



Suffering at scale – pangolin poaching for the traditional medicine trade

Investigating pangolin hunting in Assam, India



Contents

Executive summary.....	04
Highly trafficked and suffering for trade – the pangolins’ plight.....	05
Pangolin fact file.....	06
Collecting the evidence	07
Assam research background.....	07
Our approach and methodology.....	07
Our findings.....	08
Moving the world for pangolin protection.....	09

Cover: Highly trafficked: More than a million pangolins are believed to have been killed for the traditional Asian medicine trade between 2000 - 2013.

Moving the world for wildlife

World Animal Protection moves the world to protect animals. During 2017 we gave 321 million animals better lives through our campaigns that focus on animals in the wild; animals in disasters and animals in farming. We work to end the exploitation of wild animals used for trade across the globe. We bring people, industry and governments together to drive the sustainable changes needed to keep wild animals in the wild where they belong.



“Pangolins are at real risk of becoming extinct – the demand for their meat and unique scales for traditional medicine is well documented. But this new evidence takes our understanding of why it’s such an issue to a new level. Not only is this a major conservation concern – it’s a huge animal welfare concern too.”

**Kate Nustedt, World Animal
Protection director, animals in the wild**

Executive summary

Huge numbers of pangolins are cruelly slaughtered every year. This is to fuel the demand for their meat and scales for use in traditional Asian medicines that are widely considered ineffective. These shy, insect-eating, scaled animals, native to around 51 countries, are the world's most highly hunted and trafficked mammal¹. More than 10 million are estimated to have been killed and traded between 2000 and 2013².

India is a source for the pangolin trade³. World Animal Protection and Oxford University researchers working in Assam, northeast India, found people in remote tribal communities selling one pangolin for the equivalent of four months' average income.⁴

They also obtained shocking footage of the horrific suffering inflicted on these gentle creatures. They found evidence of them being smoked out of trees, bludgeoned with machetes and then thrown, sometimes alive, into boiling water to remove their scales. Pangolin scales are made of keratin – the same protein that makes up human fingernails.

The two-year research project – the first ever socioeconomic review of pangolin poaching in Assam and entirely funded by World Animal Protection – focused on traditional hunting practices. It involved interviews with 141 local male hunters belonging to the Biate, Karbi and Dimasoi tribes. The project is part of World Animal Protection's wider international research focusing on the impacts of traditional medicine on wildlife.

Gaining critical understanding

The research aimed to identify a pangolin's worth to rural hunters in this region, how they were hunted and the reasons for doing so. Such understanding is critical in finding local, national and global solutions to give these unique animals long-term protection.

Researchers found that people are encouraged to hunt pangolins for their scales to sell to urban middlemen. The scales are then passed up the trade chain to make traditional Asian medicine widely used in Vietnam and China. The financial rewards, only a fraction of the scales' international street value in China and Vietnam, tempt the hunters to partake in illegal activity that they would not have done normally.

In Vietnam and China, pangolin scale products are believed to treat impotence and infertility⁵. They are also believed to improve blood circulation, stimulate lactation in nursing mothers, and cure skin disorders and wound infections⁶. However, there is no evidence of pangolins' curative properties, and adverse reactions to pangolin consumption have been reported. These include bloating, jaundice and liver damage⁷.

Pangolins are protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The commercial trade in them is forbidden under CITES Appendix I.

Experts are concerned that poaching, coupled with the pangolins' naturally low rates of reproduction, are pushing them to the brink of extinction⁸. The illegal global trade in pangolins is now recognised as the biggest contributor to their demise⁹. The pain and suffering involved is unacceptable.

Urgent action is needed

To combat the trade in their bodies and scales, and to protect pangolins from the unimaginable suffering they endure, we are calling for:

- strong enforcement of national and international laws that protect them
- removal of pangolins from the Pharmacopoeia of the People's Republic of China – the definitive traditional medicine handbook for anyone working in the industry
- investment in and promotion of herbal and synthetic alternatives
- combined and coordinated efforts by governments, NGOs and the traditional Asian medicine community to eliminate consumer demand for pangolin-based traditional Asian medicines, particularly in China and Vietnam
- support for alternative livelihoods, alleviation of poverty and education programmes within rural communities wherever pangolins are found globally, to stop the slaughter.

Highly trafficked and suffering for trade – the pangolins’ plight

Pangolins are recognised as the world’s most highly trafficked mammal¹⁰, but until recently most people were unaware of these unique animals and the cruelty they endure. The magnitude of their plight in both numbers and suffering is huge.

