

Coronavirus and the trade in wildlife

SUMMARY

Nearly three quarters of emerging infectious diseases in humans are caused by zoonotic pathogens. The majority of them originate in wildlife. Human activities, such as trade in wildlife, increase opportunities for animal–human interactions and facilitate zoonotic disease transmission. Several significant diseases, including Ebola and the severe acute respiratory syndrome (SARS) outbreak, have been traced, in part, to substantial animal-human contact along the trade chain. Current information suggests that the Covid-19 pandemic may have started from a local Chinese wildlife market.

Wildlife trade, though difficult to quantify, is one of the most lucrative trades in the world. It is regulated under the Convention on International Trade of Endangered Species of Flora and Fauna (CITES), an international agreement to which the European Union (EU) and its Member States are parties. Through a permit system, CITES aims to ensure that international trade in listed species is sustainable, legal and traceable. Curbing illegal trade, however, remains a challenge. In 2016, the EU adopted an action plan on wildlife trafficking, which runs until 2020 and is currently under evaluation. The European Parliament supports its renewal and the strengthening of its provisions.

The coronavirus crisis has thrown into sharp focus the threat of disease transmission posed by trade in and consumption of wild animal species, prompting calls for bans on wildlife trade and closure of wildlife markets. Others advocate better regulation, including enhanced health and safety and sanitation measures. With matters relating to zoonotic diseases outside CITES' mandate, some have suggested the development of a new international convention to address the issue. To reduce the risks of future outbreaks, many recommend an integrated approach, which would notably also cover nature preservation and restoration.



In this Briefing

- Introduction
- Wildlife and emerging infectious diseases
- Wildlife trade – scale and regulation
- Health risks associated with the trade in wildlife

Introduction

Current [evidence](#) suggests that the Covid-19 virus¹ responsible for the ongoing global [pandemic](#) emerged from an animal source. While further investigations are needed to identify that source with certainty, establish how the virus entered the human population and determine the potential role of an animal reservoir² in the disease, research conducted to date reveals that the Covid-19 virus is a close relative of other known coronaviruses circulating in bats. Experts believe, however, that transmission to humans involved an intermediate host, which could be a domestic food animal, a wild animal, or a domesticated wild animal, yet to be identified. A [study](#) released in March 2020 suggested that [pangolins](#) – scaly anteaters found in Asia and Africa, known to be at the top of the world list of illegally traded wild mammals – could be the missing link that enabled the virus to jump the species barrier and infect humans. This has brought attention to the issue of (illegal) wildlife trade, and, beyond, to the role of human activity and associated environmental [perturbations](#) in zoonotic disease emergence.³

Definitions and concepts

Zoonotic diseases (or zoonoses) are diseases shared between animals (including livestock, wildlife, and pets) and people. They are commonly spread at the human-animal-environment interface, where people and animals interact with each other in their shared environment. Zoonoses can be foodborne, waterborne or vector-borne, or transmitted through direct contact with animals, or indirectly by [fomites](#) or environmental contamination.

Source: [World Organisation for Animal Health](#), 2019.

Emerging zoonotic diseases are those that have newly appeared in a population or have existed previously but are rapidly increasing in incidence or geographical range.

Source: [UNEP Frontiers 2016 report](#), p. 19.

Wildlife and emerging infectious diseases

Nearly [75%](#) of emerging infectious diseases in humans are caused by zoonotic pathogens. The majority originate in wildlife.⁴ Scientists⁵ have identified human behaviour and modifications to natural habitats (human population expansion and encroachment on wildlife habitats), changes in agricultural practices (including the farming of wild species) and globalisation of trade as leading causes of zoonosis emergence. [Evidence](#)⁶ suggests that anthropogenic activities altering the landscape and causing losses in wildlife habitat quality (such as forest fragmentation, development and conversion to cropland) increase opportunities for animal–human interactions, and facilitate zoonotic disease transmission.⁷ The same is true of the exploitation of wildlife through [hunting](#) and trade.

