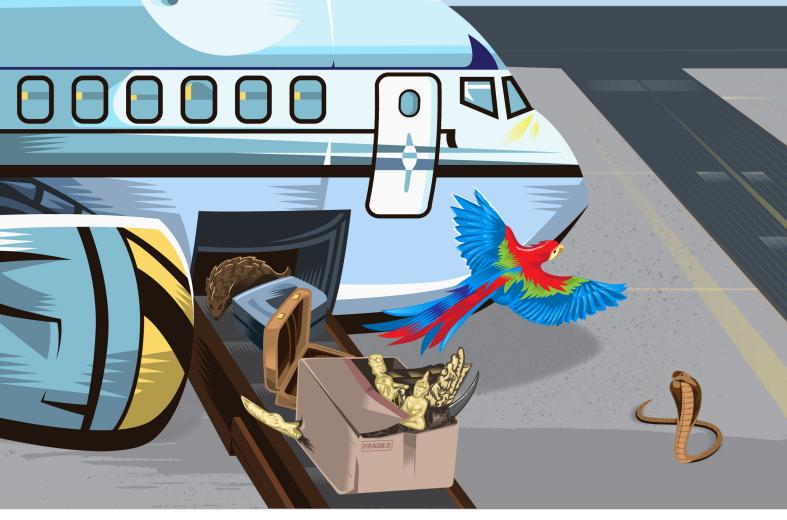
A SUMMARY OF

N PLANE SIGHT

Wildlife Trafficking in the Air Transport Sector























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 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



INTRODUCTION

Wildlife seizures are the clearest outward sign of strengths and weaknesses in air transport. If carefully collected, stored, and analyzed, wildlife seizure data can reveal a great deal about wildlife trafficking trends, routes, and methods, including how wildlife networks seem to respond to different enforcement and market pressures.

Wildlife traffickers are benefiting from an increasingly interconnected world. As marketplaces have become progressively more international, wildlife trafficking networks have been able to exploit the advance of technology, profiting off the development of the international financial system and increasingly intertwined transportation networks. By 2016, environmental crime had grown into a multi-billion-dollar industry, worth as much as \$91 to \$258 billion annually, with wildlife crime specifically making up \$7 to \$23 billion of the total.

But while wildlife criminal networks were learning to take advantage of finance and transportation networks, they made a mistake: they became dependent on them. Wildlife criminal groups now rely on international systems of trade, finance, and transport to make a profit, forcing them to emerge from behind their carefully constructed disguises to engage with the lawful, regulated world, thus exposing themselves to discovery.

Over the past year, C4ADS analysts, as part of the USAID Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES) Partnership, have continued to collect ivory, rhino horn, reptile, and bird seizures, and have developed three new datasets covering pangolin, marine products, and mammal seizures. Together, these seven categories account for about 81% of known trafficked wildlife, according to the United Nations Office on Drugs and Crime (UNODC). Although seizure data can present a slightly inaccurate view of wildlife trafficking, if presented with the appropriate caveats, it provides the best available picture of overall trafficking activity, and can be used to direct future anti-trafficking efforts.

In Plane Sight examines wildlife trafficking through the air transport sector by analyzing nine years' worth of open source seizure information, and is intended to provide an update on wildlife trafficking activity in airports since the 2017report, Flying Under the Radar.

Wildlife Trafficking in the Air Transport Sector

Between 2009 and 2017

136 countries had at least one instance 4x: Recorded seizures of wildlife of wildlife trafficking in their airports

have more than quadrupled









Transit Africa (East) Middle East Europe

Destination Asia (East, Southeast)

RHINO HORN



Origin Africa (Southern) Transit Africa (East) Middle East Asia (Southeas Europe

Destination

REPTILE



Origin Asia (South, Southeast) Africa (Madagascar) Americas (North) Transit

Asia (South, Southeast) Destination

Asia (South, East, Southeast) Middle East, Americas (North) Europe

BIRD



Origin Americas (South, North) Asia (South, Southeast) Europe (including Russia)