More than a million are believed to have been killed and traded between 2000–2013 primarily for the traditional Asian medicine trade¹¹. And between 2010–2015 there were 1,270 reported seizures in 67 countries and territories across six continents. This involved 120 tonnes of body parts, whole animals and scales, plus an additional 46,000 individual carcasses¹².

Awareness of pangolin trafficking has been raised in a variety of ways, particularly over social media channels focussing on numbers captured and accompanying distressing images. Landmarks include the designation of World Pangolin Day (third Saturday in February) and David Attenborough naming the pangolin as one of 10 species to save from extinction¹³.

Trading ban

Recognition of the pangolin’s precarious position led to a global commercial trade ban. This was issued by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and became effective from September 2016.

All eight species of pangolin – four Asian and four African – are threatened with extinction in the 5 countries where they live¹⁴. And CITES considers the pangolin so threatened that it lists all species in CITES Appendix I which includes other threatened species such as African grey parrots, Asian elephants and tigers. Individual countries, such as India, also have internal wildlife legislation protecting the pangolin.

However, because the pangolin trade starts in remote rural communities in some of the world’s poorest countries, detection and enforcement of national and international legislation is difficult.

Cruel slaughter

In these communities, pangolins are hunted and cruelly slaughtered for their scales and meat. They endure unimaginable suffering. They can be smoked and dragged out of their trees and burrows, bludgeoned with clubs and machetes, or men boiled – sometimes alive, for their scales. The process of digging out can last for many hours exacerbating the animals’ extreme stress and terror.

Pangolin carcasses, scales and body parts are sold to urban middlemen who sell them into the illegal trade to Vietnam and China. Here, medicines made from pangolin scales are believed to have a wide range of properties including curing impotence and infertility, stimulating lactation in nursing mothers and curing skin disorders and treating wound infections¹⁵.

An investigation by the wildlife trade-related Non-Governmental Organisation (NGO) WildAid found that 70% of Chinese citizens believe pangolin products have medicinal value¹⁶. However, there is little scientific evidence supporting this belief. Pangolin scale use is linked with adverse side effects including bloating, loss of appetite, abnormal liver function and jaundice¹⁷.

Below: Heating up: Researchers found pangolins are typically suffocated from their burrows with smoke, stuffed into sacks, beaten unconscious and boiled alive.



“Pangolin scale is poisonous and should not be used in overdose. It suggests this should be forbidden in cases of deficiency of both Qi and blood, bursted boils, and pregnant women.”

www.chineseherbshealing.com/pangolin-chuna-shan-jia

Right: Two species: the Indian pangolin (Endangered), pictured, and the Chinese pangolin (Critically Endangered) currently occur in Northeast India.



Pangolin fact file

There are eight species of pangolin – four Asian and four African; all are threatened within the 51 countries where they live¹⁸. They are nocturnal, solitary creatures and they usually live in hollow trees or burrows. They are the only scaled mammal in the world.

Pangolin scales overlap and are made of keratin, the same protein that makes up fingernails, and are designed to protect pangolins from predators. When under attack pangolins typically roll up into a defensive ball.

This protective behaviour, coupled with the scales, can work well to protect pangolins from predators like lions and hyenas. However, they give little defence against people. Hunters can simply pick them up and carry them away.

Because of their long snouts, tongues and diet of ants and other small insects, pangolins are often described as scaly anteaters, but they are more closely related to cats, bears and racoons¹⁹.

Depending on the species, pangolins can weigh from 1kg to 33kg and measure from 85cm to 1.8m nose to tail²⁰. The largest pangolin species is the giant pangolin (*Smusia gigantea*) and the smallest, the black-bellied pangolin (*Phataginus tetradactyla*).

Pest controllers

These shy creatures are extremely valuable to both people and the ecosystem. They protect crops because they are natural pest controllers and reduce the need for toxic insecticides. Each pangolin can eat up to around 70 million insects each year²¹. They also help aerate the soil with their long snouts, tongues and claws as they search for food.

Pangolins do not reproduce quickly. Although mating seasons and gestation periods vary among species, for example: Indian pangolins (*Manis crassicaudata*) give birth to just one young after a gestation of around 65/70 days²². Newborn pangolin babies have soft scales; they are carried around on their mother's backs for three months until the scales harden²³. They stay with their mothers for around six months in total. Indian pangolin babies are usually born between January and April²⁴.

Attempts to get pangolins to live and reproduce in captivity have largely failed. Their life expectancy should be around 20 years, but in captivity most die within just three years; mortality rates are around 70% in the first year²⁵.

