institutional cooperation and data sharing;**
- 2. Enhance quality of data collection, management and sharing between IWT institutions, allowing for accurate assessments of IWT in Brazil and the results of IWT actions;**
- 3. Strengthen current environmental crimes legislation to consider wildlife trade as a serious crime and amend its text to differentiate professional traffickers from non-professional opportunistic traders/keepers of illegal wildlife as well as to encompass ornamental fish;**
- 4. Invest in improving existing CETAS infrastructure and maintenance, opening strategically located new CETAS, and invest in repatriation mechanisms including the science needed to support them;**
- 5. Adopt scientific methods to enhance origin traceability of legal animals as well as detection of laundering of poached animals using mainly DNA paternity tests and stable isotopes analyses.**



Political will

First and foremost, Federal, State and Municipal level governments need to acknowledge wildlife trafficking as the serious crime that it is, and recognise the harmful impacts that it has on several fronts. Counter wildlife trafficking efforts can no longer depend on the personal motivation of a few governmental officers and need to be integrated into the government policies. To accomplish this, it is necessary to build political will and insert this issue on the agendas of governmental institutions (environmental agencies, education agencies, public health agencies, research institutions, law enforcement agencies, National Congress, etc) at different levels (Municipal, State and National). Specific public policies to address the issue need to be developed, as well as clear targets, goals and measures of success. In order to accomplish this, the consensus amongst environment agencies, legislators, environmental law experts, police forces, and independent IWT experts is that a Brazilian Strategy for Combatting Wildlife Trafficking needs to be developed, potentially as part of a new broad Wildlife Protection Policy. Other South American countries (Peru and Colombia) have specific strategies for combatting IWT which has enabled them to tackle the trade in a more effective, strategic and systematic manner, and by all accounts, with good results. However, it is critical to assess the timing, appropriate mechanisms and political context in order to take this project forward.

In the meantime, initial steps have already been given. An inter-institutional group⁶⁶ was convened in late 2017 to kick-start a process for the development of a Brazilian strategy for combating IWT. The strategic priorities emerging from this meeting remain highly relevant, and should be considered in any future efforts to tackle IWT in the country:

- 1. Strengthen enforcement efforts of relevant agencies and police forces to tackle criminal activities:** currently IWT in Brazil is considered a minor offence under existing legislation, with weak penalties which don't get enforced.
- 2. Reduce the demand for wildlife and their products:** repression actions to curb IWT will only be effective if carried out alongside a strong effort to increase awareness amongst consumers of the issues surrounding IWT and their impacts, so as to reduce demand for wild animals and promote a lasting change in attitude towards wildlife.
- 3. Promote international co-operation and Public-Private Partnerships:** national and international alliances are needed to combat IWT, and engage the full spectrum of consumer, transit and source countries.

However, creating political will is not just about holding meetings and conducting assessments, but understanding that lines of financing need to be created to hire personnel, to buy equipment, to conduct training, to enhance systems. It will not be possible to combat wildlife trafficking effectively without governmental investment. **The key is for governments to understand the difference between expenditure and of investment, and the value of healthy ecosystems and of conserved biodiversity.**

⁶⁶Participating organisations included the Ministry of Environment, IBAMA, ICMBio, House of Representatives of the National Congress, Public Prosecutor's Office of São Paulo State, Freeland Brasil, US Embassy



Legislation

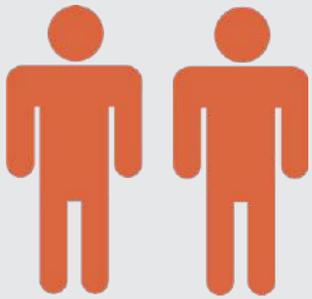
Enforcement of current IWT legislation in Brazil is insufficient and ineffective to curb wildlife trafficking. Despite its deficiencies, existing legislation can be applied more adequately for example, by offering settlement agreements only to offenders who fulfil all the requirements defined in the legislation. In order to accomplish this it is necessary to work with Federal and State level Public Prosecutors and Chief Police Officer (“*Delegados*”) routinely to check the criminal records of offenders. Integrating state-level legal processes between states would also help to close legal loopholes; for example if the offender has been offered a settlement agreement by the Prosecution in one state, Prosecution offices of other states need to be able to access this information. In cases in which the trafficker is clearly a professional criminal and the illegal activities are recurring, the Penal Code (Articles 155, 180, 288, 296, 334) should be used. A series of recommendations regarding the alternative use of current Brazilian legislation in wildlife trade cases are listed in the final report from the “Legislation and Wildlife Trafficking” workshop⁶⁷ (held in São Paulo in May 2019), and are summarised in this assessment (Box III: Application of Alternative Legislation in Wildlife Trafficking cases on Brazil) and also available online (in Portuguese)⁶⁸.

