

Why coronavirus in China could help save the pangolin and other endangered species

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Paris — The novel coronavirus outbreak in China may end up saving one of the world's most trafficked animals after Beijing announced a total ban on the sale and consumption of the pangolin.

The scaly mammal — listed by the International Union for Conservation of Nature (ICUN) as threatened with extinction — is a traditional delicacy across China and much of southeast Asia.

Following research linking the critters with the transmission of coronavirus to humans in the outbreak epicenter of Wuhan, Chinese officials on Monday slapped a ban on eating wild animals.

The measures, intended to halt the spread of the virus that has infected over 80,000 people worldwide

and killed more than 2,700, could end up helping a number of endangered species — but only if the ban holds long term.

"I applaud the ban, as we see that the Chinese government is determined to change a thousands-year-old tradition which is so inappropriate in today's society," said Jeff He, China director at the International Fund for Animal Welfare.

"I think the ban is an important Step One for wildlife conservation in China."

He called for "stronger and more progressive revisions" of China's existing wildlife protection laws.

Beijing implemented similar measures following the SARS outbreak in the early 2000s, but the trade and consumption of wild animals, including bats and snakes, made a comeback.

"I do think the government has seen the toll it takes on national economy and society is much bigger than the benefit that wild-eating business brings," said He.

The pangolin, the most trafficked mammal on Earth,

is prized for its meat and its unique scales, which are said to have medicinal properties.

Peter Knights, CEO of the WildAid charity, said that while China's ban was welcome, a global effort was required to end the drastic decline in the world's pangolin populations.

"The only question is what will happen in the longer run," he said. "We hope that China can lead the world in banning these markets globally."

The coronavirus outbreak should serve as a "warning" for humans to seek to conserve more of nature, or face health and financial backlashes, Knights said.

"If we heed the warning not only will we protect human life but we could actually save species like pangolins," he added.

The international sale of pangolins was outlawed in 2016 under the CITES convention against species exploitation.

CITES secretary-general Ivonne Higuero welcomed China's move to ban the domestic trade but stressed that the animals were far from out of the woods.

The illegal trafficking of wild species is estimated by the WWF to be worth around \$15 billion annually, particularly among booming Asian markets.

"What we've seen is that there is a lot of illegal wildlife trade going on with China as a destination country," said Higuero.

She said a ban on pangolin consumption in China could significantly dent international trafficking by removing the financial incentives that drive criminal gangs to smuggle the creatures en masse.

While the ban has been welcomed by the conservation communities, there are fears that humans could come to blame pangolins for the outbreak, and seek revenge.

"People could become more wary of pangolins and therefore become more sensitive to their consumption and use," said Ray Jansen, Chairman of the African Pangolin Working Group and member of the ICUN.

"But on the other side of the sword, they could also start viewing pangolins as a threat, which would put them in danger. We are not quite sure how the public will take it."

For Andrew Muir, CEO of Wilderness Foundation Africa, the solution is simple.

"If we do not eat wildlife they will not harm us," he said.

Coronavirus: The race to find the source in wildlife

By Helen Briggs
BBC News
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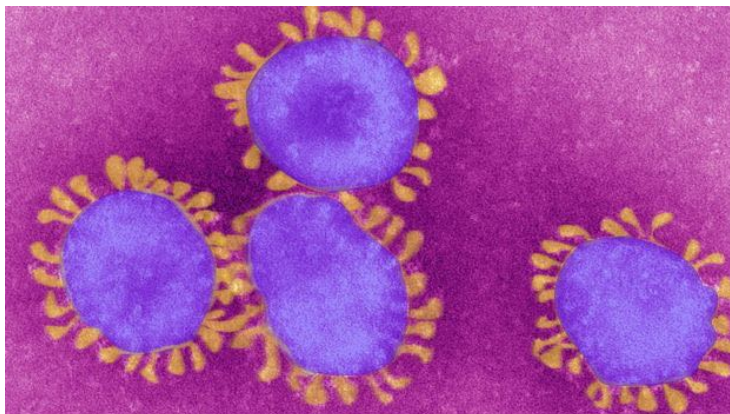
A trafficked pangolin in Kuala Lumpur: the animal is a suspect in the outbreak

The race is on to find out how the deadly coronavirus jumped from animals to humans. Helen Briggs looks at how scientists are trying to trace the source of the outbreak.