Transit Americas (South) Middle East Europe

Destination Middle East Americas (South, North) Europe (including Russia) Asia (Southeast) Oceania (Australia)

PANGOLIN



Origin Africa (West) Asia (South, Southeast) Transit

Europe Middle East Africa (East) Destination

Asia (East, Southeast)

MARINE PRODUCTS:



Origin

Americas (South, North) Europe Africa (West, Southern) Asia (Southeast)

Transit Furone

Destination



Origin

Africa (West, Southern, East) Asia (Southeast)

Transit

Europe Middle East Africa (East)

Destinatio

Americas (North, South) Europe (Including Russia) Middle East Asia (South, East, Southeast)

Air Transport Sector

One of the drivers behind wildlife trafficking's substantial success is also one of its biggest weaknesses—its reliance on the world's increasingly interconnected transport supply chains.

Traffickers of all types are adept at exploiting lagging technology, rampant or latent corruption, capacity problems, and other issues within airports to move contraband. They often target specific airports or flight routes, choosing certain airports for their location, size, connecting flight routes, screening procedures, and perceived ability to identify contraband, amongst other things. Large international ports with lax screening procedures for trafficked goods, but many connecting flights, are at the highest risk; these airports present traffickers with both plentiful flight options and a low risk of interdiction. Of these high-risk airports, those in the process of expansion are the most vulnerable.

Wildlife traffickers also benefit from current customs and enforcement screening procedures and priorities. For example, screening on departure and in transit is primarily conducted for security purposes, and is not focused on identifying trafficking. Screening on arrival is designed to uncover trafficking, but is conducted by customs agencies, who are primarily focused on revenue and agricultural disease protection—seizing wildlife is not a top priority. This set-up helps traffickers of wildlife and other goods evade detection by skirting through screening checkpoints under the radar.



by known air trafficking instances

the number of times illegal wildlife moved through an airport in a country, regardless of whether it was seized:

- China **Thailand** Vietnam
 - Indonesia
- Kenya
- India
- **South Africa**
 - Malaysia



CASE STUDY: Wildlife Trafficking Connection to Drugs, Arms, & Counterfeit Goods



Rhino horn seized in the Czech Republic in 2012.

Beginning in 2010, a series of rhino horn thefts and seizures revealed the Czech Republic to be an important transit point for the illicit rhino horn trade from South Africa to East and Southeast Asia.

After several rhino horn shipments sent directly from South Africa to Vietnam in May 2011 were seized in South Africa, rhino horn shipments began routing through the Czech Republic. A few months later in November 2011, the Czech Environmental Inspectorate (CEI) acknowledged that the Czech Republic was emerging as a rhino horn transit point, sourced almost entirely from South Africa and destined for Vietnam.

Of particular note over the course of CEI's investigations is the fact that the network behind these rhino horn shipments also engaged in the illicit trade of "tiger bones, ivory, and drugs (methamphetamine etc.)." As part of the seizure investigations and in searching identified properties linked to the Vietnamese facilitators, investigators found "unmarked cigarettes, bullets to weapons, counterfeit watches, handbags and wallets, and the entire forgery workshop with embroidery machines and different patterns of protected brands." The network's involvement in multiple types of crime demonstrates the versatility of wildlife trafficking networks, which rely on a few proven trafficking methods to move illicit products of many types.

Associated Risks

Wildlife trafficking activity, once believed to only negatively impact the environment, has also increasingly been linked to security and health concerns. As the illegal wildlife trade has grown in prominence and in value, the high profits and low risks associated with engaging in wildlife crime have attracted the attention of other criminal networks. Furthermore, wildlife traffickers rely on the same weaknesses and loopholes within airports that are exploited by criminals of all types. Wildlife seizures can therefore be seen as a glimpse into trafficking activity as a whole—a "canary in the coal mine" for vulnerable airports.

Wildlife seizures can be seen as a glimpse into trafficking activity as a whole—a "canary in the coal mine" for vulnerable airports.

