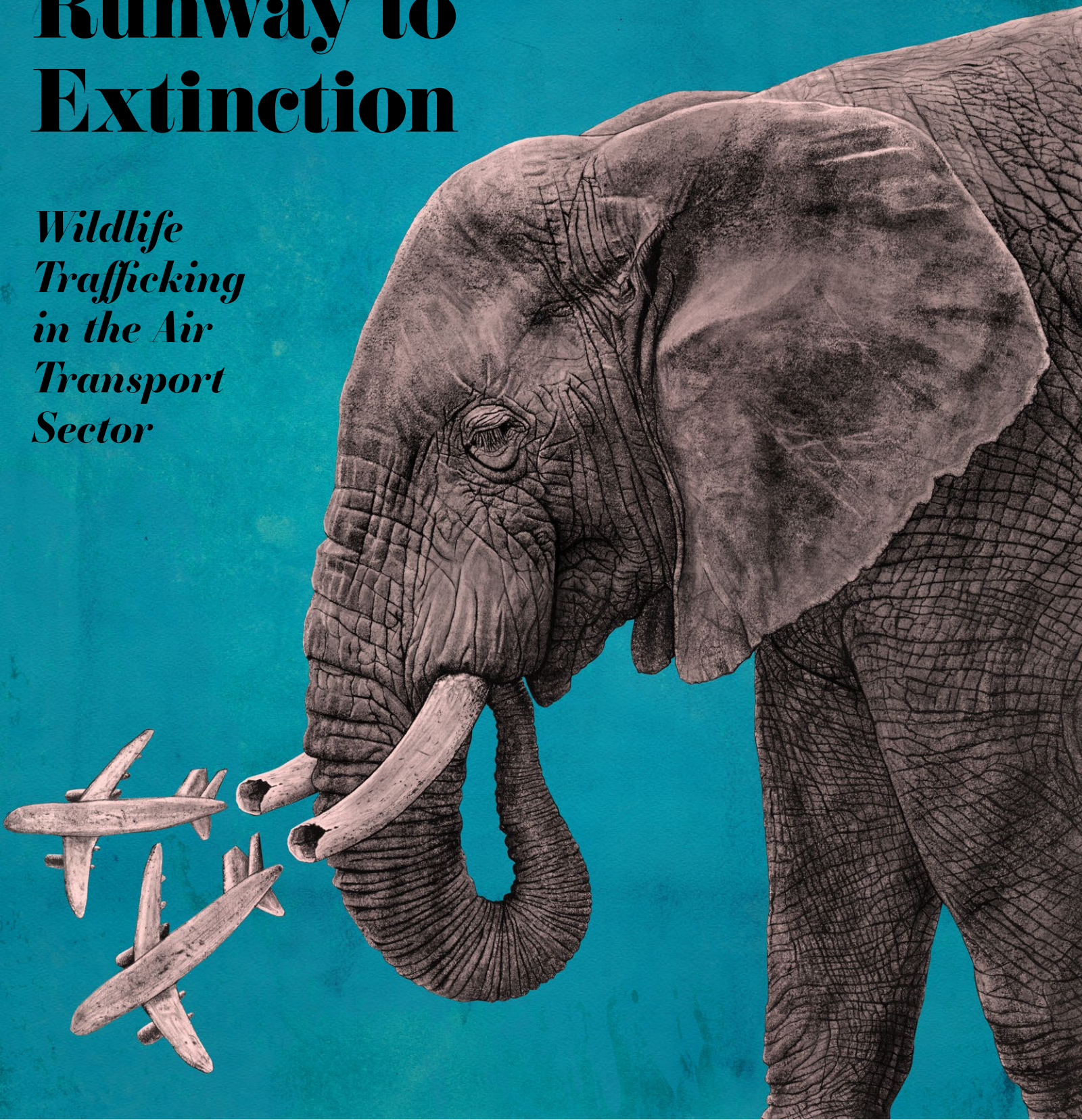


# Runway to Extinction

*Wildlife  
Trafficking  
in the Air  
Transport  
Sector*



**USAID**  
FROM THE AMERICAN PEOPLE



**C4ADS**  
innovation for peace



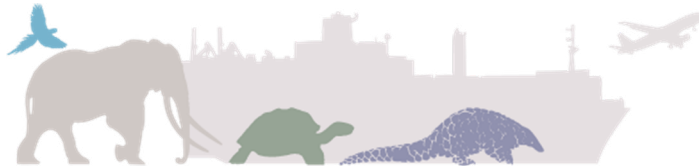
**TRAFFIC**  
the wildlife trade monitoring network





# ROUTES

Reducing Opportunities  
for Unlawful Transport of  
Endangered Species



The USAID Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES) Partnership brings together transport and logistics companies, government agencies, development groups, law enforcement, conservation organizations, academia and donors to disrupt wildlife trafficking activities, and forms a key element of the concerted international response to addressing wildlife poaching and associated criminal activities worldwide.

At the heart of ROUTES is a core group of partners collaborating with the U.S. Government and the transport sector that includes the Airports Council International (ACI), Center for Advanced Defense Studies (C4ADS), Freeland, the International Air Transport Association (IATA), TRAFFIC and WWF.

For resources referenced in this document or for more information visit:

[www.routespartnership.org](http://www.routespartnership.org)



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This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of C4ADS and do not necessarily reflect the views of USAID, the United States Government, or individual ROUTES partners.

The designations of geographical entities in this publication, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of C4ADS, ROUTES, or ROUTES partners concerning the legal status of any country, territory, or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Once thought of as largely confined to Africa and Asia, wildlife trafficking has become increasingly prevalent all over the world, now ranking behind only drugs, human, and arms trafficking as the most valuable type of international organized crime by estimated annual value.<sup>1</sup> Wildlife trafficking's rise has been supported by the world's increasingly interconnected systems of finance, communication, and transport, which have brought once isolated source regions in remote areas closer and closer to large demand markets in North America, Europe, and Asia. The proliferation of air transport has exacerbated the issue even further; a trip that once would have taken months by land and by sea may now take 24 hours or less of travel in comparative calm and comfort.

While these changes have been boons for the global economy, they have also put wildlife at risk like never before.<sup>2</sup> The negative side effects of this economic progress are immediately evident in the substantial population decline of vulnerable species over the past few decades alone. If wildlife poaching and trafficking continues unabated at this scale, regional ecosystems face not just species extinction, but complete collapse. In the face of such catastrophic overexploitation, steps must be taken to reverse the damage caused by the creation of a global marketplace.

There is a silver lining, however; as wildlife traffickers have increasingly come to rely on income derived from wildlife native to other world regions, they have made themselves dependent on the international systems of transportation that made their illegal trade possible in the first place. As a result, implementing preventative measures against wildlife traffickers using international transport systems could increase the cost associated with trafficking wildlife to such an extent that traffickers may abandon the attempt.

To that end, the USAID Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES) Partnership was formed in 2015 to bring together transport and logistics companies, government agencies, development groups, law enforcement, conservation organizations, academia, and donors to disrupt wildlife trafficking through the air transport sector. C4ADS produces the data and analysis helping to guide the ROUTES Partnership's activities, and has so far published two reports, *Flying Under the Radar* (2017) and *In Plane Sight* (2018), examining trafficking trends, routes, and methods in airports for ivory, rhino horn, reptiles, birds, pangolins, mammals, and marine species since 2009.

While both previous reports focused on identifying trends associated with trafficking of different types of wildlife beginning in 2009, *Runway to Extinction* shifts gears, concentrating instead on recent trafficking trends (2016 – 2018) in six world regions: Africa, the Americas, Asia, Europe, the Middle East, and Oceania.<sup>3</sup> Still, each successive report has shown that wildlife trafficking by air varies little from year to year and region to region, and so many of the key findings outlined in *Runway to Extinction* echo conclusions drawn in *Flying Under the Radar* and *In Plane Sight*.

In *Runway to Extinction*, as in *In Plane Sight* and *Flying Under the Radar*, C4ADS analyzes the seizure data in the C4ADS Air Seizure Database to determine wildlife trafficking trends, as well as the routes and trafficking methods utilized by wildlife traffickers. **The findings in this report are not meant to represent the entirety of wildlife trafficking activity through the air transport sector, but are intended to showcase the patterns visible within the C4ADS Air Seizure Database, with the understanding that a different or more complete dataset may reflect different results.** Each section of the report should be read with this in mind.

Note that the use of seizure data, while currently the best method available for investigating trafficking activity of all types, can lead to a variety of mistaken conclusions. For instance, better public seizure reporting may create the appearance of high levels of trafficking activity where only low levels exist. Still, seizure data, taken together with the appropriate caveats, provides a good picture of overall trafficking activity, and can be used to direct future anti-trafficking efforts.

Overall, *Runway to Extinction* finds wildlife trafficking to be global in scope, with trafficking attempts reported more and more frequently. This report's regional focus has emphasized the tendency of wildlife trafficking trends, routes, and methods to be determined more by the type of wildlife being trafficked than by the region it is trafficked in. Relatedly, each region's exposure to wildlife trafficking activity is driven primarily by its proximity to specific source regions and demand markets. Finally, wildlife traffickers tend to exploit the same vulnerabilities within airports that other traffickers do, giving enforcement authorities and the private sector an opportunity to address the weak points identified within this report and strengthen their defenses.

