



Coronavirus and the trade in wildlife

By Vivienne Halleux, European Parliamentary Research Service, Members' Research Service, E 649.409 – May 2020

The following is a briefing for the Members and staff of the European Parliament as background material to assist them in their parliamentary work, first published on <https://epthinktank.eu/2020/05/05/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.

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

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. Evidence⁶ 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 transmission⁷.

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 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.

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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.

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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.

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10 L. Swift, et al, 'Wildlife Trade and the Emergence of Infectious Diseases', *EcoHealth*, Vol. 4(1), 2007, pp. 25-30.

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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.

Waikamoi Preserve Hike Island of Maui

The Waikamoi Nature Preserve is part of the East Maui Watershed on the slopes of Haleakalā, which was established by The Nature Conservancy (TNC) in 1983 in cooperation with Haleakalā Ranch Company. The high-elevation alpine shrubland and rainforest, which consists to 80% of native ‘*hi* a Lehua tree, is a sanctuary for 63 species of rare plants and 13 species of birds, seven of them endangered. Access to the preserve is by permit or guided hikes only. Every participant has to follow Rapid ‘*hi* a Death (ROD) Protocols to prevent spreading of the disease: No gear that has been on Hawai‘i Island and/or in natural areas on O‘ahu and Kaua‘i within a six-month period prior to access into Waikamoi Preserve. TNC provides guided monthly hikes or quarterly service trip. For more information, go to <https://www.nature.org/en-us/get-involved/how-to-help/places-we-protect/waikamoi/>.

By Ginette Alipio and Colleen Soares

February 6, 2020, the Hawaii Audubon Society (HAS), in conjunction with The Nature Conservancy of Maui, hosted a group of 12 HAS members through the beautiful Waikamoi Preserve at 6,000 feet on the slopes of Haleakalā. Led by Renee Miller, Maui Nui Program Coordinator for the Nature Conservancy, and HAS board member, Colleen Soares, the enthusiastic group learned about the forest and its treasures - endemic ‘*hi* a, Koa, fern, lobelia, ‘*Olapa*, and Pukiawe.



The group at the trail head. At 6,400 ft, the hike is rated moderate to strenuous, photo credit Colleen Soares.

Along the hike, the group enjoyed sweet birdsong and stunning views of endemic I‘iwi, ‘*Apapane*, and ‘*Alauahio* (Maui Creeper), teased by the faint song of a Japanese bush warbler, and finally rewarded with the elusive and critically endangered ‘*Akohekohe*!

It was special adventure. Following is an excerpt from Ginette’s birding journal that recounts the excitement:

“As we approached the gathering spot at the edge of Hosmer’s Grove, I was overwhelmed by the I‘iwi and ‘*Apapane* song. We welcomed a symphony, and a ballet of bright reds and greens, darting in the curtains of thick forest. Then the honking of a graceful Nene family of three flying and calling overhead—an amazing prelude to what was an exciting journey through the Waikamoi Preserve!

Our guide, Renee, opened the gate to lead us down into the deep emerald forest, hazy with thick, rolling mist and drizzle. The trail wound downhill through a towering invasive pine forest, softened with wispy Mexican weeping pine, moss-carpeted trails, corridors of broad, knobby tree trunks, echoing birdsong, glistening leaves, and wind gusts through the trees. Along the way, Renee highlighted flora such as the graceful ‘*Olapa* (revered and eluded in hula), big ‘*Ohelo* berry bushes (a favorite food of the Nene), Pukiawe, and purple *Prunella vulgaris* underfoot.

We stopped to rest at a boot cleaning station next to a massive 500+ year old ‘*hi* a. The group took a moment to revere the aged ‘*hi* a, with its immense twisted, blackened trunk, crackled gnarly branches and tangled roots.



The boardwalk has no railings and a few places that are 2-3 feet off the ground, photo credit Colleen Soares.

It was heartbreaking to see it struggle for life, but hopeful to see new leaves. It has been strong to survive beneath giant

invasive pines. We started on the boardwalk under huge ‘hi a and Koa trees and it was an ethereal dream, drifting through clouds of cool mist and waving lush fern like Kupukupu and Ama’uma’u.

It was a challenge to watch my feet, trying not to fall off the narrow boardwalk while scanning the canopy for birds. Stopping abruptly, one of the seasoned birders shushed us and pointed. I stared into knot of gnarled, lichen-covered branches, straining to see. Scanning quickly for movement, noting even a slight bend of branches, I finally spotted a tiny, bouncy, puff of yellow, fluffed against the cold and barely visible amidst the thicket of branches – an ‘Alauahio, Maui creeper!

Along the path we were accompanied by a serenade of high-pitched I’iwi fluting and ‘Amakihi chirping and fluttering of ‘Apapane. It was thrilling to catch quick flashes of crimson and little masked green ‘Amakihi flitting from branch to branch.

Someone whisper-shouted, “Japanese bush warbler!” It faintly called amid the bird chatter, hard to discern the direction, except for the well-trained birder ear. Heads whipped in the direction of the birder’s point, but no sight of the bird.



I’iwi, photo credit Nick Kalodimos

The descent on the narrow, stair-cased boardwalk brought us to a small wooden platform, the climax of our hike, overlooking an expanse of forest. Here, some of us welcomed the seating, crunching apples and trail mix, and hushed conversation commenced. “A-KO-HE-KO-HE!!!”