Short travel time, diverse flight routes, and the increasing prevalence of air travel also mean that transferrable diseases carried by wildlife can move quickly between countries, potentially exposing thousands of people around the world to infection with deadly diseases in a short timeframe. Many different species can carry diseases that can be passed on to humans; the 2014 Ebola epidemic, for example, is believed to have begun after a baby boy in Guinea came in contact with infected wild animals, most likely bats in his backyard. Diseases carried by primates, rats, and other species are also highly transmissible to humans; primates can transmit diseases like HIV, Hepatitis B, and tuberculosis, while rats and fleas are famously the origin of the bubonic plague.

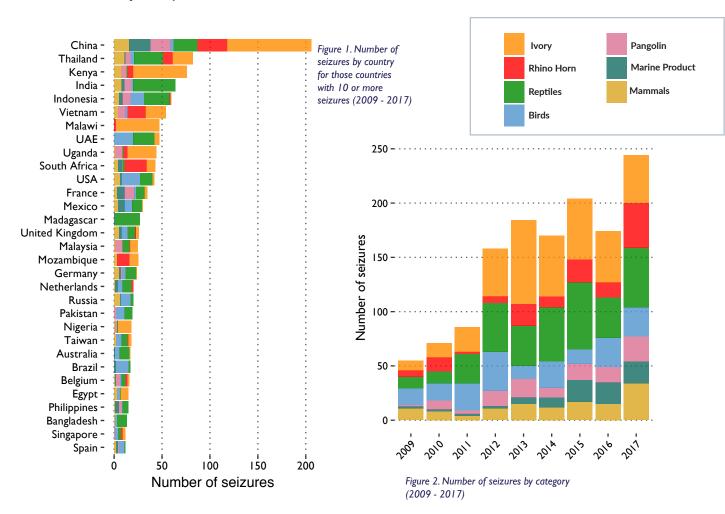
TRENDS ANALYSIS

Overall, according to the C4ADS' Air Seizure Database, 136 countries counted at least one instance of wildlife trafficking in their airports between January 2009 and December 2017.

Identifying and tracking trends in seizure data over time helps to expose wildlife trafficking operations and how they shift in response to certain pressures. For example, seizures can hint at emerging demand markets, transit regions, and trafficking methods as effective enforcement in one region forces traffickers to change their modus operandi. In *In Plane Sight*, C4ADS utilized seizure data to reveal both known and unknown trends, routes, and methods associated with wildlife trafficking operations.

Figure 1 displays the countries with the highest number of seizures in the C4ADS Database. China dwarfs the next most significant country, Thailand, by more than 250%. Although China's prominence is clearly driven by its essential role in the illicit ivory trade, China also numbers more rhino horn, pangolin, marine products, and mammal air seizures than any other country. China's high seizure count is likely due to high levels of wildlife trafficking activity, the ability of Chinese customs and enforcement to identify and stop wildlife trafficking instances, and good seizure reporting standards in both Hong Kong and mainland China.

¹ China's reptile seizure count, however, is overtaken by India, Thailand, Indonesia, and Madagascar, and its bird seizure count is practically nonexistent.





2017 WILDLIFE TRAFFICKING TRENDS

THROUGH THE AIR TRANSPORT SECTOR



Rhino horn seizures nearly tripled (193% increase) from .2016 to 2017



The weight of pangolin seizures more than doubled from 2014 to 2015 and remained high in 2017



2017 was the lowest year for large-scale ivory seizures since 2014



A high number of consignments went through Southern and Eastern Africa unnoticed



In 2017, multiple passengers were stopped bringing ivory in homemade vests into Hong Kong from Zimbabwe via Dubai



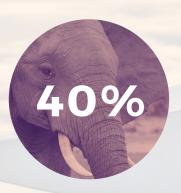
There was an increase in seizures from passengers carrying wildlife in their clothing

A GROWING NUMBER OF SEIZURES



In the past decade, wildlife trafficking instances were recorded in at least 136 countries, appearing in nearly every region of the world.

Recorded seizures of wildlife have consistently increased more than quadrupling from 2009 to 2017. Seizure numbers grew by 40% from 2016 to 2017.