<sup>1</sup> Nellemann, C. (Editor in Chief); Henriksen, R., Kreilhuber, A., Stewart, D., Kotsovou, M., Raxter, P., Mrema, E., and Barrat, S. (Eds.). *The Rise of Environmental Crime – A Growing Threat to Natural Resources Peace, Development And Security*. United Nations Environment Programme and RHIPTO Rapid Response–Norwegian Center for Global Analyses, 2016. [http://unep.org/documents/itw/environmental\\_crimes.pdf](http://unep.org/documents/itw/environmental_crimes.pdf).

<sup>2</sup> Refer to **Appendix I: Security & Health Risks of Wildlife Trafficking** for a discussion of some of the risks posed by wildlife trafficking to the aviation industry.

<sup>3</sup> Data and graphics from the entire C4ADS Air Seizure Database (2009 through 2019) can be found on the ROUTES Dashboard at [routesdashboard.org](http://routesdashboard.org).

# AMERICAS

## MAIN TAKEAWAYS

**Wildlife trafficking in the Americas** primarily involved live animal trafficking, although there was a market in North America for certain wildlife products. For example, wildlife products derived from marine species were commonly exported from countries such as Mexico.

**There was significant demand in Mexico** for trafficked domestic species. This, coupled with the prevalence of the illegal totoaba trade, meant that Mexico was both the primary origin and transit country for wildlife trafficking in the Americas.

**Traffickers moving finches from Guyana to New York** in the United States tended to hide the birds in plastic hair curlers in their carry-on bags, sleeves, or socks. Since finch trafficking routes and methods tend to be consistent, customs and enforcement have an opportunity to use this information to search high-risk flights for finch trafficking attempts.

**Domestic flights and domestic wildlife markets** played a large role in wildlife trafficking in the Americas, especially within Mexico, Brazil, and Peru.

**Unlike other world regions,** the Americas stretch across the North-South Hemisphere boundary, and as such portrayed characteristics of both common origin and destination regions.

**Wildlife trafficking activity by air** appeared to be thinly spread across much of the Americas, with many countries occasionally publicly involved but only a couple with a significant seizure or trafficking instance count.

SOURCE REGIONS IN THE SOUTHERN HEMISPHERE, DEMAND REGIONS IN THE NORTH

# FIGURE 1

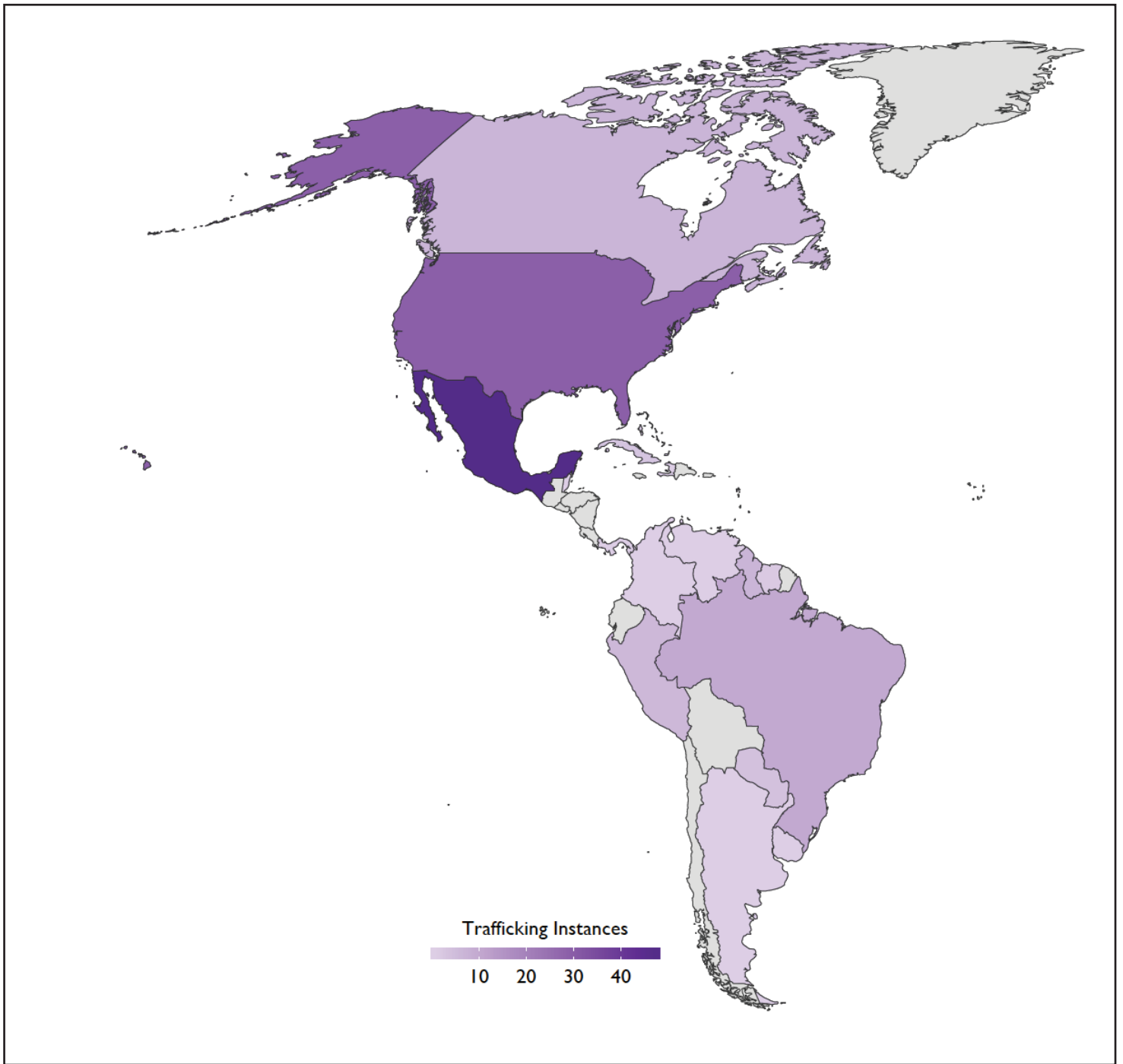


Figure 1. Heat map of wildlife and wildlife trafficking instances in the Americas' air transport sector (2016 – 2018)

The heat map represents the total number of times that a successful or planned trafficking instance was recorded for each country. The map includes instances where the product did not actually enter a country because it was seized earlier in the route. Note that the heat map reflects only those trafficking instances that were stopped in airports.

The heat map for the Americas reflects the consolidation of wildlife trafficking instances in North American countries, which acted as destination points for certain species, transit points for wildlife leaving Central and South America and destined for sale in the Eastern Hemisphere, and, on comparatively rare occasions, as origin points for specific North American species (e.g. totoaba and box turtles).

**Southern origin countries and northern destination countries**

Unlike most other continents, the Americas straddle the Southern and Northern Hemispheres. In other world regions, wildlife trafficking destination countries are generally located in the north (Europe, Asia, the Middle East), while source and origin countries are located mostly in the south (sub-Saharan Africa). That trend is visible in the Americas as well, as North American countries in general had higher demand for internationally smuggled wildlife than most of their southern neighbors.

**Importance of Mexico**

Between 2016 and 2018, Mexico was often used as an origin, transit, and destination country by wildlife traffickers. Although Mexico appeared to have a domestic market for trafficked live animals, and was occasionally used as a transit point for wildlife leaving South America for the United States and China, Mexico's significance was primarily driven by high demand for certain native Mexican species in Asian and European marketplaces. Demand for the swim bladders<sup>1</sup> of the totoaba, a fish species that only lives in the Gulf of California in Mexico, was particularly significant. Totoaba bladders were often transported by air (via passengers' checked bags) and made up 24% of the trafficking instances involving Mexico in the C4ADS Air Seizure Database.

Seizures made in the Americas between 2016 and 2018 were less diverse than seizures made in other world regions over the same period, and primarily involved birds and marine species.

SOURCE REGIONS IN THE SOUTHERN HEMISPHERE, DEMAND REGIONS IN THE NORTH

FIGURE 2

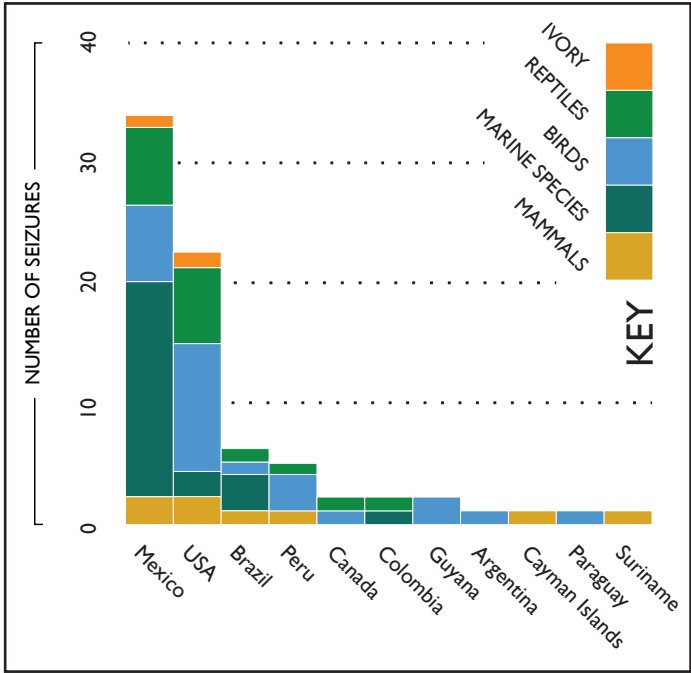


Figure 2. Total seizure count by American country (2016 – 2018)