Somewhere in China, a bat flits across the sky, leaving a trace of coronavirus in its droppings, which fall to the forest floor. A wild animal, possibly a pangolin snuffling for insects among the leaves, picks up the infection from the excrement.

The novel virus circulates in wildlife. Eventually an infected animal is captured, and a person somehow catches the disease, then passes it on to workers at a wildlife market. A global outbreak is born.

Scientists are attempting to prove the truth of this scenario as they work to find wild animals harbouring the virus. Finding the sequence of events is "a bit of a detective story", says Prof Andrew Cunningham of Zoological Society London (ZSL). A range of wild animal species could be the host, he says, in particular bats, which harbour a large number of different coronaviruses.



Coronaviruses under the microscope

So how much do we know about the "spillover event", as it's known in the trade? When scientists cracked the **code of the new virus**, taken from the body of a patient, bats in China were implicated.

The mammals gather in large colonies, fly long distances and are present on every continent. They rarely get sick themselves, but have the opportunity to spread pathogens far and wide. According to Prof Kate Jones of University College London, there is some evidence bats have adapted to the energetic demands of flight and are better at repairing DNA damage. "This might enable them to cope with a higher burden of viruses before getting sick - but this is just an idea at present."

There's no doubt that the behaviour of bats allows viruses to thrive. "When you consider the very way that they live, then they are going to have a large array of viruses," says Prof Jonathan Ball from the University of Nottingham. "And because they're mammals there's a possibility that some of them can infect humans either directly or through an intermediate host species."



Most infections are in China but other nations are battling the virus

The second part of the puzzle, then, is the identity of the mystery animal that incubated the virus in its body and possibly ended up in the market at Wuhan. One suspect for the smoking gun is the pangolin.

The ant-devouring scaly mammal, said to be the most widely trafficked mammal in the world, is threatened with extinction. The animal's scales are in high demand in Asia for use in traditional Chinese medicine, while pangolin meat is considered a delicacy by some.

Coronaviruses have been found in pangolins, some claimed to be a close match to the novel human virus. Could the bat virus and pangolin virus have traded genetics before spreading to humans? Experts are cautious about drawing any conclusions. Full data on the pangolin study has not been released, making the information impossible to verify.



Officials seize civet cats in Xinyuan wildlife market in Guangzhou to prevent the spread of SARS

Prof Cunningham says the provenance and number of pangolins examined for the research is especially important. "For example, were there multiple animals sampled directly in the wild (in which case the results would be more meaningful), or was a single animal from a captive environment or wet market sampled (in which case conclusions about the true host of the virus could not be robustly made)?" Pangolins and other wild species, including a variety of species of bat, are often sold in wet markets, he says, providing opportunities for viruses to move from one species to another. "Wet markets, therefore, create ideal conditions for the spillover of pathogens from one species to another, including to people."



Camels can harbour the novel coronavirus, MERS

The market in Wuhan, which was closed down after the outbreak, had a wild animal section, where live and slaughtered species were on sale, including body parts of camels, koalas and birds. **The Guardian reports** that an inventory at one shop listed live wolf pups, golden cicadas, scorpions, bamboo rats, squirrels, foxes, civets, hedgehogs (probably porcupines), salamanders, turtles and crocodiles.

As far as we know, bats and pangolins weren't listed, but authorities in China will have intelligence on what animals were being sold, says Prof Ball. "If the spillover's happened once, you want to know whether or not this sort of thing can happen again, because it's important from a public health standpoint," he says. "And so you need to know exactly what species of animal it's in and also what were the risks that gave rise to that spillover event."

Many of the viruses we have become familiar with in recent years have crossed over from wild animals. This is the story of Ebola, HIV, Severe Acute Respiratory Syndrome (Sars) and now coronavirus. Prof Jones says the rise in infectious disease events from wildlife might be because of our increasing ability to detect them, growing connectivity to each other, or more encroachment into wild habitats, thereby "changing landscapes and coming into contact with new viruses the human population hasn't seen before".