Suddenly there was a rush of boots on the deck and drizzle-drenched, wild-eyed birders crammed close together like flamingoes at the call, craning necks upward following the direction to a skeletal treetop.

Everyone strained to see – some clumsily fumbling for binoculars, while several giant camera lenses rose with a concert of shutter beats.

An ‘Akohekohe flew in silently and perched high above the platform, perhaps curious about the squad of wet humans. I captured only a fleeting glimpse of the tiny black silhouette of the honeycreeper, with its distinctive crest before it was gone into the veil of mist. My heart pounded. I looked at the smiling disbelief on everyone’s faces. “Woo-Hoo!” I cheered quietly and jumped up and down like a child, elated – a spectacular addition to my bird list and an extraordinary way to celebrate my first year of birding!

A special thank you Warren Johnson and Lisa Carter who spotted the ‘Akohekohe and shared that special moment with us all!”

The table below shows native birds of the Preserve; for details, visit https://dlnr.hawaii.gov/ecosystems/files/2013/07/EMI-LRMP_20140304_FINAL.pdf.

SCIENTIFIC NAME	COMMON NAME	FEDERAL STATUS
<i>Hemignathus lucidus affinis</i> *	Maui nukupu‘u	Listed endangered; last seen 1996
<i>Loxops coccineus ochraceus</i> *	Maui ‘ kepa	Listed endangered; Last seen 1995 ¹
<i>Melamprosops phaeosoma</i> †*	po‘ouli	Listed endangered; Last seen 2004 ²
<i>Palmeria dolei</i>	‘ kohekohe, crested honeycreeper	Endangered
<i>Pseudonestor xanthophrys</i>	kiwikiu, Maui parrotbill	Endangered
<i>Pterodroma phaeopygia sandwichensis</i>	‘ua‘u, Hawaiian petrel	Endangered
<i>Branta sandvicensis</i>	n n , Hawaiian goose	Endangered
<i>Puffinus auricularis newelli</i> ³	‘a‘o, Newell’s shearwater	Threatened
<i>Paroreomyza montana</i>	‘alauahio	--
<i>Vestiaria coccinea</i>	‘i‘iwi	--
<i>Asio flammeus sandwichensis</i>	pueo	--
<i>Himatione sanguinea</i>	‘apapane	--
<i>Hemignathus virens</i>	‘amakihi	--

◇ Known in adjacent areas; thought to occur in Waikamoi

† Unconfirmed sighting; known from adjacent Hanawi NA

1 Natural Diversity Database and Forest Bird Survey data

2 Gorreson et al., 2009

3 Possibly in Waikamoi Preserve (see Wood and Bily 2008)

Hawaii Audubon Society Membership/Donation Form

The mission of the Hawaii Audubon Society (HAS) is to foster community values that result in the protection and restoration of native wildlife and ecosystems and conservation of natural resources through education, science and advocacy in Hawaii and the Pacific. Founded in 1939, HAS is an independent non-profit 501(c)(3) organization and does not receive dues paid to the National Audubon Society. Thank you for supporting your local Hawaii Audubon Society.

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Mahalo for your concern and commitment to protecting Hawai'i's native wildlife and ecosystems.

Announcements

27th Hawai i Conservation Conference: Ola Ka ina Momona: Managing for Abundance

September 1-3, 2020

Due to uncertainties around the impacts and threats of COVID-19, the Hawai i Conservation Alliance and Foundation have decided to host this year's Conference as a virtual event. The theme "Ola Ka ina Momona" translates as "The Abundant Land Thrives." Expanding on this is the idea that land and sea ecosystems maintain their abundant biocultural diversity and thrive, through our efforts to achieve sustainability and enhance the viability of all life on Earth.

Conference highlights will include presentation from impactful speakers, opportunities to learn about different technologies, methods, and approaches to conservation, field activities, and new and strengthened partnerships among the conservation community.

<https://www.hawaiiconservation.org/conference/2020-conservation-conference/>

Upcoming Events and Field Trips

Visit our website for details and regular updates
<http://www.hawaiiadubon.org/get-outside>

Welcome Home to Shorebirds:

Paik Lagoon Wildlife Sanctuary

September 19, 2020, 10:30am, meet on Kuli ou ou Road
Enjoy fall at Paik ! Let's welcome our unique and beautiful migratory shorebirds as they return from their extensive travel to enjoy the Hawaiian Islands for the fall and winter months. Please call or text 808-864-8122 and leave your name and phone number.

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The Agreement on the conservation of Albatrosses and Petrels <https://www.acap.aq/> decided to inaugurate an annual World Albatross Day (WAD) on June 19. This year’s theme “Eradicating Island Pests” highlights the threats albatrosses and petrels face on their breeding grounds from introduced rodents (like killer house mice attacking albatross chicks on Gough Island and Midway), cats, and pigs.

Earlier this year, HAS joined other Hawaiian NGOs in supporting World Albatross Society. “Hawai‘i’s albatross populations have suffered staggering losses over the centuries, yet our three Northern Hemisphere species continue to nest in the Hawaiian Archipelago. WAD is a fine way to share with the world the marvel of these magnificent birds’ continued survival”, states HAS Board Member Susan Scott on behalf of HAS.

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