FIGURE 3

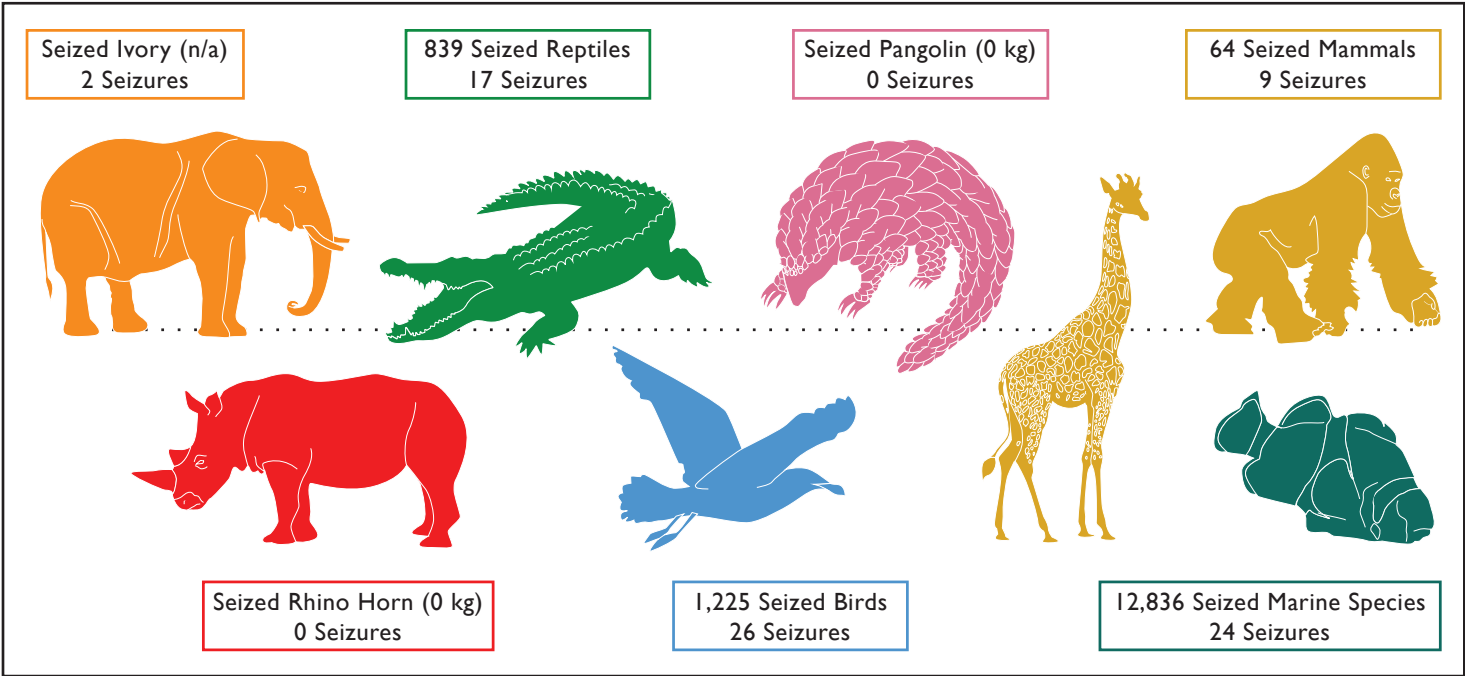


Figure 3. Number of American seizures displayed by type of wildlife or wildlife product seized (2016 – 2018)

<sup>1</sup>A swim bladder is an organ used by certain fish species to regulate buoyancy.

## Ivory seizures in the United States and Mexico

Although demand for most wildlife products in the Americas was either low or nonexistent in the C4ADS Air Seizure Database, Figure 2 does count two ivory seizures, one in the United States and the other in Mexico.

Ivory seizures in the United States, though comparatively infrequent, generally involve either small demand markets for ivory in certain US cities or tourists returning home from a trip abroad. In this particular instance, US Customs and Border Protection (CBP) agents were conducting routine checks on the luggage of a couple returning from the Philippines when an X-ray scan revealed something unusual in their bags.<sup>i</sup> The couple claimed they were bringing pickled mango home, but the agents found that they were carrying carved elephant ivory, hippo tusks, and warthog tusks.

IMAGE 1



Image 1. Two carved hippo tusks and two carved warthog tusks found in the luggage of a US couple returning from the Philippines in May 2018. Source: US Customs and Border Protection

Ivory seizures in Mexico, however, are particularly unexpected, as there is little to no known demand market for ivory in the country. But analysis of the US Fish and Wildlife Service's (FWS) LEMIS database conducted for *In Plane Sight* (2018) may explain the seizure counted there in 2016; LEMIS shows Mexico as the primary exporting country of ivory seized in US airports, likely driven by flight routes originating elsewhere and connecting to the United States through Mexico.<sup>ii</sup> Wildlife traffickers may be aware that US customs officials inspecting inbound flights from Mexico will be more focused on narcotics and other contraband than on wildlife. In this particular seizure, ivory and coral objects were discovered by a courier company on the way to Texas in the United States.<sup>iii</sup>

## Significance of Mexico

Mexico's prominence in Figure 2 is primarily due to the illegal trade in marine species, which accounted for 18 (53%) of the 34 known wildlife seizures made by Mexican authorities in airports between 2016 and 2018. Of those 18 seizures, 17 involved either totoaba swim bladders (ten), sea cucumbers (seven), or seahorses (four). One seizure even involved all three.

Mexico also counted six bird and six reptile seizures between 2016 and 2018. Most of the seizures involved live animals that had originated in Mexico and were either seized prior to departure or were discovered as they transited through a Mexican airport on the way to their destination. But there was one clear distinction between Mexican bird and Mexican reptile trafficking; while 88% of the bird seizures were destined for Europe (primarily Spain – see **Spain & Bird Trafficking** in *In Plane Sight*), the only reptile seizures with listed destinations were flying to other Mexican cities. Two of the seizures involved only domestic Mexican flights, meaning they originated in, transited through, and were destined for three separate Mexican airports.

Similarly, Mexico made two mammal seizures in 2017 and 2018, both of which involved live cubs (two tigers and one jaguar) flying from Mexico City to other Mexican airports.

# SWIM BLADDERS, SEAHORSES, AND SEA CUCUMBERS

A 2018 seizure in Mexico City showcased the overlapping nature of marine species supply chains in the Americas, and highlighted the importance of China as a destination country for American wildlife products.

On July 19, 2018, federal authorities in Mexico City Airport detected a strong smell of fish emanating from a passenger's suitcase. After inspecting its contents, they discovered two bags containing 81 dried seahorses, two bags of dried sea cucumbers, and two bags of dried fish bladders.<sup>iv</sup> The suitcase's owner, a dual Chinese-Belizean citizen, was on his way from Belize to Shanghai, China, which has become a common destination for marine species traffickers leaving Mexico after a direct flight was established between Shanghai and Tijuana in 2008.

After the seizure, the trafficker was arrested and put in preventative custody. The Mexican Federal Attorney for Environmental Protection



Image 2. Dried seahorses seized alongside totoaba bladders and sea cucumbers in Mexico City Airport in July 2018. Source: Enrique Castro-Mendivil, Reuters

(PROFEPA) recommended damage reparations of 477,081.46 pesos (US\$24,297).<sup>v</sup> The suspect was later fined 134,682.6 pesos (US\$6,865), a quarter of the recommended fine, and prohibited from re-entering Mexico.<sup>vi</sup>



According to the C4ADS Air Seizure Database, Mexico experienced an unusually high number of domestic wildlife trafficking instances between 2016 and 2018. The volume of apparent domestic trafficking activity in Mexico suggests that there is demand in Mexico for certain wildlife species, although it is not immediately clear what drives it.

Many of the known domestic trafficking instances in Mexico between 2016 and 2018 shared certain characteristics. For instance, all of the instances involved either reptiles or mammals, most of which were live animals destined for the illegal pet trade. All of the shipments were also sent by air freight, usually accompanied by incomplete or illegible documents without recipient information, and often involved several different species. Many of the shipments contained potentially dangerous animals, like snakes, crocodiles, tigers, jaguars, or lions.

For example, on August 1, 2018, Mexican Federal Police seized an air freight package in Tijuana Airport that contained 10 Morelet's crocodiles (CITES Appendix I and II) and an emerald tree boa (CITES Appendix II).<sup>vii</sup> The reptiles were sent from Mexico City and were concealed in three plastic containers.<sup>viii</sup> A couple weeks later, on August 28, 80 green iguanas (CITES Appendix II) were discovered in two air freight packages using the same route, from Mexico City to Tijuana Airport. The shipment documentation for the iguanas was incomplete and listed incorrect species information.<sup>ix</sup>

Big cat trafficking also seemed unusually prominent in Mexico between 2016 and 2018. For example, on June 15, 2017, Mexican Federal Police found a tiger cub in an air freight shipment in Tuxtla Gutiérrez Airport in Chiapas. The tiger had been sent from Mexico City.<sup>x</sup> Almost a year later, on March 25, 2018, PROFEPA seized a tiger cub and a jaguar cub in Tijuana Airport that had also been trafficked via air freight from Mexico City.<sup>xi</sup> The cubs were found when officials noted that documents meant to show the legal



Image 3. Tiger cub shipped from Mexico City to Chiapas via air freight and seized on June 15, 2017. Source: El Gráfico

provenance of the cubs were inconsistent. Other shipment documents were illegible, and did not include sender address or recipient information.<sup>xii</sup>

Finally, on October 1, 2018, Mexican Federal Police heard “roars” emanating from a wooden box labeled “live animals” during a review of air freight shipments for a commercial airline in Tijuana Airport.<sup>xiii</sup> Mexican officials opened the box and discovered a two-month-old lion cub inside. Airline employees provided officials with two documents for the cub, one of which was actually a permit for a Bengal tiger. The other document did not comply with Mexico’s General Wildlife Law. The cub was also not microchipped as required.