Bats being sold at an Indonesian market this month

If we understand the risk factors, we can take steps to prevent it happening in the first place without adversely affecting wild animals, says Prof Cunningham. Conservationists are at pains to point out that although bats are thought to carry many viruses, they are also essential for ecosystems to function. "Insectivorous bats eat huge volumes of insects such as mosquitoes and agricultural pests, while fruit bats pollinate trees and spread their seeds," he says. "It is imperative that these species are not culled through misguided 'disease control' measures." After Sars in 2002-3, caused by a very similar coronavirus to the one now emerging in China and beyond, there was a temporary ban on wild animal markets. But the markets quickly sprang up again across China, Vietnam and other parts of south-east Asia. China has again suspended the buying and selling of wild-animal products, which are commonly used for food, fur and in traditional medicines. **Reports** suggest this may be made permanent.

While we may never know exactly how or where the disease responsible for many deaths made the leap into humans, Prof Diana Bell of the University of East Anglia says we can prevent another "perfect storm". "We are bringing together animals from different countries, different habitats, different lifestyles - in terms of aquatic animals, arboreal animals and so on - and mixing them together and it's a kind of melting pot - and we've got to stop doing it."

Pangolins: Rare insight into world's most trafficked mammal

By Helen Briggs
BBC News, Science and Environment
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A study is being conducted by conservationists from Chester Zoo

The secret life of the world's most trafficked mammal, the pangolin, has been caught on camera in Africa.

Footage gives a rare insight into the behaviour of the giant pangolin, the largest of all the scaly animals. Observed by remote-operated cameras, a baby takes a ride on its mother's back, while an adult climbs a tree. Scientists are releasing the footage to highlight the plight of the animals, which are being pushed to extinction by illegal hunting for scales and meat.

Large numbers of their scales have been seized this month alone, including Malaysia's biggest-ever interception of smuggled pangolin products.

The images and video clips of giant pangolins, one of four species in Africa, were taken at Uganda's Ziwa sanctuary, where the animals live alongside protected rhinos and are safe from poaching.

Stuart Nixon of Chester Zoo's Africa Field Programme said much of their behaviour has never been recorded before.

"We know so little about this species, almost everything we're picking up on camera traps this year as a behaviour is a new thing," he told BBC News.



The giant pangolin: The largest of the eight species

Pangolins

Sometimes called scaly anteaters, they are the only mammals in the world to be covered in protective scales

Their scales are made of keratin, the same material found in human fingernails

Pangolins lap up ants and termites with their long sticky tongues

There are four species in Africa -the African white-bellied pangolin, giant ground pangolin, ground pangolin and black-bellied pangolin

The giant pangolin, found in the rainforests and grasslands of equatorial Africa, is the biggest, measuring up to 1.8m long and weighing up to 75lbs.

The pangolin is said to be the most widely trafficked mammal in the world.

Its scales are in high demand in Asia for use in traditional Chinese medicine, despite there being no medical benefit for their use, while its meat is considered a delicacy in some countries.

What's the secret to saving this rare creature?

This week, authorities in Malaysia seized more than 27 tonnes of pangolins and their scales - believed to be worth at least £1.6m - on Borneo, in the biggest such haul in the country.



They are regarded as a delicacy in some countries

The wildlife monitoring group Traffic said police had discovered two big pangolin-processing facilities stocked with thousands of boxes of meat in the eastern state of Sabah.

"It is hoped that comprehensive investigations can lead to unmasking the syndicate and networks operating from the state and beyond," said Kanitha Krishnasamy, Traffic's director in Southeast Asia.

The discovery comes just days after 10 tonnes of scales were intercepted in Vietnam, Hong Kong and Uganda.

Scientists say the plight of the animals looks bleak, and they have no idea how many are left in the wild.