Several significant zoonotic infectious diseases have been traced, in part, to the substantial human–animal contact occurring along the wildlife trade chain, from harvest to end-point (consumption/use).⁸ Examples include those caused by the Human Immunodeficiency Virus (HIV), [likely linked](#) to human consumption of non-human primates; the monkeypox virus, associated with the exotic pet trade; the H5N1 and H7N9 avian influenza viruses; and the Ebola virus, linked to the consumption of wild meat. The coronavirus that caused the severe acute respiratory syndrome (SARS) outbreak in 2002 has been associated with the international trade in small carnivores. The strain, found to have originated in [bats](#), was detected in masked palm [civets](#) sold in animal markets in China. Similarly, a local seafood and wild-animal market in Wuhan, China, is [believed](#) to have been the starting point of the Covid-19 disease outbreak.

Three steps⁹ are required for the global emergence of a zoonotic pathogen: (1) the pathogen must be successfully transmitted between a wild reservoir and humans or their domestic animals; (2) it must be directly transmitted between humans; and (3) it must move from a local epidemic into the global population. Research¹⁰ shows that local biodiversity loss and increasing rates of animal trafficking, and trade and transportation of animals to large cities, where the potential for person-

to-person transmission is greater, may dramatically increase the probability of global epidemics such as SARS.

Wildlife trade – Scale and regulation

Background

Global wildlife trade (understood as any [sale or exchange](#) of wild animal and plant resources) is difficult to [quantify](#) since it ranges from small-scale local bartering to major international routes, and is often conducted illegally. [Products traded](#) range from live organisms to specific parts and derivatives (e.g. bones, feathers, skins, leaves, fruits, seeds and oils), which feed into several industries including food, healthcare, cosmetics, fibre, construction, luxury goods, pets and ornaments. Trade in wildlife is one of the most [lucrative](#) trades in the world. The legal trade into the EU alone is worth an estimated [€100 billion](#) annually. Global illegal wildlife trade – by nature impossible to assess precisely – is estimated to be worth between €8 and 20 billion annually.

Trade in wildlife is illegal if it is contrary to the laws of the participating nations or the limitations on trade provided for by the Convention on International Trade of Endangered Species of Flora and Fauna ([CITES](#)), an international agreement aimed at ensuring that international trade in specimens of wild animals and plants does not threaten their survival. Research shows,¹¹ however, that the lines between legality and illegality can be fluid. Activities along trade chains are seldom universally characterised as completely illegal, especially when they cross jurisdictional boundaries.

Legal framework

CITES entered into force in 1975 and currently has [183 parties](#), including the EU and all its Member States. The Convention regulates trade in species, based on their conservation status and the risk posed by international trade, through a system of permits and certificates. According to the degree of protection they need, species covered by CITES are listed in [three appendices](#):¹²

- *Appendix I* includes species threatened with extinction, for which international commercial trade is generally prohibited. Trade is only authorised in exceptional circumstances, such as for scientific research. Pangolins, for instance, are listed in Appendix I (see box below).
- *Appendix II* contains species that are not necessarily threatened with extinction now, but that may become so unless trade is closely controlled. International trade may be allowed by the granting of an export permit or re-export certificate. No import permit is necessary for these species under CITES, unless required by national law.
- *Appendix III* contains species that are protected in at least one country that has asked other CITES parties for assistance in controlling the trade. Trade requires an export permit or a certificate of origin if the species has been sourced from a country that has not listed it.

Listing a species in Appendices I and II requires a two-thirds majority decision by the [Conference of the Parties](#) (CoP). Native species, by contrast, can be placed on Appendix III on the parties' own initiative.

CITES currently covers around 5 800 animal and 30 000 plant [species](#), most of which are included in Appendix II.

In the EU, CITES is [implemented](#) through the EU wildlife trade regulations, in particular Council Regulation (EC) No 338/97. This regulation goes beyond the requirements of CITES in some respects, in particular by regulating trade in non-CITES listed species, imposing stricter import restrictions for some species and empowering the EU to suspend imports of species from particular exporting countries.

A focus on pangolins

Prized for their meat, considered a delicacy, and for their scales, used in traditional medicines, pangolins are the [most heavily](#) trafficked wild mammals in the world. An estimated [one million](#) pangolins have been snatched from the wild in the past decade. All eight species (four Asian and four African) are listed as threatened, [at various levels of severity](#), on the International Union for Conservation of Nature's Red List of Threatened Species. The eight pangolin species were moved from Appendix II to Appendix I at CITES CoP17 in 2016, banning international commercial trade. However, since most of the [pangolin market](#) was already illegal, this move did not have much impact on the illegal trade. A 2017 [report](#) by the wildlife trade monitoring network Traffic, which analysed seizures and trafficking routes over a six-year period, demonstrated the global nature of pangolin trafficking. Europe, for instance, was identified as an important transit hub, mostly for African pangolins (and their parts and derivatives) being transported to Asia. A [report](#) released in February 2020 by the Wildlife Justice Commission points to a significant and rapid increase in the volume of pangolin scales being trafficked, facilitated by transnational criminal networks.