Image 4. A lion cub discovered in a wooden box in Tijuana Airport. Source: PROFEPA

Similar big cat seizures have also occurred in Mexico outside of the air transport sector. For example, on February 4, 2018, a sniffer dog with the Mexican Federal Police discovered a sedated tiger cub inside a plastic container at a truck stop in Jalisco.<sup>xiv</sup> The cub was due to be sent by mail to Queretaro in central Mexico.



Image 5. The tiger cub found on February 4, 2018 in Jalisco, Mexico. Source: Reuters

The same week, the Mexican Federal Police reportedly found another tiger cub due to be shipped by a postal company in Xoxocotlan, as well as a jaguar abandoned in a cage near a road in Chihuahua.<sup>xv</sup>

Taken together, these seizures indicate that demand for exotic pets in Mexico is significant, although they do little to explain where demand for these animals might be coming from.

Mexican social media accounts, however, provide a few clues. Like the ultra-rich of the Middle East, some Mexican narcotraffickers seem to flaunt their wealth online by purchasing exotic, often dangerous animals and posting the evidence on their social media accounts.<sup>xvi</sup> For example, Damaso Lopez Serrano, the godson of infamous narcotrafficker El Chapo, frequently posted images of weapons, drugs, and tiger cubs he kept as pets on Instagram.<sup>xvii</sup> Some Mexican narcotraffickers are even known to maintain their own small-scale “zoos,” housing big cats, monkeys, and snakes on their properties.<sup>xviii</sup> According to one Mexican official, “[The animals] are a status symbol. The people who acquire them are people with lots and lots of money, and other illegal practices are often going on there as well.”<sup>xix</sup>

Mexican narcotraffickers’ preference for exotic wild animals is aided by lax legislation in the country. In general, Mexicans are legally allowed to own wild animals as long as the animal is captive-bred and the owners acquire a permit from the Mexican Secretariat for the Environment and Natural Resources (Semarnat), microchip the animal, and provide assurances that it will be well-





Images 6 and 7. Mexican narcotraffickers post exotic animals kept as pets on social media profiles as a display of their wealth. Sources: Instagram/Sinaloa.Guasave and Central European News

cared-for. The price of the animals tends to be relatively low (in the low thousands of dollars), essentially meaning any relatively well-off Mexican citizen can at least purchase an exotic wild animal, even if they cannot afford to care for the animal long-term.

In 2016, an employee at the Guadalajara-based pet store Exotic Planet told a reporter that “We have brought in everything from lemurs to lions. They cost 75,000 pesos (US\$4,150) each.”<sup>xx</sup> The owner of the store stressed the legality of the exotic pet trade in Mexico, stating that if the animals “have been brought up in captivity, [and] the rules have been followed, there is no problem.”<sup>xxi</sup> The owner referenced breeding centers for dolphins, iguanas, deer, tarantulas, and lions in Mexico, saying, “It’s like oil. It is all exported to the United States.”<sup>xxii</sup> A tiger cub seizure on the US-Mexico border in August 2017 appeared to support this idea; the cub was being driven over the border by a teenager who had reportedly been boasting about selling tigers, jaguars, and lions from Mexico in the United States.<sup>xxiii</sup>

Mexico’s lax exotic wildlife legislation seems to support a significant market for exotic wild animals in the country, giving traffickers an opportunity to hide under the guise of legal compliance whilst shipping animals illegally within Mexico and abroad.



Image 8. A tiger cub found in the car of an apparent wildlife trafficker operating between Mexico and the United States. Source: US CBP

## IMAGE 9



Image 9. A tiger cub and jaguar cub that were discovered in an air freight package in Tijuana Airport with illegible and incomplete documentation. Source: Profepa

### **Appearance of the Amazon**

Five of the countries in Figure 2 – Brazil, Peru, Colombia, Guyana, and Suriname – all contain pieces of the remarkably diverse Amazon rainforest, and so may be targets for wildlife traffickers. Given the abundance of biodiversity present in each country, it is somewhat surprising that only 16 known seizures occurred in their airports between 2016 and 2018. It seems even more likely that wildlife trafficking in these countries is underrepresented in Figure 2 when well-known wildlife markets in the area are considered. For instance, the large, well-known Belén market in Peru's riverside city, Iquitos, specializes in selling bushmeat and live animals like parrots, tapirs, baby monkeys, and baby manatees.

There are a few possible reasons these Amazonian countries do not appear more prominently in the data. First, wildlife trafficking in the region often occurs by boat, given the remote, inaccessible nature of much of the rainforest. Furthermore, as one Iquitos trafficker explained, airport security makes it hard to traffic animals by airplane, so many are taken upriver to Pucallpa, and then are driven to Peru's Pacific coast.<sup>2 xxiv</sup> Second, awareness of wildlife trafficking in international and domestic airports in the region appears to be low, and even where it is not, seizing trafficked live animals and wildlife products seems to be low priority.

Third, screening for domestic departures and arrivals is often less rigorous than screening for international travel, further diminishing the chances that trafficked wildlife will be discovered, since much of South American wildlife trafficking occurs domestically. Finally, reporting of airport seizures does not appear to be as common in and around the Amazon as it is in other world regions, perhaps artificially deflating the apparent frequency of wildlife trafficking in the area.

“IMPORTANCE OF SEIZURE REPORTING & ITS EFFECT ON APPARENT ENFORCEMENT SUCCESS

<sup>2</sup>That same trafficker, however, also described taking orders from zoos, saying that one group in particular would fly into Iquitos on a private plane, presumably to pick up their purchased animals.

Source: <https://news.mongabay.com/2016/12/wildlife-for-sale-an-illegal-activity-out-of-control-in-peru/>

# BELÉN MARKET

A large market for trafficked wildlife can be found in the “floating city” of Belén, located on the outskirts of Iquitos, Peru, where vendors openly flout laws against the sale of bushmeat and wild animals.<sup>liv</sup> In this sprawling marketplace, the animals on offer include vulnerable species such as the South American tapir and yellow-footed tortoise.<sup>xxv</sup>



Image 10. Two jaguar pelts for sale in Belén, Peru. Locals consider jaguars a threat. Source: Eduardo Franco Berton

International demand has exerted a growing influence on the market's offerings in recent years. A recent investigation by local journalists found that jaguar products, prized by Chinese buyers, have been in especially high demand. Over the span of a week, the journalists found a large number of jaguar (CITES Appendix I) products for sale in the market, including four skulls, five pelts, 44 fangs, and 70 claws, as well as at least six turtles, a titi monkey, and boa constrictor meat.<sup>xxvi</sup>

Knowing that their primary customers are tourists, market vendors often offer to help buyers smuggle their purchases past airport customs and enforcement.<sup>xxvii</sup> One vendor explained, “We take dried leaves and wrap [the jaguar fangs] ... And we teach [the buyers] that they have to hide them in the middle of their clothes [in their suitcase]. We have had to do this several times, because if customs finds [the fangs] they will take them.”<sup>xxviii</sup>

However, despite clear wildlife trafficking activity and well-designed Peruvian counter-wildlife trafficking laws,<sup>xxix</sup> no one has been jailed for wildlife trafficking in Peru, according to Yovana Murillo of the Wildlife Conservation Society (WCS).<sup>xxx</sup> Some authorities hesitate to intervene in what they see as a local tradition, or because of the personal risk involved; according to locals, when a law enforcement official enters the Belén market, “all the vendors unite ... and don't let [the official] leave.”<sup>xxxi</sup>

Furthermore, countless diffuse transportation routes in the Amazon present a significant challenge for authorities working against wildlife trafficking in the area. According to one local authority, “although there are ports of control and customs, the magnitude of ports in the Amazon makes [wildlife trafficking] much more difficult to control.”<sup>xxxii</sup>

Note that wildlife markets similar to Belén exist elsewhere in the Amazon as well, particularly in Brazil and Bolivia, amplifying the risk to Amazonian wildlife.<sup>xxxiii</sup> Vendors' reports of increasing demand for wildlife in these markets, coupled with vendors' willingness to advise buyers on the best way to smuggle their illegal purchases through airport screening, strongly suggest that wildlife trafficking by air in South America is under-acknowledged or under-reported by South American authorities.