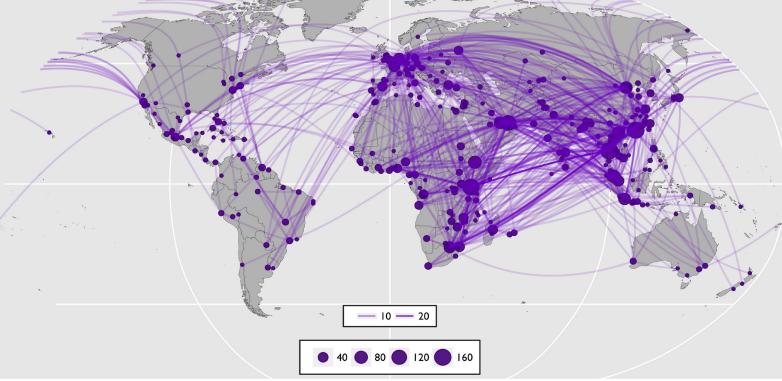


Figure 2. All air trafficking routes recorded in the C4ADS Air Seizure Database (2009 – 2017)

The trafficking routes map represents the flights used to traffic wildlife products through the air transport sector. This includes instances where the product did not actually enter a country because it was seized earlier in the route. The transparency of the line for each route represents the number of times it was used. The bubbles represent the total number of flights to and from each city.

Trafficking Routes Analysis

The overall routes map depicts wildlife trafficking's global reach, and demonstrates the importance of Asian, African, Middle Eastern, and European hub airports. The most common routes for illicit wildlife and wildlife products tend to follow common air passenger routes from hub airports in biodiverse regions to hub airports near demand markets, according to seizures collected in the C4ADS Database. Since hub airports are more likely to have a variety of international flight routes available for traffickers to choose from, they are more likely to be exploited by traffickers than smaller, regional airports. International airlines based at major hub airports are therefore disproportionately exposed to trafficking. Targeting these chokepoints will have a larger impact on traffickers' operations than focusing on regional airports alone.

The most common routes tend to flow from hub airports in biodiverse regions to hub airports near demand markets

Still, regional airports do play an important role in wildlife trafficking. Traffickers operating in large or decentralized countries, like Brazil, Russia, and Indonesia, often fly wildlife from regional airports near the animals' natural habitats to larger, international airports in more urban areas.² From there, the animals may enter the domestic black market for wildlife, or may be flown internationally to larger demand markets elsewhere.

The specific roles that countries play within the international trafficking system tend to depend on their native species and geographic location. Ivory, rhino horn, and pangolin supply chains generally follow a clear and consistent flow from Africa, through either Europe or the Middle East, and into Asia. In contrast, reptile, bird, marine products, and mammal supply chains follow no one clear path, crisscrossing between and within different regions as traffickers take advantage of the plethora of source regions available for the variety of species within each category.

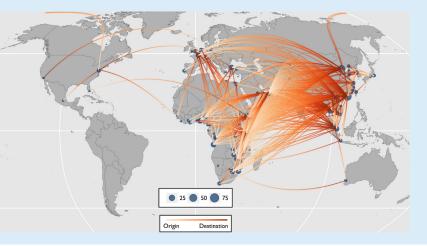
² Note that traffickers operating in remote regions may not have much control over the flight routes they use – they are limited to whatever flights the closest airport provides.

Africa to Asia Trafficking Routes 2009-2017

Ivory Trafficking Routes

Origin: Africa

Transit: Africa (East), Middle East, Europe **Destination:** Asia (East, Southeast)



The C4ADS Air Seizure Database numbers 369 known elephant ivory seizures weighing 44,698.63 kg between 2009 and 2017. In the past year, known elephant ivory seizures in the air transport sector continued to decline, counting 44 seizures weighing 2,991 kg in 2017, down from 47 seizures (6,308 kg) in 2016.