Additional recommendations related to wildlife trade legislation are:

- Support the efforts of agencies and organisations working to strengthen environmental criminal law and harmonise existing legislation
- In order to be perceived as a serious crime, wildlife trafficking needs to be defined as such in national and state legislation and regulations; this requires changes to existing legislation on the subject including a clearer criminal classification (“*tipificação*”) of wildlife trafficking crimes according to their severity, for example, making a distinction between professional traffickers/ringleaders and individuals who keep wildlife at home; changes are also needed to ensure that penalties are proportional to the gravity of the crime, including maximum penalty of at least 4 years for more serious, repeat offences (currently the maximum prison sentence is one year).
- Assess options for re-categorising IWT offences as “serious crimes”, as recommended by Resolution no. 69/314 of the 2015 UN General Assembly (“Tackling illicit trafficking in wildlife”), and as defined by the 2000 UN Convention against Transnational Organized Crime (UNTOC), and recently included as a political commitment in the Lima Declaration by the governments attending the First High Level Conference on Illegal Wildlife Trade in the Americas, of which Brazil is a signatory.
- Create/increase awareness amongst legislators, judges and enforcement agents of how they can full apply existing legislation on other criminal offences, including fencing (“*receptação*”), contraband and smuggling, and forgery of official seals. Support the provision of legal mechanisms within international agreements and conventions that act as disincentives for IWT, including the categorisation of crimes punishable by extradition and freezing of assets.
- Develop a framework to protect locally/nationally protected species, illegal by origin but not listed in CITES

⁶⁷The IWT legislation workshop was held in São Paulo in May 2019, and was organised by Freeland Brasil in collaboration with the US Department of State, the US Department of Justice, the US Forest Service, the Public Prosecution Office of the state of São Paulo (MP-SP), the Association of Federal Judges of Brazil (AJUFE) and the Association of Brazilian Environmental Public Prosecutors. Participants included federal public prosecutors, state prosecutors, senior officials from the Federal Police, and Civil Police, judges from the Federal Court and State Court, IBAMA, ICMBio, state environmental agencies, US Department of Justice officials and Freeland Brasil staff

⁶⁸https://da195228-8619-4908-b937-872d589e15e5.filesusr.com/ugd/16429e_618353bfa95949fa9e363da50c96883c.pdf



Staff and capacity

The lack of well-resourced personnel in enforcement agencies and police forces and of material and technical resources for combatting wildlife trade in Brazil cannot be minimised. This is one of the top issues mentioned by interviewees from various institutions and agencies during the information gathering phase of this assessment. No matter how many binational, trinational, or regional agreements are signed, or how many training programmes or improved control systems are in place, if Brazil's international borders, airports and seaports are not well staffed, they will continue to be open to trafficking. If police officers and their families are posted to very challenging and isolated locations, and if local forces and agencies are understaffed and covering a range of other illegal activities including trafficking of drugs, arms, human trafficking, and terrorist threats, then wildlife trafficking will not be a priority. Therefore, the most important step for effective countering of IWT is to change the mindset of governments about staffing IWT-related agencies, with special attention to borders and to CETAS. It is crucial to support the provision of capacity, guidance, training and equipment for agents and police officers; training and capacity building need to be recurring (not one-off events) due to the high turnover rate of police force placements, and to reinforce previous learnings. Without human resources, continuous capacity building and equipment, combatting illegal wildlife trade will continue to be ineffective.



Assessments and investigation

Periodic assessments and analyses of wildlife trafficking related data should be conducted as a way to diagnose the evolution of the trade, as well as the effectiveness of policies and solutions put in place. These assessments would be useful to making necessary adaptations, corrections and changes to the actions being developed, as well as to define species to focus on, which might change from time to time. Before a consolidated repository of information can exist, this process needs to be done internally by each agency (environmental and law enforcement, at municipal, state and federal levels), and centralised by one agency which could consolidate all data, ideally the Ministry of Environment.