## FIGURE 4

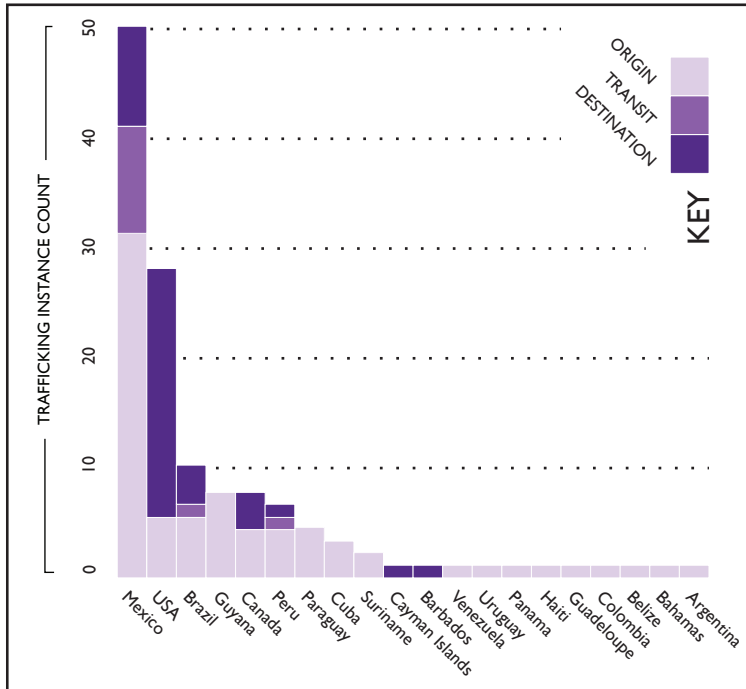


Figure 4. Country-level flight route information for American countries with one or more trafficking instance (2016 – 2018)

Only trafficking instances for which flight route information exists were included. The data is split by country, rather than airport, to account for transit information reported at the country level.

## FIGURE 5

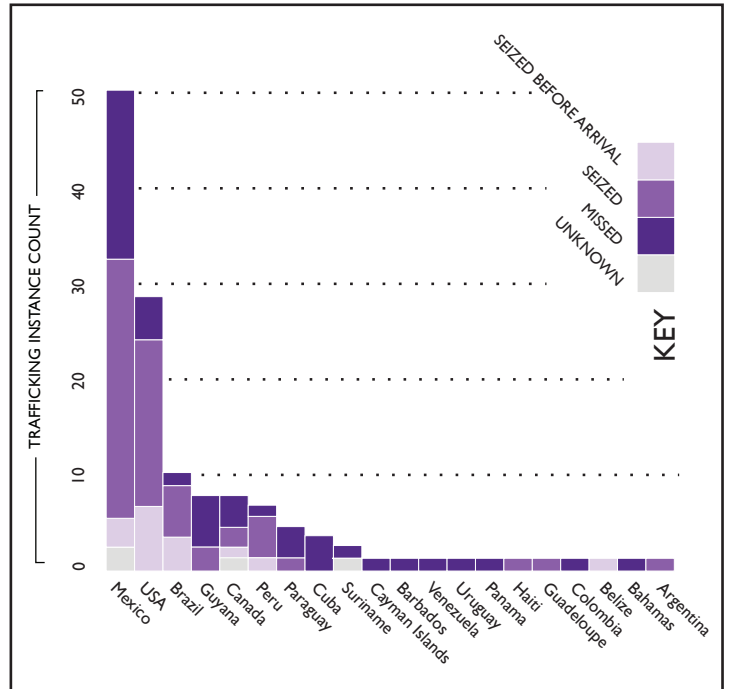


Figure 5. Point of seizure within the supply chain by American country (2016 – 2018)



Wildlife trafficking by air in the Americas appears to be thinly spread across many American countries, really concentrating in only two: Mexico and the United States.

### Prominence of Mexico

Mexico counted far more wildlife trafficking instances between 2016 and 2018 than any other American country according to the C4ADS Air Seizure Database, with more origin instances alone than the United States' total trafficking instance count. A number of Mexican species are in high demand in other world regions, such as totoaba (see **New Flight Routes, Organized Crime, & Totoaba** in *In Plane Sight*), sea cucumbers, and various bird species (see **Spain & Bird Trafficking** in *In Plane Sight*). Totoaba in particular is in demand in China, where one totoaba bladder can sell for as much as US\$250,000.<sup>xxxiv</sup> Totoaba seizures appear to be increasing; although Mexican officials made only one known totoaba seizure in an airport in 2017, they made eight in 2018, reflecting either an increase in trafficking activity, enforcement awareness, or public seizure reporting. Of those nine total seizures, four both originated in and transited through Mexico, usually Mexico City, before flying internationally.

Mexico also experiences an unusually high rate of domestic wildlife trafficking, with traffickers smuggling in-demand species from one Mexican airport, through another Mexican airport, to a third Mexican airport. For example, in February 2018, Mexican officials discovered multiple shipments of reptiles and tarantulas from Monterrey and Nuevo Leon on the Estafeta parcel platform in San Luis Potosí Airport.<sup>xxxv</sup> The packages contained 18 animals (some protected native Mexican species and some protected foreign species), and were addressed to locations in seven different Mexican cities.<sup>3</sup> The diversity of species involved and the wide array of intended destinations suggest that these animals may have been ordered from a reptile trader or traders in Monterrey and Nuevo Leon. Exotic mammal seizures (e.g. tigers and lions) within Mexico also suggested the involvement of live animal traders, although mammal shipments within Mexico often lacked detailed destination information, likely to protect buyers.

### The United States as a destination country

The United States is one of only three countries in Figure 4 that were primarily destination points for wildlife trafficking instances. Between 2016 and 2018, the United States was the intended destination for a variety of ivory (two), reptile (seven), bird (12), marine species (four), and mammal (two) seizures, according to the C4ADS Air Seizure Database. The ivory, marine species, and mammal trafficking instances generally involved multiple different types of wildlife products (e.g. ivory and coral) on the way to specific recipients or small demand markets. The bird and reptile instances, in contrast, usually involved live animals intended either for the pet trade or for finch singing competitions in New York (see **Hair Curlers from Guyana** in *Flying*

## IMAGE 10



Image 10. Birds smuggled in plastic hair curlers hidden in a fanny pack and “in the groin area” of a trafficker flying between Havana, Cuba and Miami in the United States. Finches are also smuggled into the United States in hair curlers. Source: US Customs and Border Protection

*Under the Radar* (2017)).

Although the United States was primarily a destination country, it was also occasionally an origin point. A number of the trafficking instances associated with the United States in the C4ADS Air Seizure Database appeared to involve individual animals smuggled by traders to be sold as pets elsewhere. Other trafficking instances included 962 whitetip shark fins found in the luggage of Indonesian fishermen flying home from Hawaii, and a shipment of dried totoaba bladders flying from Los Angeles to Hong Kong.<sup>xxxvi</sup> In the latter example, the totoaba bladders were almost certainly dried near the US-Mexico border and then driven to Los Angeles, perhaps to avoid officials more familiar with totoaba trafficking in San Diego and northwestern Mexico. trafficking in San Diego and northwestern Mexico.

### Guyanese bird trafficking

Despite its small size, Guyana is the second-most common origin country in Figure 4. All of Guyana's eight trafficking instances involved finches ultimately destined for New York. Only two of the eight were stopped in Guyana, even though flights from Guyana to New York are known to be high-risk for finch trafficking attempts.<sup>4</sup>

Finch trafficking between Guyana and New York occurs frequently enough that it accounted for 50% of the bird trafficking instances destined for the United States in the C4ADS Air Seizure Database between 2016 and 2018. Recent reporting also suggested that these trafficking instances account for only a few of the finch seizures made by US enforcement authorities over the past few years; in December 2018, CBP officers stated that they had made at least seven finch seizures in JFK Airport in 2018, totaling 184 finches.<sup>xxxvii</sup> In comparison, the C4ADS Air Seizure Database counts four seizures in 2018 totaling 124 birds.

<sup>3</sup>The shipments included nine ball pythons (CITES Appendix II), an Egyptian sand boa (CITES Appendix II), a Cooke's tree boa (CITES Appendix II), a Meller's chameleon (CITES Appendix II), a crested gecko, a red-eared slider turtle, an alligator snapping turtle (CITES Appendix III), and a spiny lizard, as well as two tarantulas. The animals had arrived from Monterrey and Nuevo Leon and were addressed to Queretaro, Guanajuato, Sinaloa, Mexico City, Quintana Roo, Jalisco, and Hidalgo.

<sup>4</sup>See *Hair Curlers from Guyana* in *In Plane Sight* (2017) for more information.

# SNAKE ON A PLANE

## Low seizure rates

Many American countries missed most of the known wildlife trafficking instances passing through their airports (e.g. Guyana, Paraguay, Cuba, Venezuela, Panama, Uruguay, Guadeloupe, Haiti, Belize, and the Bahamas).

In July 2018, a Transportation Security Administration (TSA) officer in Miami Airport noticed an “organic mass” inside a computer tower in the suitcase of a female passenger destined for Barbados. Further inspection by a TSA bomb expert revealed the “mass” to be a ball python, prompting TSA spokesperson Sari Koshetz to remark that, “...the interception [of the ball python] did prevent a possible wildlife threat on an aircraft. Animals of many species have been known to escape and chew through wires with fatal results.”<sup>xxxviii</sup> Koshetz’s comment exposed the dangers associated with having a wild animal of any species loose in the cargo hold during flight.



Image 11. A ball python hidden in a computer tower. Source: US TSA

# THE CAYMAN ISLANDS & THE ILLEGAL WILDLIFE TRADE

A 2017 seizure revealed a possible small-scale wildlife trafficking operation illegally importing animals from other countries into the Cayman Islands. Note that island nations are particularly vulnerable to invasive species since native wildlife are naturally isolated, and have not evolved to compete with many other animals.

In June 2017, officials in Owen Roberts Airport in the Cayman Islands confiscated a sugar glider that had escaped from a passenger’s carry-on bag on Cayman Airways flight KX 107 from Miami.<sup>xxxix</sup> Two people traveling with the sugar glider were arrested.