As research on tigers, rhinos and elephants shows,¹³ curbing the illegal international trade in wildlife is fraught with challenges, owing for instance to high demand and profit, cultural and societal traditions, ambiguity of property rights, negative economic incentives for bans, and inadequate enforcement. This latter element is also one of the main gaps identified by the United Nations Office on Drugs and Crime (UNODC).¹⁴ Supporting capacity-building in law enforcement is part of the mission of the International Consortium on Combating Wildlife Crime (ICWC), a joint collaboration of the CITES Secretariat, Interpol, UNODC, the World Bank and the World Customs Organization. The work of the consortium is [supported financially](#) by the EU.

Wildlife trafficking as an EU concern

Europe is a destination as well as a transit region and, to some extent, also a source region for wildlife trafficking. A 2016 [study](#) commissioned by the European Parliament's Committee on the Environment, Public Health and Food Safety (ENVI) showed that it is an important destination market for illegally traded exotic pets, especially reptiles and birds, and that many European countries play an important role as a trade hub for African mammals before their onward transit to Asia. Latest [analysis](#) on seizures of CITES-listed wildlife in the European Union indicates that the main commodity types seized in the EU in 2018 were, in order of number of reported seizure records, medicinals; corals; reptile bodies, parts and derivatives; live birds; live reptiles; elephant ivory and mammal bodies, parts and derivatives.

Following a request by the European Parliament, in February 2016 the EU adopted an [action plan on wildlife trafficking](#). The plan, which ends in 2020, contains 32 objectives, structured around three priorities: (1) preventing wildlife trafficking and addressing its root causes; (2) implementing and enforcing existing rules and combating organised wildlife crime more effectively; and (3) strengthening the global partnership of source, consumer and transit countries against wildlife trafficking. The Commission presented a [progress report](#) in October 2018 which concluded that, despite progress on most of the objectives, more effort was needed, as wildlife trafficking continued to thrive. A comprehensive [evaluation](#) of the implementation of the plan is expected to be presented by the end of 2020. The European Parliament, in its January 2020 [resolution](#) on the European Green Deal, urged the Commission to renew and strengthen the provisions of the action plan, as well as to fully integrate these into the EU 2030 biodiversity strategy, since wildlife trafficking and illegal wildlife trade are major drivers of biodiversity loss. The presentation of the biodiversity strategy has been delayed owing to the coronavirus crisis.

Health risks associated with the trade in wildlife

The ongoing coronavirus pandemic has brought the threat of disease transmission posed by the trade in and consumption of wild animal species under the spotlight. As highlighted in a recent

[briefing](#) by Traffic, this threat exists within both legal and illegal trade flows (though illegal trade certainly entails additional risks, linked, for instance, to poor transport conditions, avoidance of quarantine controls on imports and absence of health inspections). For the wildlife trade monitoring network, it is not simply compliance or non-compliance with wildlife legislation that determines the level of risk from a disease perspective. The main factors to consider are what species are being traded, and in what form (i.e. meat, live animals); where transmission might occur; and whether appropriate preventive measures are being taken.

In February 2020, China passed a [decision](#) banning trade in wildlife for food. According to the press, [Vietnam](#) is considering similar measures, and [Gabon](#) has signed a law to stop the trade in bats and pangolins, as a precaution. Some conservation and animal welfare organisations have called for a ban on [all commercial trade](#) in wildlife for human consumption and for the closure of [wildlife markets](#). Some researchers warn, however, that blanket bans of this kind on wildlife trade could have unintended [adverse effects](#) on both people and wildlife, and instead recommend better regulation of wildlife markets, especially those involving live animals. This could involve focusing on the highest-risk species and improving conditions along supply chains and in markets (e.g. health and safety and sanitation measures, and animal health checks).