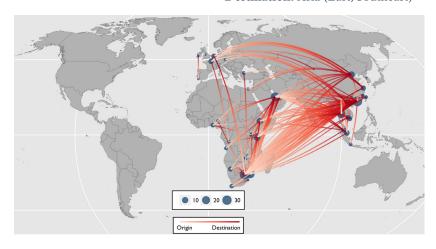
The map highlights China, Southeast Asia, and Sub-Saharan Africa as the most significant regions for ivory trafficking by air. Ivory generally transits through airports in East Africa or the Middle East on its way to Asia. Ivory traffickers occasionally use alternative routes, often to evade wary customs officials in Asia who know to watch for ivory arriving from common origin and transit airports. Ivory traffickers using this strategy generally send their ivory through airports in Europe, as do many Western African ivory traffickers.

In total, the C4ADS Air Seizure Database counted 133 rhino horn seizures weighing 1,920 kg between 2009 and 2017. The past year (2017) saw a significant spike in rhino horn seizures, with 41 total seizures weighing 636.2 kg in 2017, compared to 14 seizures weighing 299.7 kg the previous year (equivalent to a 193% increase in seizure numbers, and a 112% increase in seizure weight).

The rhino horn routes map reinforces the overall Southern Africa to East Asia movement of ivory, rhino horn, and pangolin traffickers. China was the destination for more than half of the rhino horn seizures made in 2017. Additionally, South Africa and Mozambique accounted for nearly 50% of all illicit rhino horn exports that moved through the air transport sector.

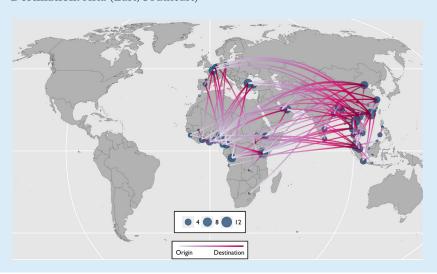
Rhino Horn Trafficking Routes

Origin: Africa Transit: Africa (East), Middle East, Asia (Southeast), Europe Destination: Asia (East, Southeast)



Pangolin Trafficking Routes

Origin: Africa (West), Asia (South, Southeast) Transit: Africa (East), Middle East, Europe Destination: Asia (East, Southeast)



The C4ADS Air Seizure Database recorded 102 pangolin seizures in the air transport sector between 2009 and 2017, with a combined weight of 22,612 kg. The number of pangolin seizures increased sharply after 2011, experienced a brief drop in 2014, and has been increasing most years since.

The routes map for pangolins seems most similar to the maps for wildlife products ivory and rhino horn. The species behind all three products live in the same broad areas – Africa and Asia – while demand for their products exists primarily in Asia. In addition to demonstrating the overall West and central Africa to Asia movement for pangolin products, the routes map also highlights pangolin traffickers' reliance on transit hubs in Europe, the Middle East, and East Africa.

Global Trafficking Routes 2009-2017

Live Reptile Trafficking Routes

Origin: Americas (North), Africa (Madagascar), Asia (South, Southeast) | Transit: Asia (South, Southeast) | Destination: Europe, Asia (Southeast, South, East), Middle East, Americas (North), Europe



Overall, the C4ADS Air Seizure Database counted 335 reptile seizures between 2009 and 2017, or 131,564 seized reptiles. Reptile seizures have been on an overall upward trend since 2009, peaking in 2015 with 62 seizures.

The map for reptile trafficking activity between January 2009 and December 2017 displays a far more global trade than either the ivory, rhino horn, or pangolin trafficking maps, extending from its epicenter in South and Southeast Asia to Africa, Europe, the Americas, and Australia.

Live Bird Trafficking Routes

Origin: Americas (South, North), Europe (incl. Russia), Asia (South, Southeast) | Transit: Americas (South), Middle East, Europe | Destination: Europe (incl. Russia), Asia (Southeast), Middle East, Americas (South, North), Oceania (Australia)

In total, the C4ADS Air Seizure Database counted 195 bird seizures between 2009 and 2017, or 13,131 seized birds. Bird seizures in airports since 2009 have generally remained around 20 seizures per year, although seizure numbers vary substantially year-to-year. In 2017, the C4ADS Database counted 27 bird seizures, or a total of 2,566 birds seized.