During a subsequent investigation, customs officials discovered other exotic animals, including snakes and a lizard, at a couple of properties associated with the passengers. They also arrested a third individual on drug-related charges at one of the properties. One of the three suspects was allegedly a close relative of a

member serving in the Legislative Assembly of the Cayman Islands at the time.<sup>xl</sup>

While sugar gliders are legal to own in Florida, anyone attempting to import one into the Cayman Islands would, at a minimum, need a permit from the Department of Agriculture. After the seizure, Frederic Burton, the Department of Environment’s terrestrial resources manager, expressed concern about the incident, stating, “Escaped pets are the start of so many environmental nightmares. ... [Sugar gliders are] a tropical/subtropical species, from the opposite hemisphere. [They were] introduced from Australia to Tasmania, so [are] capable of being invasive and can deal with a wide range of climates.”<sup>xli</sup>

FIGURE 6

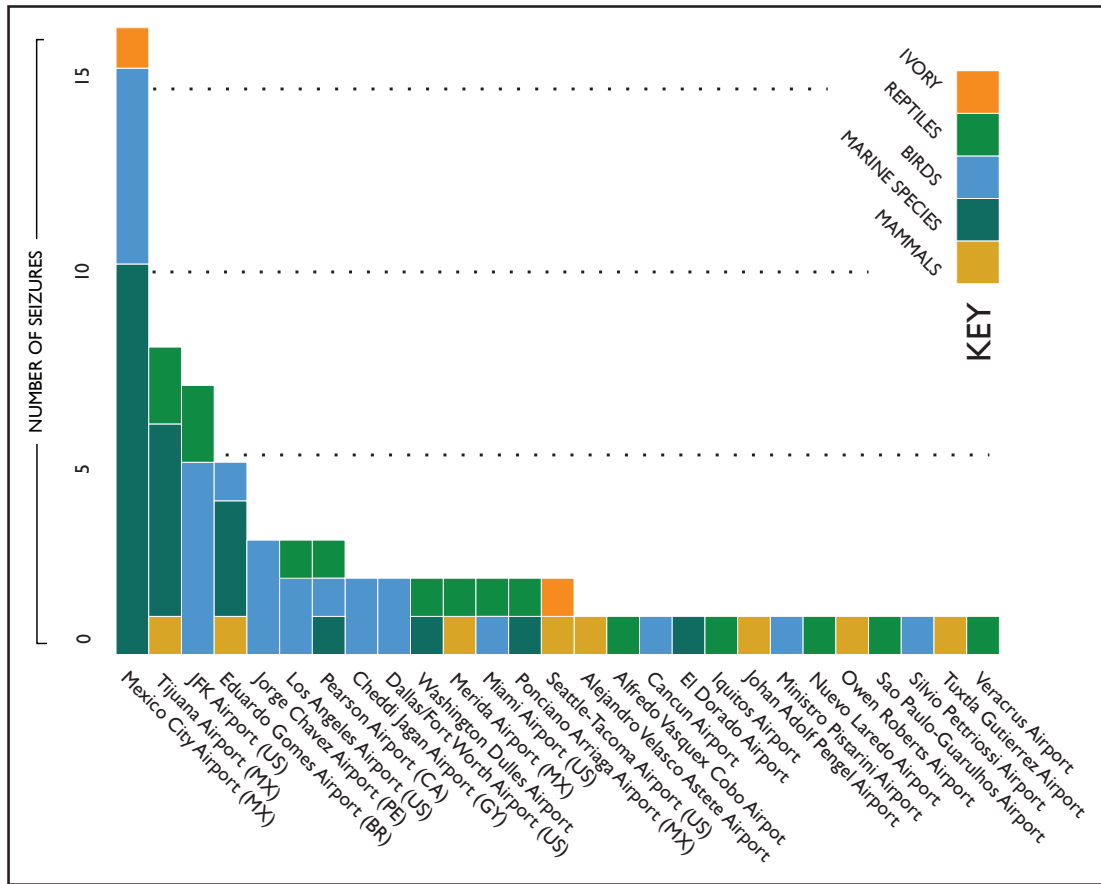


Figure 6. Airport seizure count for American airports (2016 – 2018)

Similar to Figures 2, 4, and 5, the American airport seizure count emphasizes how widely and thinly spread known wildlife seizures are in the Americas, with 48% of American airports in the C4ADS Air Seizure Database counting only one wildlife seizure.

### Many Mexican and U.S. airports

Although known wildlife seizures in the Americas were widely distributed across a variety of airports between 2016 and 2018, seizures did concentrate in two countries: Mexico and the United States. Mexico counted 33 seizures in eight airports – Mexico City Airport, Tijuana Airport, Merida Airport, Ponciano Arriaga Airport, Cancun Airport, Nuevo Laredo Airport, Tuxtla Gutierrez Airport, and Veracruz Airport – between 2016 and 2018 in part because a number of Mexican airports offer international flights to Europe and Asia, and in part because domestic wildlife trafficking in Mexico frequently exploits the air transport sector. This means that both international and smaller, regional airports in the country are at risk of exploitation.

Although the United States counted fewer seizures (20 in

total) than Mexico, those seizures were spread throughout six different airports: John F. Kennedy Airport, Los Angeles Airport, Dallas/Fort Worth Airport, Dulles Airport, Miami Airport, and Seattle-Tacoma Airport. All of these airports are significant international hubs connecting travelers to Asia, Europe, Africa, and Latin America.

### Effects of totoaba trade are visible

The prevalence of the totoaba trade is visible in the high seizure counts of Mexico City Airport and Tijuana Airport. Both airports counted more known wildlife seizures between 2016 and 2018 than any other airport in the Americas according to the C4ADS Air Seizure Database, and both seized marine species more frequently than any other type of wildlife, with a combined 16 marine species seizures out of 26 total seizures. Tijuana Airport's significance is likely due to a nonstop Aeromexico flight from Tijuana to Shanghai, which is particularly vulnerable to exploitation by totoaba traffickers, as well as its status as the largest international airport in Baja California (see **New Flight Routes, Organized Crime, & Totoaba in In Plane Sight**).

SUPPLY CHAINS NARROW AS THEY REACH THEIR DESTINATION



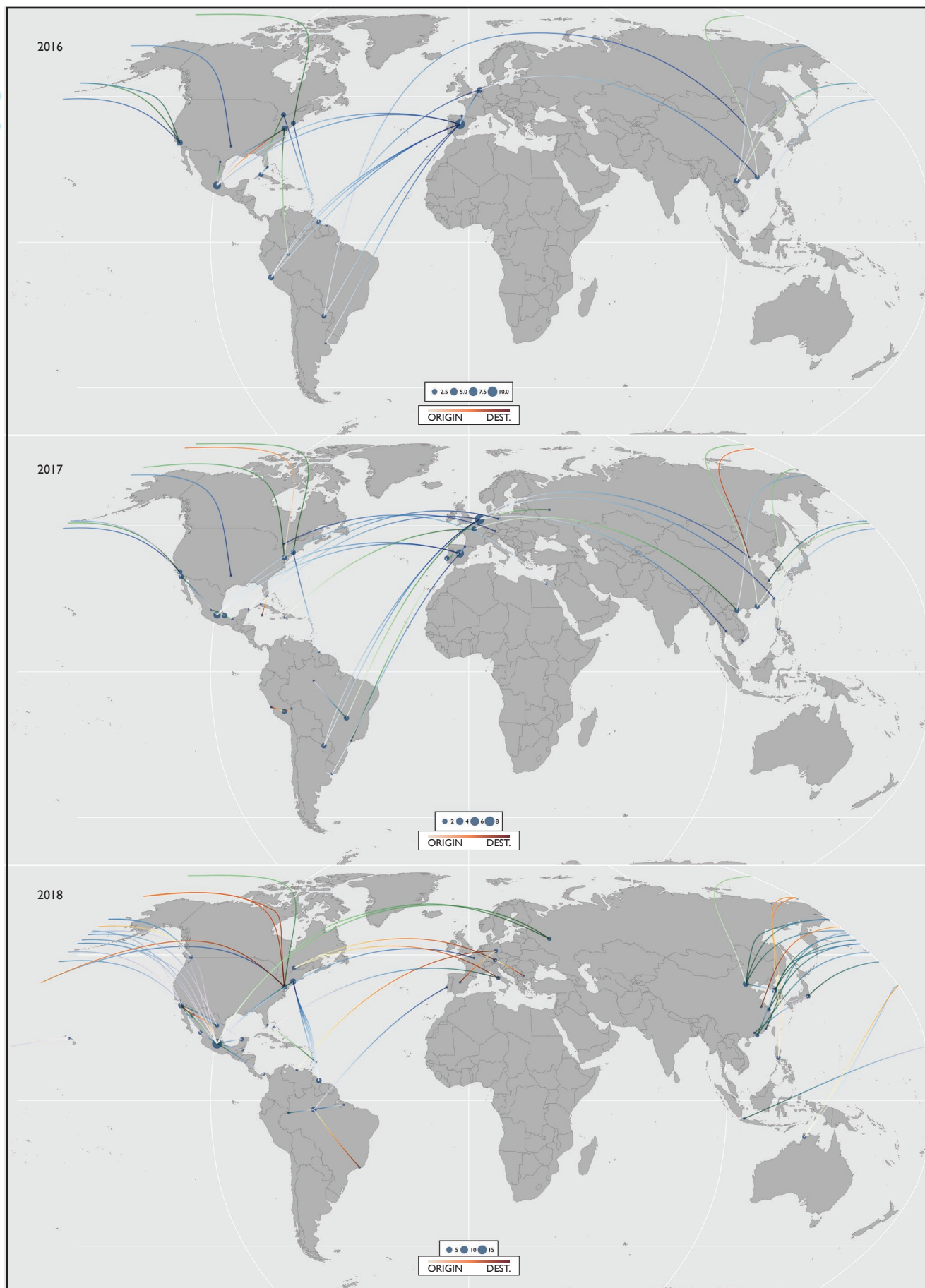


Figure 7. American air trafficking routes recorded in the C4ADS Air Seizure Database (2016 – 2018)

Circle size indicates the number of flights carrying illicit wildlife that departed from or arrived in a particular city. Capital cities are used when specific airports are unavailable.