Matters regarding zoonotic diseases are beyond [the mandate of CITES](#). Some suggest developing a new international convention to address the issue.¹⁵ Many¹⁶ point to the need for an integrated approach that would also cover nature preservation and restoration. Taking a holistic view of the issue (addressing all anthropogenic drivers of zoonotic disease emergence, beyond the sole aspect of wildlife trade; looking for international solutions) is, for some researchers,¹⁷ an essential step towards reducing the risk of future outbreaks. The EU could contribute through various policy channels,¹⁸ including trade, foreign aid and nature protection.

MAIN REFERENCES

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ENDNOTES

- ¹ The scientific name of the coronavirus causing Covid-19 is SARS-CoV-2. The virus may also be referred to as 'the Covid-19 virus'. Covid-19 refers to the disease caused by the virus. Source: [World Organisation for Animal Health](#).
- ² The reservoir of an infectious agent is the habitat in which it normally lives, grows, and multiplies. Reservoirs include humans, animals, and the environment. The reservoir may or may not be the source from which an agent is transferred to a host. Source: [US Centres for Disease Control and Prevention](#).
- ³ On this, see for instance the webpage of the Geneva Environment Network, collecting articles on [Covid-19 and the environment](#), more specifically the section on 'Origins of the pandemic and prevention'.
- ⁴ K. E. Jones et al., '[Global trends in emerging infectious diseases](#)', *Nature*, Vol. 451, 2008, pp. 990–993.
- ⁵ B. B. Chomel, A. Belotto, F.-X. Meslin, '[Wildlife, exotic pets, and emerging zoonoses](#)', *Emerging Infectious Diseases*, 2007.
- ⁶ C. K. Johnson et al., '[Global shifts in mammalian population trends reveal key predictors of virus spillover risk](#)', *Proceedings of the Royal Society B*, Vol. 287(1924), 2020.
- ⁷ For a detailed analysis of this issue, see UNEP, CBD and WHO, [Connecting Global Priorities: Biodiversity and Human Health, a State of Knowledge Review](#), Chapter 7, Infectious diseases – Infectious disease ecology and drivers, 2015, p. 132.
- ⁸ UNEP, CBD and WHO, [Connecting Global Priorities: Biodiversity and Human Health, a State of Knowledge Review](#), 2015, p. 140.
- ⁹ N.D. Wolfe, P. Daszak, A. Kilpatrick, et al., '[Bushmeat Hunting, Deforestation, and Prediction of Zoonotic Disease](#)', *Emerging Infectious Diseases*, Vol. 11(12), 2005, pp.1822-1827.
- ¹⁰ L. Swift, et al., '[Wildlife Trade and the Emergence of Infectious Diseases](#)', *EcoHealth*, Vol. 4(1), 2007, pp. 25-30.
- ¹¹ M. t' Sas-Rolfes et al., '[Illegal Wildlife Trade: Scale, Processes, and Governance](#)', *Annual Review of Environment and Resources*, Vol. 44(1), 2019, pp. 201-228.
- ¹² For a detailed overview of the CITES regime, see European Commission webpage, [Background to CITES](#).
- ¹³ See K. Conrad, '[Trade bans: a perfect storm for poaching?](#)', *Tropical Conservation Science*, Vol. 5(3), 2019, pp. 245-254.
- ¹⁴ See UNODC, [World Wildlife Crime Report: Trafficking in protected species](#), 2016, Chapter 10: Implications for policy.
- ¹⁵ See the Traffic [briefing paper](#) on wildlife trade, p.8, and also Pervaze A. Sheikh and Katarina C. O'Regan, [Wildlife Trade, COVID-19, and Other Zoonotic Diseases](#), CRS Report IF11494, April 2020.
- ¹⁶ See for instance [Statement of the Acting Executive Secretary, Convention on Biological Diversity, on the occasion of World Health Day](#); WWF report, [The loss of nature and the rise of pandemics](#), March 2020; [How The Destruction of Nature is Connected to the Coronavirus](#) (in German); UNEP, [Coronavirus outbreak highlights need to address threats to ecosystems and wildlife](#), 3 March 2020.
- ¹⁷ Oxford Martin Programme on the Illegal Wildlife Trade and Interdisciplinary Centre for Conservation Science, University of Oxford, [Position statement: Managing wildlife trade in the context of COVID-19 and future zoonotic pandemics](#), 15 April 2020.
- ¹⁸ See for instance S. Sipka, [Humans, wildlife and COVID-19: How to prevent future pandemics](#), European Policy Centre, 20 April 2020.

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