Pangolin scales intercepted on Borneo

Stuart Nixon, who is working in collaboration with the Uganda Wildlife Authority and the Rhino Fund Uganda on the project, said they are encountered so rarely in the wild that there is not enough data to allow a decent estimate.

A study is under way to survey and monitor giant pangolins at the site as the first step towards identifying their strongholds.

"This species is literally being wiped out, it's being obliterated across central Africa, there's no doubt about that," he added. "Trying to get people engaged and to care about pangolins is really the key step."

Sam Mwandha of the Uganda Wildlife Authority added: "These rare glimpses into the lives of giant pangolins are very exciting for those of us dedicated to protecting Uganda's rich wildlife and challenges us to ensure that we protect and conserve this highly threatened species for future generations."

Pangolin survival: How 'following the money' could save lives

By Alexandria Reid, Cathy Haenlein & Tom Keatinge
Royal United Services Institute
10 October 2018



Around the world, the illegal wildlife trade is having a devastating effect on many species of animal. Targeting profits made by those involved could help protect them.

Animals - both dead and alive - are being bought and sold on an industrial scale as food, pets, medicines and even ornaments.

The trade affects a huge range of species from great apes to helmeted hornbills, but arguably none more so than the pangolin.

These unusual-looking creatures are prized in some countries for their meat and scales and are thought to be **the world's most trafficked mammal**, with about 100,000 a year snatched from the wild and sent to Vietnam and China.

Global attention is often focused on species such as elephants and rhinos - and in many countries the populations of these animals has plummeted. In Tanzania, for example, elephant numbers fell by 60% from 109,000 in 2009, to just over 43,000 in 2014, according to **government figures**.

The hidden driver behind this trade is a basic one: the pursuit of profit.

Illegal wildlife trafficking is worth
\$7bn-\$23bn
 every year

100,000 African elephants poached for ivory in 2010-2012

1,215 South African rhinos poached in 2014, up from 14 a year in 1990-2005

1 in 4 countries have conducted financial investigations into wildlife crimes

1 in 10 have investigated the criminal networks behind illegal wildlife trading

Source: Interpol, UN, South African Department of Environmental Affairs, PNAS



'Follow the money'

For each of these trafficked animals, money changes hands - across the palms of corrupt officials, between those involved in the trade on the ground and on the internet.

Yet these money flows are often overlooked in the fight to curb the illegal wildlife trade. At **a conference in London this week**, financial approaches to dismantling the criminal networks involved will be discussed.

Rather than "follow the money", the most common approach remains that of "follow the animal".

This is despite the huge figures involved.



Although impossible to calculate precisely, the illegal wildlife trade has been valued at somewhere between **\$7bn (£5.4bn) and \$23bn (£17.6bn) a year**.

Much of this money is exchanged physically between individuals, but large amounts also pass through banks.

Protected species

Promisingly, some recent efforts have been made to disrupt the flow of money.

For example, in Uganda three people were charged following the seizure of 1.3 tonnes of ivory in 2017. They were charged not only with unlawful possession of protected species, but also with money laundering - involving the transfer of \$190,000 between accounts in Laos and Uganda.

And in 2014, Thailand's Anti-Money Laundering Office led an investigation into a syndicate trafficking wildlife from Thailand to China. The investigation resulted in the seizure of assets worth more than \$36m.



The possibilities offered by following the money were further demonstrated by a prosecution linked to another conservation crime in Indonesia, in 2014.

There, a junior police officer was jailed for 15 years by the country's Supreme Court for money laundering, illegal logging and fuel-smuggling. Evidence showed around \$127m had passed through his bank accounts.

However, such cases remain few and far between.

Part of the reason for this is that tracking the money linked to the illegal wildlife trade requires expertise and sufficient resources - something that is lacking in many countries.

Financial investigations also require many different parties to work together. This might include wildlife agencies, financial intelligence units and asset recovery units - some of whom are not used to talking to each other.

Freezing, seizing and confiscating

But given the scale of the continuing crisis facing endangered animals, financial intelligence gathering could be a key tool for protecting them.

By targeting those who profit most from the trade in threatened species, the motive - making money - can be removed.