# BRAZILIAN AQUARIUM FISH

Two large seizures of aquarium fish in Manaus, Brazil in 2017 and 2018 suggested that aquarium fish trafficking may be more prevalent than it seems, and highlighted a frequent smuggling route between Brazil and Colombia.

The first seizure took place in October 2017 in Eduardo Gomes Airport in Manaus, when Brazilian officials discovered Jhon Batalha Coelho and Leandro Martins dos Santos with 672 live fish in plastic bags in three suitcases.<sup>xlii</sup> At least two of the species seized were not known to science; one species (zebra pleco catfish) was endangered and listed on CITES Appendix III; and a number of the fish, including two stingrays, later died as a result of injuries sustained during the trafficking attempt. All of the species had come from the Xingu River Basin.



Image 12. Three suitcases carrying 672 live aquarium fish in Manaus, Brazil in October 2017. Source: Brazilian Federal Police

Coelho and dos Santos were trying to fly to Tabatinga, Brazil, an Amazonian city on the border with Peru and Colombia. Seizure reports at the time stated that the men likely intended to cross the border into Colombia, “today the main smuggling route for Brazilian ornamental fish.”<sup>xliii</sup> They were fined roughly

US\$375,000 each and were charged with environmental crimes and attempted smuggling.

Less than a year later, Brazilian Federal Police discovered another 550 aquarium fish, some of which were endangered species, in Eduardo Gomes Airport in Manaus.<sup>xliv</sup> Similar to the first seizure, the fish had been hidden in plastic bags in two suitcases. Brazilian authorities arrested two traffickers traveling with the fish who were attempting to fly to Tabatinga. Both suspects were charged with environmental crimes.



Image 13. Two suitcases carrying 550 live aquarium fish in Manaus, Brazil in July 2018. Source: Brazilian Federal Police

Both seizures involved a large number of aquarium fish hidden in plastic bags placed within suitcases and destined for Tabatinga, on the border with Colombia. Both were also accompanied by two traffickers. These similarities suggest that these seizures may be evidence of a network of organized traffickers moving aquarium fish from the Amazon to a demand market in Colombia, which has “a large market in Japan and other rich countries [sic].” At the very least, two similar seizures involving so many fish within one year reveal a common trafficking route and represent a threat to the survival of endangered fish species in Brazil.

A totoaba seizure in the summer of 2018 did not exhibit any of the usual characteristics of totoaba trafficking, suggesting that traffickers may be shifting to new methods to try to avoid attentive enforcement officials in certain airports.

On August 8, 2018, Mexican publication Excelsior reported the seizure of 16 dried totoaba swim bladders found in a postal package in Mexico City Airport. The bladders were discovered by federal authorities among a shipment of fish products—including 6.25 kg of fish bladders from an unidentified species—originating from Hermosillo, Mexico and bound for New York.<sup>xlv</sup> With a combined weight of 1.27 kg, the seized totoaba bladders had an estimated total value between US\$25,400 and US\$101,600.<sup>xlvi</sup>

The seizure was unusual for several reasons. First, most totoaba trafficking attempts fly out of Baja California on the way to China, the primary demand market for the bladders. This shipment left from Hermosillo in Sonora, the Mexican state to the east of Baja California, and was destined for New York, which has no known demand market for totoaba bladders. The unusual origin location of the shipment may reflect an attempt to evade enforcement authorities in Baja Californian airports that are familiar with totoaba. New York’s appearance is particularly unexpected, but could suggest that JFK Airport is an unusual transit point for totoaba. Second, totoaba bladders are generally moved in checked luggage, but this shipment



Image 14. Fish swim bladders from an unidentified species discovered with totoaba bladders. Source: Ernesto Méndez

was discovered in a postal mail parcel. This change may indicate an attempt to switch methods to avoid checked luggage screening and circumvent Mexican officials familiar with totoaba trafficking patterns. This possibility seems fairly likely, given that an earlier totoaba shipment discovered in Mexico City Airport in July 2018 was also found in a mail parcel.

# UNUSUAL ROUTES



The American routes maps both emphasize the prevalence of intra-regional wildlife trafficking in the Americas and highlight the importance of Europe and Asia to American trafficking routes.<sup>5</sup>

### ***Increase in known flight routes in 2018***

There appeared to be a relatively substantial increase in American trafficking instances in 2018, primarily due to an increase in marine species and mammal seizures. Marine species trafficking instances grew from three in 2016, to four in 2017, to 24 in 2018, usually involving either totoaba swim bladders or sea cucumbers. Mammal trafficking instances grew more modestly, from none in 2016, to four in 2017, to 11 in 2018.

### ***Bird trafficking to Europe***

One of the clearest trends visible in the routes maps involved bird trafficking instances moving from the Americas to Europe, usually Spain, in 2016 and 2017. The 2018 routes map reveals an apparent decline in bird trafficking instances destined for Spain, which may be the result of a late 2017 operation led by Spanish authorities to dismantle a bird trafficking network based in Álava, Spain (see **Spain & Bird Trafficking** in *In Plane Sight*). Still, at least two bird trafficking instances left Mexico and Brazil for France and Portugal in 2018, one of which seemed somewhat similar to the earlier trafficking instances associated with the Spanish syndicate (e.g. wide variety of bird species, birds kept in boxes or cages inside checked luggage, accompanied by one trafficker).<sup>xlvii</sup>

### ***Europe cedes to Asia as most common transit and destination point for American trafficking instances***

In 2016 and 2017, most documented American wildlife trafficking instances leaving the Americas either flew directly to European destinations, or flew through a European airport before flying to Asia or another European country. But in 2018 that trend seemed to reverse; wildlife trafficking instances destined for or transiting through Europe seemed to decrease, while trafficking instances destined for or transiting through Asia seemed to increase significantly.

### ***Domestic flights in Mexico, Brazil, and Peru***

Domestic wildlife trafficking by air is comparatively common in the Americas according to the C4ADS Air Seizure Database, with domestic flight routes most clearly visible in Mexico, Brazil, and Peru in 2017 and 2018. Mexico counted the most domestic flight routes in the Americas by far. As discussed previously, Mexican domestic trafficking attempts generally involved either totoaba passing through a second Mexican airport before flying to Asia, or domestic demand for exotic live animals, such as reptiles, birds, or big cats (see **Tigers in Mexico**).

Domestic wildlife trafficking by air in Brazil usually involved traffickers moving live animals, such as birds, turtles, or aquarium fish, from remote areas of the Amazon to urban areas, either to sell them in

## IMAGE 15



Image 15. A male passenger found with 32 eggs wrapped around his torso in Eduardo Gomes Airport in Manaus. Source: Brazilian Federal

local markets or to connect to an international flight route in order to export them. For example, in May 2018, Brazilian officials in Eduardo Gomes Airport in Manaus discovered 32 eggs placed in stockings and wrapped around a male passenger's torso.<sup>xlviii</sup> He had arrived in Manaus from Belém (known as the gateway to the Amazon River), and was attempting to fly to Lisbon, Portugal when he was discovered.

The C4ADS Air Seizure Database contains only one domestic Peruvian trafficking instance between 2016 and 2018, which may suggest that this is an overlooked type of trafficking in Peru given known wildlife markets in the country (see **Belén Market**). In April 2017, Peruvian officials discovered a baby capuchin monkey in the luggage of a female passenger connecting through Alejandro Velasco Astete in Cusco on her way to Lima.<sup>xlix</sup> She had just arrived from Padre Aldamiz Airport in Puerto Maldonado, Peru.

## IMAGE 16



Image 16. A baby capuchin monkey discovered being smuggled through Cusco, Peru. Source: SERFOR

<sup>5</sup>Although the C4ADS Air Seizure Database contains few wildlife trafficking instances flying between the Americas and Africa or the Middle East, C4ADS analyzed more extensive wildlife seizure data (2009 – 2016) from the US Fish and Wildlife Service's Law Enforcement Management Information System (LEMIS) for ROUTES's 2018 report, *In Plane Sight*. LEMIS import data (seizures of wildlife imported into the United States) in general support the trend visible in the American routes maps – comparatively few wildlife trafficking instances from Africa and the Middle East were stopped on arrival in the United States (Nigeria was the only African country listed among the top countries for imported wildlife by seizure count). However, LEMIS did count a substantial number of wildlife trafficking instances flying between Africa, the Middle East, and the Americas, so much so that Saudi Arabia, Qatar, the UAE, Kuwait, and Bahrain all appeared as common destination countries for wildlife trafficking attempts seized by US officials on departure. See **Appendix II: FWS LEMIS Seizure Data (2009 – 2016)** in *In Plane Sight* (2018) for more information.