Similar to reptile trafficking, bird traffickers appeared to use few transit countries. The bird map reflects a truly global trade, with countries affected by bird trafficking on almost every continent.



Marine Products Trafficking Routes

Origin: Americas (South, North), Europe, Africa (West, Southern), Asia (Southeast) | **Transit:** Europe | **Destination:** Europe, Asia (Southeast)



more than 120% between 2014 and 2015, and have remained high, at 20 seizures per year since 2015.

Seahorses were interdicted most often (24.4%), followed by eel seizures (15.6%), and fish, mollusks (generally abalone or conches).

There were at least 82 seizures of marine products in the air transport sector between January 2009 and December 2017, according to the

C4ADS Air Seizure Database. Marine product seizures increased by

seizures (15.6%), and fish, mollusks (generally abalone or conches), and coral seizures (13.3% each).

Marine products seizures in the air transport sector were generally

Marine products seizures in the air transport sector were generally thinly spread across a wide array of countries in the Americas, Europe, Africa, Middle East, and Asia. The only commonality these countries share is access to water; few landlocked countries appeared to be affected by marine product trafficking by air.

The C4ADS Air Seizure Database recorded 127 seizures of mammals and mammal products in the air transport sector between 2009 and 2017. In the past year, the number of mammal seizures made in airports around the world has more than doubled, from 15 in 2016 to 34 in 2017.

Of all mammals seized, big cats or big cat products were seized most often (31%), followed by primates (20%), large mammals (15%), small mammals (14%), bears (9%), and antelope (6.5%).

Mammal trafficking is most concentrated in Asia, despite prominent countries for mammal trafficking by air also appearing in the Americas, Africa, the Middle East, and Europe.

Mammals Trafficking Routes

Origin: Asia (Southeast), Africa (West, Southern, East) | Transit: Europe, Middle East, Africa (East) | Destination: Europe (incl. Russia), Middle East, Asia (Southeast)



Trafficking Methods Analysis

Tracking wildlife seizures over time reveals certain patterns in the various ways that traffickers move their contraband through the air transport sector. For example, seizures show that traffickers seem to rely on the same methods to move goods over time; tin foil, for instance, has been used for years to hide ivory and other illicit products. Traffickers' methods also appear to shift in response to heightened or changed enforcement efforts, and to some extent, vary depending on the species or product being trafficked. Note that less effective trafficking methods are more likely to be caught, and therefore included in our analysis, and that the most effective tactics may never be identified. Still, understanding the various strategies that traffickers utilize, frequently successfully, to evade detection will allow enforcement to develop better targeting mechanisms, and can lead to substantially decreased vulnerability to trafficking within airports.

Although air freight is often considered the most common transport method for illegal wildlife and wildlife products moved by air, checked luggage appears as by far the most prominent transport method for seizures in the C4ADS Database, accounting for an average of about 43% of seizures each year. Air freight followed, making up about 19% of all known wildlife seizures in the air transport sector each year, while passenger seizures represented about 11%. Mail seizures appeared infrequently, representing at most about 7% of seizures in any one year. This is likely an under approximation of the true number of illegal wildlife and wildlife products discovered in mail each year, since mail shipments are generally subject to less screening and seem to be publicly underreported.

Checked luggage appears to be by far the most prominent transport method for seized wildlife



Transport methods for all seizures in the C4ADS Air Seizure Database (2009 – 2017)

Common wildlife trafficking red flags in air transport









Circuitous Transit











- Wrapped in tin foil, or hidden amongst agricultural products, electrical equipment, etc.
- Hidden compartments in luggage or air freight
- Hidden in cages or boxes in suitcases or in carry-on bags (live animals)
- Repeat offenders
- Abandoned or exchanged luggage
- Use of an unusually high number of suitcases
- Missing, incorrect, incomplete, or misleading documentation (e.g. turtles declared as 'stones')
- Circuitous air transit routes
- Use of shell or cover companies on shipment documentation
- Custom-made clothing
- Taxidermy
- Use of ketamine and other drugs to sedate live animals
- Falsification of CITES permits (e.g. incorrect species identification, counterfeit permits)
- Collusion between customs officers, airport officials, industry employees, and traffickers

RECOMMENDATIONS

Recommendations are grouped below by topic, and are meant to be applicable to national governments, enforcement, industry, intergovernmental organizations, and nongovernmental organizations. Some of our recommendations are geared towards specific stakeholder groups (e.g. enforcement versus industry), while some are applicable to multiple groups.