Freezing, seizing and confiscating assets can strip perpetrators of both the proceeds of their crime and the means to reinvest in future illegal activity.



Yet recent research by the United Nations Office on Drugs and Crime and the Royal United Services Institute (Rusi) suggests that this opportunity is often overlooked.

In most cases involving the illegal wildlife trade, convictions are secured by proving possession of animals, or their parts. These are crimes that often result in only minimal penalties - fines and short prison sentences - making it a relatively low-risk activity.

It often remains the case that "success" is measured in terms of yearly figures for seizures of banned wildlife products.

This contrasts sharply with other international crimes, such as drug-trafficking, where financial investigations and the seizure of money and other assets are priorities.

At this week's London conference, a key theme will be treating the illegal wildlife trade as an international, organised crime.

There are no easy wins in this fight.

But so long as we fail to target the proceeds of the trade, we risk failing to catch its most serious offenders.

Pangolins: Hong Kong finds 'record' haul of scales in shipping container

1 February 2019



Pangolin: The most trafficked mammal in the world

A record eight tonnes of pangolin scales and more than 1,000 elephant tusks have been seized from a shipping container in Hong Kong, officials say.

The container, from Nigeria and said to be carrying frozen beef, was searched after a tip-off.

The illegal cargo has an estimated value of about \$8m (£6m). Two arrests were made, officials say.

The scales of the pangolin, an endangered anteater, are said to have medicinal value in parts of Asia.



Customs officers in Hong Kong said the shipment contained 8,300kg of pangolin scales (left)

They have previously been smuggled into countries from Africa in huge quantities, with the pangolin thought to be the world's most trafficked mammal.

On Friday, Hong Kong customs officers said they had seized some 8,300kg of pangolin scales and 2,100kg of ivory tusks hidden inside the container, AFP news agency reports.

They added that the shipment, which was bound for Vietnam, was "a record quantity for a seizure of pangolin scales".



Pangolins are sought after for the unproven medicinal properties of their scales

A man and a woman from a trading company were arrested in Hong Kong, the customs department said.

It is difficult to determine how many pangolins would have been killed to make 8,300kg of scales as there are three species of the anteater ranging in weight from about 2kg to 35kg, Dr Helen O'Neill from the Zoological Society of London told the BBC.

Why are pangolins trafficked?

These unusual-looking creatures are the world's most scaly animal. All eight species are endangered because they are hunted for their scales and meat - and are now protected under international law.

The scales, which are made from nothing more than keratin, the same material that makes up human fingernails and hair, are sought after for their unproven medicinal properties.

Some 100,000 pangolins are snatched every year from the wild and sent to Vietnam and China.

This has led to their numbers falling drastically.

Beijing hasn't released a full list of the wild animals included in the ban, but the current Wildlife Protection Law gives some clues as to what could be banned. That law classifies wolves, civet cats and partridges as wildlife, and states that authorities "should take measures" to protect them, with little information on specific restrictions.

The new ban makes exemptions for "livestock," and in the wake of the ruling animals including pigeons and rabbits are being [reclassified as livestock](#) to allow their trade to continue.

Billion-dollar industry

Attempts to control the spread of diseases are also hindered by the fact that the industry for exotic animals in China, especially wild ones, is enormous.

A government-sponsored report in 2017 by the Chinese Academy of Engineering found the country's wildlife trade was [worth more than \\$73 billion](#) and employed more than one million people.

Since the virus hit in December, almost 20,000 wildlife farms across seven Chinese provinces have been shut down or put under quarantine, including breeders specializing in peacocks, foxes, deer and turtles, according to local government press releases.

It isn't clear what effect the ban might have on the industry's future -- but there are signs China's population may have already been turning away from eating wild animals even before the epidemic.

A study by Beijing Normal University and the China Wildlife Conservation Association in 2012, found that in China's major cities, a third of people had used wild animals in their lifetime for food, medicine or clothing -- only slightly less than in their previous survey in 2004.

However, the researchers also found that just over 52% of total respondents agreed that wildlife should not be consumed. It was even

higher in Beijing, where more than 80% of residents were opposed to wildlife consumption.