## FIGURE 8

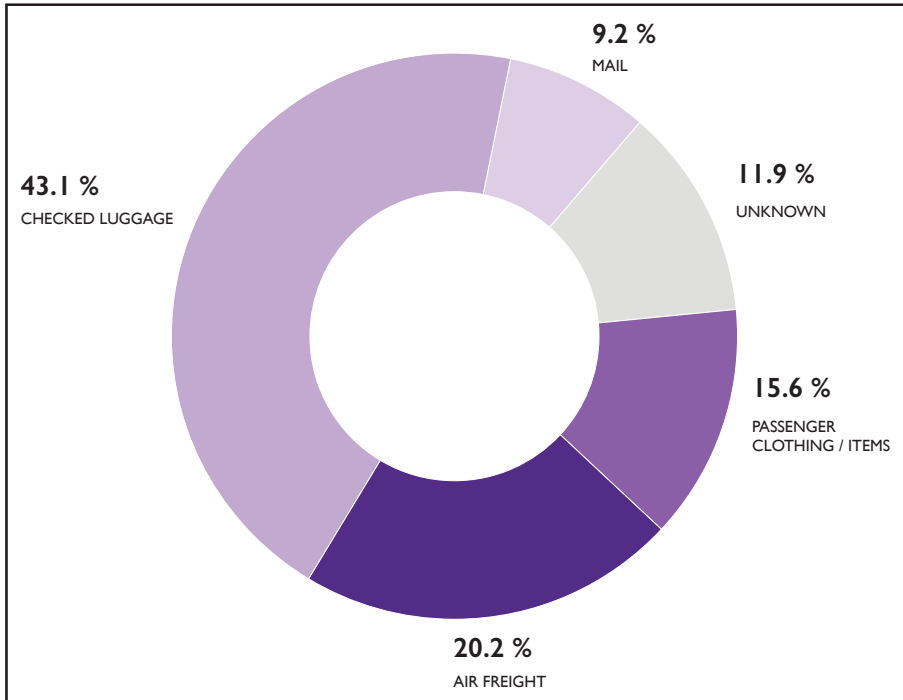


Figure 8. Transport methods for American trafficking instances in the air transport sector (2016 – 2018)

As in other world regions, checked luggage was the most common transport method used by wildlife traffickers in the Americas between 2016 and 2018, accounting for just under 50% of American wildlife trafficking instances (43%).

### **Unusually high number of air freight instances**

Generally, regions that experience more live animal trafficking activity see more trafficking instances moved in checked luggage and in passengers' clothing or carry-on items than in air freight. Even though wildlife traffickers in the Americas relied on air freight slightly less often than traffickers in common wildlife product regions Africa, Asia, or the Middle East between 2016 and 2018, American trafficking instances were still moved in air freight roughly a quarter of the time (20% compared to Asia's 21%).

Most of the American wildlife trafficking instances moved in air freight between 2016 and 2018 appeared to be linked to Mexico, and generally contained sea cucumbers likely destined for consumption or reptiles destined for homes in Mexico or the United States. Other Mexican air freight instances involved big cat cubs and flamingos sent with fraudulent and incomplete documentation.

### **High number of mail instances**

Although mail seizures appeared to be relatively infrequent in Figure 8, 10% of American wildlife trafficking instances were discovered in mail shipments. This could reflect more attentive and effective screening practices for mail shipments in the Americas.

American mail trafficking instances generally involved wildlife products, often mammal skulls or skin shipped from American countries to Europe, or totoaba bladders hidden in mail shipments. The use of mail as a transport method for totoaba is slightly unusual, however, since dried totoaba bladders moved by air are usually found hidden within checked bags. The appearance of totoaba trafficking instances sent via mail in 2018 could reflect either an attempt by traffickers to circumvent enforcement, or enforcement proactively searching mail shipments in response to an apparent increase in trafficking activity.

TRANSPORT METHOD VARIES BY SPECIES

WILDLIFE TRAFFICKING BY MAIL LIKELY UNDERREPRESENTED

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# CONCLUSION & RECOMMENDATIONS

In *Runway to Extinction*, C4ADS finds the illegal wildlife trade to be truly global in scope, encompassing more and more locations as each year goes by. Traffickers operating in each of the world regions covered by this report – Africa, the Americas, Asia, Europe, the Middle East, and Oceania – relied repeatedly on the same or similar trafficking methods and flight routes, often exploiting the same vulnerabilities within the air transport sector as traffickers of other illicit goods. The greatest variation in wildlife trafficking occurred not necessarily between regions, but between the species or wildlife product trafficked; the specific methods used and routes taken by wildlife traffickers were heavily dependent on wildlife type (e.g. Guyanese finches are always smuggled in hair curlers from Guyana to New York; pig-nosed turtles are generally smuggled in huge quantities, declared as a marine species, and flown from a regional Indonesian airport to Jakarta before flying to China).

Although wildlife trafficking bleeds into countries on every continent other than Antarctica, China's role in the illegal wildlife trade (likely driven by high demand for wildlife, but also by fairly effective enforcement, good reporting standards, and sheer population size) completely eclipsed the involvement of any other country, and seemed to be increasing. Relatedly, wildlife product processing seems to be moving closer and closer to source regions to reduce the chances of discovery in transit, suggesting that seizures of smaller quantities of processed ivory, rhino horn, and marine species will increase in the future. Finally, wildlife trafficking can be roughly divided into two groups: wildlife product trafficking (ivory, rhino horn, pangolins and pangolin products), which generally flows from Africa to Asia in a broad supply chain that narrows substantially as it approaches its end; and live animal trafficking (reptiles, birds, marine species, and mammals), which is widely dispersed throughout the world, without a clearly definable supply chain.

As in *Flying Under the Radar* and *In Plane Sight*, *Runway to Extinction* provides broadly applicable recommendations<sup>1</sup> that, if implemented correctly, could help to reduce wildlife trafficking throughout the air transport system as a whole. Most of last year's recommendations are still applicable this year, and primarily involve awareness, training, enforcement procedures, seizure reporting, and prevention efforts. The recommendations are grouped below by topic, and are meant to be applicable to enforcement, industry, intergovernmental organizations, and nongovernmental organizations. For more specific recommendations regarding a certain species or region, please contact C4ADS or the broader ROUTES Partnership.

<sup>1</sup> More specific recommendations would require knowledge of each country's current seizure reporting protocols and awareness raising activities, and so were outside the scope of this analysis.

For agencies and organizations interested in taking a more proactive approach to combatting wildlife trafficking, we have included examples, possible paths forward, and organizations to contact wherever possible in Appendix III. The implementation of many of the recommendations can also be supported by the resources developed under the ROUTES Partnership and work being undertaken by other groups on wildlife trafficking (e.g. United for Wildlife and the US Wildlife Trafficking Alliance).

Each recommendation is marked with the following symbols to illustrate its intended audience:













Regardless of each recommendation's intended audience, note that communication and collaboration are needed, at a minimum, between enforcement and industry to ensure that wildlife trafficking through the air transport sector is addressed comprehensively and strategically. In addition, many of the trafficking methods identified in both *Flying Under the Radar* and *In Plane Sight* are utilized by traffickers of all types. As a result, implementation of the following recommendations will likely improve enforcement success not just for the illegal wildlife trade, but for other crime types as well.








C4ADS recommends the following steps be taken to improve enforcement success rates and reduce wildlife trafficking by air.

# RECOMMENDATIONS








## AWARENESS

1. Increase awareness among air passengers, aviation staff, freight forwarders, shippers, and enforcement officials.	   
2. Adopt or create a pamphlet or tool tailored to each country to help customs and enforcement officials, as well as relevant industry personnel, identify restricted species and wildlife products commonly trafficked through their territory.	   
3. Ensure public reporting mechanisms are in place and well-known so passengers can report suspected wildlife trafficking instances.	 

## TRAINING

4. Provide training on red flag indicators associated with wildlife traffickers and shipments. Ensure that follow-up trainings are provided as necessary to support uptake.	   
5. Incorporate training for airline staff on how to safely handle trafficked live or dead animals after discovery into existing training programs. Create and provide “forensic protection protocols” training to preserve evidence for trial.	  

## ENFORCEMENT

6. Develop clear escalation procedures upon discovery of potential illegal activity.	 
7. Engage with the private sector to ensure that aviation personnel are aware of the types of information needed to follow up on reports of wildlife trafficking. Provide feedback to industry and the public on the outcomes of submitted tips.	 
8. Develop post-seizure procedures to safely and securely store wildlife products or ensure the proper care of trafficked live animals. Develop procedures to track seized live animals and wildlife products.	 
9. Dedicate additional resources to combatting the illegal wildlife trade in common hub airports exploited by wildlife traffickers.	 
10. Develop or enhance customs screening procedures for transit flights.	 
11. Customs and enforcement should be aware of flight routes opening through high-risk areas.	 
12. Develop and maintain a comprehensive internal database of entities previously involved in wildlife seizures.	
13. Develop a system to test counter-wildlife trafficking protocols.	
14. Improve wildlife customs screening requirements for postal mail shipments. Ensure mail seizures are reported to the same degree as passenger, checked luggage, or air freight seizures.	 
15. Increase cooperation with other customs and enforcement agencies along high-risk supply chains. Inform foreign agencies of seizures on flights that have left or are destined for their countries.	

# RECOMMENDATIONS

## SEIZURE REPORTING

16. Store collected seizure information in one centralized database.



17. Develop a procedure to publicly report seizure information. Update seizure press releases with prosecution results.



## POLICY

18. National laws should, at a minimum, enforce CITES regulations and regulate the domestic trade in non-native species. Penalties for wildlife trafficking should be raised until they are sufficiently deterrent.



## DETECTION

19. Pursue shift towards electronic paperwork for air freight and updated technology for customs screening. Expand advanced cargo and passenger information systems to include red flags for the illegal wildlife trade. Incorporate CITES e-permits in e-documentation systems.