Regardless of each recommendation's intended audience, we would emphasize 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. Furthermore, 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. For more specific recommendations regarding a certain species or region, please contact C4ADS or the broader ROUTES Partnership.

Implementation of the following recommendations will likely improve enforcement success not just for the illegal wildlife trade, but for other crime types as well.

Recommendations	Intended Audience(s)
Awareness	
Increase awareness of air passengers, aviation staff, freight forwarders, shippers, and enforcement officials. ⁴	 Customs and enforcement agencies Private sector Intergovernmental organizations Nongovernmental organizations
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. ⁵	 Customs and enforcement agencies Private sector Intergovernmental organizations Nongovernmental organizations
Ensure public reporting mechanisms are in place and well-known so passengers can report suspected wildlife trafficking instances.	Customs and enforcement agenciesPrivate sector
Training	
Provide training on red flag indicators associated with wildlife traffickers and shipments. Ensure that follow-up trainings are provided as necessary to support uptake.	 Customs and enforcement agencies Private sector Intergovernmental organizations Nongovernmental organizations
Incorporate training for airline staff on how to safely handle trafficked live or dead animals after discovery into existing training programs. ⁶ Create and provide "forensic protection protocols" training to preserve evidence for trial.	 Customs and enforcement agencies Private sector Intergovernmental organizations
Policy	
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.	National governments
Detection	
Pursue shift towards electronic paperwork for air freight and	

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.

- Customs and enforcement agencies
- Private sector

⁴ For more information on available awareness training and materials, contact the ROUTES Partnership at routespartnership.org/contact/ or C4ADS at info@c4ads.org.

⁵ For support creating a pamphlet tailored to a specific area, contact C4ADS at info@c4ads.org.

⁶ See www.iata.org/policy/environment/Documents/best-practices-handling-escaped-animals-cabin-crew.pdf for IATA's "Best Practice on Safe Handling of Escaped Animals in the Cabin."

Recommendations	Intended Audience(s)
Enforcement	
Develop clear escalation procedures ⁷ upon discovery of potential illegal activity.	Customs and enforcement agenciesPrivate sector
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.	Customs and enforcement agenciesPrivate sector
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.	 Customs and enforcement agencies Intergovernmental organizations
Dedicate additional resources to combatting the illegal wildlife trade in common hub airports exploited by wildlife traffickers. ⁸	Customs and enforcement agenciesPrivate sector
Develop or enhance customs screening procedures for transit flights.	Customs and enforcement agenciesPrivate sector
Customs and enforcement should be aware of flight routes opening through high-risk areas.	Customs and enforcement agenciesPrivate sector
Develop and maintain a comprehensive internal database of entities previously involved in wildlife seizures.	Customs and enforcement agencies
Develop a system to test counter-wildlife trafficking protocols.	Customs and enforcement agencies
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.	Customs and enforcement agenciesPrivate sector
Increase coordination 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.	Customs and enforcement agencies
Seizure Reporting	
Store collected seizure information in one centralized database.	Customs and enforcement agencies
Develop a procedure to publicly report seizure information. Update seizure press releases with prosecution results. ⁹	Customs and enforcement agencies

^{7 &}quot;Escalation procedures" in this case means established communication channels and processes that move a report of possible illegal activity to enforcement officials with the power to act.

 $^{8 \ {\}it See http://routespartnership.org/industry-resources/training-modules}.$

⁹ See www.customs.gov.hk/filemanager/common/pdf/statistics/enforcement_cases_en.pdf for an example.



NOTES

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iv. Ibid.

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