- Carry out an in-depth assessment of the links between IWT with other forms of organised crime, in particular in transboundary areas in the Amazon and Pantanal regions
- Carry out a detailed assessment of efforts to tackle IWT in airports, ports, and along major inter-state road systems, aiming at better understanding the opportunities and challenges associated with detecting and acting on the trafficking of wild animals



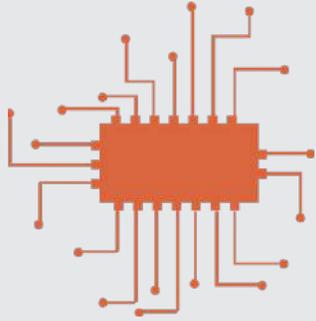
Data and co-operation

This assessment confirms the widespread view shared by IWT professionals in Brazil of the need to develop an integrated system shared by all relevant agencies in which high quality data are consolidated and duplicate entries are identified. This would ideally involve IBAMA, ICMBio, Federal Police, Federal Highway Patrol, Federal Prosecution, State level Environmental Agencies, State level Environmental Military Polices, State level Civil Polices, State Highway Patrol, State level Prosecution and Federal, State, Municipal and privately managed triage and rehabilitation centres. However, simply integrating existing systems may not be enough; the data analysis carried out for this report has allowed for the identification of numerous flaws in the way that current systems operate and of the inadequacies of the type of information collected, which do not allow for a realistic and more accurate understanding of the status of wildlife trafficking in Brazil. The datasheets used in one such analysis had numerous errors, probably due to difficulties in uploading the information and filling the forms, and many entries are text-based, which makes even simple filtering and analysis difficult. In another, species are frequently listed by their common names or included as groups with broad classifications (reptiles, birds, mammals). One system was only able to record the total number of events and total number of items seized. Therefore, if the collection and quality of gathered information does not change, integrating existing systems will not improve the current situation. The system needs to be easy to use, responsive, and ideally include a species identification tool using images and artificial intelligence; they should minimise text entries and facilitate data filtering and sorting, and at a very minimum they need to include information about the species seized and the number of individuals per species. Systems should also be able to export reports which can be used by agents and police officers, as well as to export data analysis reports.

Importantly, besides developing integrated systems that allow high-quality data to be gathered and shared between institutions and sound wildlife trade analysis to be performed and reported on, authorities need to have the mandate and resources to act upon the findings of such reports, combining them with effective intelligence and collaboration between IWT agencies, in order to adequately institutionalise and operationalise effective IWT counter measures in Brazil.

Additional recommendations related to wildlife trade data and institutional co-operation are:

- Improve data gathering and management, including data analysis and compatible systems.
- Support co-operation and joint actions for the gathering, compilation, analysis and sharing of relevant information
- Support the implementation of national-level systems for wildlife management and control, for registration and reporting environmental offences, for the seizure and placement of confiscated animals
- Support and stimulate the development of international agreements to combat IWT in Brazil and promote collaboration between national agencies, international NGOs and the global private sector, aiming at sharing information and engaging in joint training programmes and collaborations.
- Assess the potential for adoption of the FPI model widely (the highly successful Integrated Crime Prevention initiative implemented in the Brazilian states that are part of the São Francisco river basin)
- Engage relevant stakeholders in a dialogue aimed at addressing existing co-ordination issues between federal and state agencies responsible for combatting IWT in Brazil, so as to more effectively tackle IWT in the countries (start with a coalition of the willing)



Technology and traceability

Since breeding and keeping wild animals in captivity will likely continue to be allowed by law, it is imperative that the best origin traceability methods possible are applied to curb the currently widespread laundering of wild animals. This involves investing in the development and implementation of a programme by IBAMA to create more reliable and forgery-proof rings or other identification marking systems for captive wild animals in order to prevent fraud and forgery. Investments also need to be made in the development and application of analyses of stable isotopes for origin assignment and for differentiating captive from wild caught animals, and in the use of DNA paternity tests as a way to control the captive stocks of wild animals effectively. This also involves promoting a better understanding amongst state-level agencies that, although wildlife management is now state-based in Brazil, the illegal trade is mostly interstate and international, which requires IBAMA to retain its mandate to control certain aspects of the trade, including inspection and law enforcement of wildlife legislation and a national-level control system for wildlife management, or an integrated inter-state system.