In comparison, about 42% of total respondents were against the practice during the previous survey in 2004.

Since the coronavirus epidemic, there has been vocal criticism of the trade in exotic animals and calls for a crackdown. A group of 19 academics from the Chinese Academy of Sciences and leading universities even [jointly issued a public statement](#) calling for an end to the trade, saying it should be treated as a "public safety issue."

"The vast majority of people within China react to the abuse of wildlife in the way people in other countries do -- with anger and revulsion," said Aron White, wildlife campaigner at the Environmental Investigation Agency.

"I think we should listen to those voices that are calling for change and support those voices."



A vendor sells three peacocks at a wildlife animals market in Guangzhou, January 2004.

Traditional medicine loophole

A significant barrier to a total ban on the wildlife trade is the use of exotic animals in traditional Chinese medicine.

Beijing has been [strongly promoting](#) the use of traditional Chinese medicine under President Xi Jinping and the industry is now worth an estimated \$130 billion.

As recently as October 2019, [state-run media China Daily](#) reported Xi as saying that "traditional medicine is a treasure of Chinese civilization embodying the wisdom of the nation and its people."

Many species that are eaten as food in parts of China are also used in the country's traditional medicine.

The new ban makes an exception made for wild animals used in traditional Chinese medicine. According to the ruling, the use of wildlife is not illegal for this, but now must be "strictly monitored." The announcement doesn't make it clear, however, how this monitoring will occur or what the penalties are for inadequate protection of wild animals, leaving the door open to abuse.

A 2014 study by the Beijing Normal University and the China Wildlife Conservation Association found that while deer is eaten as a meat, the animal's penis and blood are also used in medicine. Both bears and snakes are used for both food and medicine.

Wildlife campaigner Aron White said that under the new restrictions there was a risk of wildlife being sold or bred for medicine, but then trafficked for food. He said the Chinese government needed to avoid loopholes by extending the ban to all vulnerable wildlife, regardless of use.

"(Currently), the law bans the eating of pangolins but doesn't ban the use of their scales in traditional Chinese medicine," he said. "The impact of that is that overall the consumers are receiving are mixed messages."

The line between which animals are used for meat and which are used for medicine is also already very fine, because often people eat animals for perceived health benefits.

In a study published in *International Health* in February, US and Chinese researchers surveyed attitudes among rural citizens in China's southern provinces to eating wild animals.

One 40-year-old peasant farmer in Guangdong says eating bats can prevent cancer. Another man says they can improve your vitality.

"I hurt my waist very seriously, it was painful, and I could not bear the air conditioner. One day, one of my friends made some snake soup and I had three bowls of it, and my waist obviously became better. Otherwise, I could not sit here for such a long time with you," a 67-year-old Guangdong farmer told interviewers in the study.

Changing the culture

China's rubber-stamp legislature, the National People's Congress, will meet later this year to officially [alter the Wildlife Protection Law](#). A spokesman for the body's Standing Committee said the current ban is just a temporary measure until the new wording in the law can be drafted and approved.

Hong Kong virologist Leo Poon said the government has a big decision to make on whether it officially ends the trade in wild animals in China or simply tries to find safer options.

"If this is part of Chinese culture, they still want to consume a particular exotic animal, then the country can decide to keep this culture, that's okay," he said.

"(But) then they have to come up with another policy -- how can we provide clean meat from that exotic animal to the public? Should it be domesticated? Should we do more checking or inspection? Implement

some biosecurity measures?" he said.

An outright ban could raise just as many questions and issues.

Ecohealth Alliance president Peter Daszak said if the trade was quickly made illegal, it would push it out of wet markets in the cities, creating black markets in rural communities where it is easier to hide the animals from the authorities.

Driven underground, the illegal trade of wild animals for consumption and medicine could become even more dangerous.

"Then we'll see (virus) outbreaks begin not in markets this time, but in rural communities," Daszak said. "(And) people won't talk to authorities because it is actually illegal."

Poon said the final effectiveness of the ban may depend on the government's willpower to enforce the law. "Culture cannot be changed overnight, it takes time," he said.