Enhancing origin and traceability would be a wide initiative pertaining to many governmental levels, from developing legislation and regulations, to agencies which fund research, academia, and ministries of environment (IBAMA/ICMbio), justice (Federal Police), as well as state-level environmental agencies and public security secretariats (state-level police). For example:

- Legislation and regulations would have to be issued creating standardised markings to be used by commercial breeders, or requesting breeders and keepers to use newly developed rings, even if this would bring costs, or requesting breeders to pay for the costs of paternity tests conducted by law enforcement to detect poached laundered animals. Breeders/keepers would need to accept that IBAMA still has the responsibility of overseeing CITES-listed species, inter-state and international transit, among others. Therefore, there must be a federal system and standardised markings for all states of the federation. Above all, the industry which exploits wildlife needs to accept regulations rather than pressure for the activity to be de-regulated;
- There needs to be funding (federal and state-level governments) for basic science to be developed by academia—molecular markers, population genetics studies, isoscapes, or others.
- CETAS and/or forensic facilities (federal and state-levels) need to be capable (equipped, staffed, trained and resourced) to develop and conduct tests (DNA paternity or stable isotopes)

In this context, it is relevant to:

- Promote the use of modern technologies in the identification of illicit activities regarding IWT, including DNA analysis, standard digital marking systems for captive animals, a unified database on traffickers and IWT shared by all federal and state agencies, development of tools including smartphone applications, etc.
- Support and strengthen capacities of wildlife reception centres (CETAS, CRAS, etc) to receive, triage, rehabilitate and release seized animals, including, where possible, the repatriation of animals from other parts of the country/other countries, through mainstreaming the application of the existing science on genetics and stable isotopes.
- Help to strengthen existing international agreements for wildlife protection, and to work more effectively with CITES to enhance traceability of legally traded wild animals.
- Enhance origin traceability and invest in the development of more robust individual marking methods for legally held wild animals (electronic marking, genetics profile etc).
- Enhance detection capacity of laundering attempts: extensive ongoing

training on using the SISPASS system, and in ring forensics; investment in DNA paternity tests and analyses of stable isotopes; role out Operation Delivery to all states (checking hatchings and nestlings before providing rings) so it becomes the rule, rather than the exception, and invest in more frequent repeat operations; create uniform individual identification marking tags/rings for the commercial captive breeding industry, including tanneries and producers of leather goods.

- Work with airport and port systems that detect guns and drugs to detect wildlife.



Demand reduction

Supply exists where there is demand for a product or service. Ultimately, the responsibility for the IWT is the consumer market which, knowingly or not, supports the illegal supply chain of wildlife trafficking, mainly based on the argument that the use of wildlife is part of their culture. Not only is there an urgent need to create awareness by government and civil society organisations in Brazil concerning the responsibility of consumers related to the illegal supply chain, but it is also necessary to start an in-depth discussion with society that cultures can and need to evolve. Therefore, in order to decrease IWT, it is relevant to engage relevant Ministries including Education and Environment, along with strategic private sector players and civil society organisations in order to:

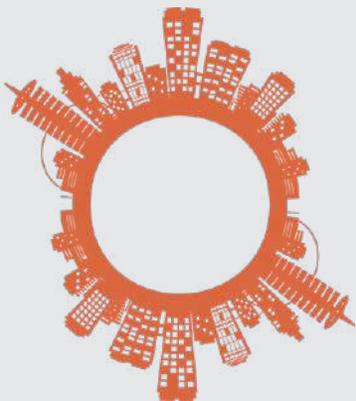
- Reduce demand by enhancing awareness and other social behaviour change communication strategies for wildlife trade; implement medium- and long-term environmental education programmes that drive through the message that “people sell wild animals because someone is buying them”; education and social reprehension will be the driving forces of behaviour change.
- Support the development of education materials to include content on wildlife protection so as to enhance awareness of illegal trade.
- Help carry out campaigns targeting the general public on the laws and regulations for wildlife protection.
- Encourage the development of partnerships between government agencies, the private sector and civil society organisations aimed at enhancing awareness and reducing demand.

Social issues

It will not be possible to combat the illegal collection of wildlife in source areas without dealing with issues such as poverty and social inclusion, and this does not mean relying on a few local projects led by international organisations and NGOs involving a few co-operatives with local communities. This means massive public polices and state presence supplying education, health, access to clean water and sanitation, as well as professional training and incentives, to the creation of stable sources of income. The burden of combating the illegal exploitation of wildlife lies in the hands of society as a whole, represented by the state. Efforts specifically to reduce illegal collection and poaching of wildlife in source areas would need to involve different governmental levels (Federal, State, Municipal), and involve public health and education agencies, and the development of initiatives for sustainable sources of income, specific for each location.

In this context, it is relevant to:

- Implement income-generation programmes in rural and urban areas near major capture sites (sites are known), targeting impoverished communities who rely on wild animal trapping for their livelihoods (either as food or as a source of cash), and disincentivise local people to trap animals and collect eggs and hatchlings.



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