There are inherent welfare issues associated with captive breeding of all wildlife, and because pangolins have highly specialised diets and weak immune systems, they are highly unsuitable for being kept in captivity²⁶.

Collecting the evidence

Assam research background

India, along with countries throughout Africa and Southeast Asia, is a source country for the pangolin trade. The focus of our investigation was rural Assam State in northeast India.

Most villages in this region are far from modern conveniences, paved roads and rail. Local people are mostly subsistence farmers, hunters and gatherers.

Selling pangolins for commercial gain in India is illegal under Schedule 1 of the Wildlife (Protection) Act 1972. However, there are some potential loopholes as some native tribal communities are permitted to hunt them outside protected areas in certain circumstances for personal use. Rural people in these regions have traditionally hunted pangolins for their meat and for their scales. They may wear the scales as amulets or use them as medicine that they believe will treat conditions such as haemorrhoids,²⁷ and they believe that the meat will treat malaria and other stomach problems²⁸.

There are two species of pangolins in this area – the Indian pangolin (*Manis crassicaudata*) and the Chinese pangolin (*Manis pentadactyla*). The Indian pangolin is classified as endangered and the Chinese pangolin is classified as critically endangered according to the International Union for Nature Conservation's (IUCN) Red List of Threatened Species.

Our approach and methodology

Understanding the scale and type of use of wildlife products, the drivers of commercial trade and what motivates people to engage in illegal trade activity is crucial in developing effective interventions.

We wanted to discover the worth of pangolins to rural hunters in this region, the reasons for hunting pangolins and potential pangolin protection solutions.

To find this information our study focused on three of the predominant indigenous peoples – the Biate, the Dimas and the Karbi.

Our team of four local field staff researchers interviewed 14 male hunters in 3 villages between January and October 2017. All hunters had caught at least one pangolin over the past five years. The hunters primarily described themselves as farmers, hunters, or labourers. Most had dependent children.

Interviewees were asked a set of open-ended, closed and multiple choice questions. Researchers received informed verbal consent from every participant before they were interviewed, in accordance with the British Sociological Association Statement of Ethical Practice (2017). Participants were made aware of their rights to voluntarily participate or to decline and all participants are anonymous on the research database.

Below: Selling scales: Researchers found that hunters are being used by illegal traders to source pangolins for the substantial profits involved with selling their scales, rather than for traditional medicine.



Our findings²⁹

Hunters explained that pangolins were mostly captured at night by being dug from their burrows around 2.5m underground. They also said pangolins are forced from their tree holes with smoke, or by cutting or burning down the tree. Escaping pangolins were picked up or caught with a spear. Peak pangolin hunting takes place between March and May.

But not all pangolins are hunted by being forced out of their homes. The researchers were told that pangolins found in the open roll themselves into balls for defence. This makes it easy for hunters to pick them up, put them in a bag and carry them home.

Five pangolins, taken back to hunters' homes, were killed by being hit on the head repeatedly or by cutting their head with a knife. They were then boiled for their scales and eaten for their meat. Although most hunters said the animals were usually dead before boiling, some were clearly being boiled alive.

Seventy-nine hunters said they had caught a pangolin at least once in the last 12 months and two reported capturing more than three pangolins in the last 12 months. One hundred and twenty-five hunters believed there were fewer pangolins than five years ago.

All but two of the 41 hunters confirmed hunting pangolins for both personal and commercial use. All hunters confirmed they have hunted pangolins for both personal and commercial use. Although most hunters said they ate the meat when they caught a pangolin, most didn't like it or preferred other bush meat. Hunting was done in groups – particularly when pangolins needed digging out – or individually. Income gained by group pangolin hunting was shared among group members.

Some interviewees said pangolin sales helped them cover their debts or pay for medical treatment for their families. One said it was the "happiest moment of [his] life" when he caught a big pangolin.

Almost all – 36 – hunters said they sold the scales. They said they assumed they would be used for medicines, protections from termites and good luck charms. Some hunters said they were most likely to travel to the city to sell the scales and meat, but others reported that buyers were coming to rural communities to buy them direct.

The investigation revealed that a sale of one pangolin is the equivalent of a full year's income to an Assam hunter on the lowest of incomes. It's also the equivalent of four months of an Assam hunter's average income. Group hunting of pangolins is common; and even if the money is split among all group members a hunter can still earn a month's income.

Researchers found hunters still using pangolins for traditional reasons – for the meat although it wasn't a favourite – for the scales for jewellery, medicine – to treat haemorrhoids, and to deter termites. However, it was clear that international trade was affecting hunter behaviour and incomes in this impoverished area. Local people are being drawn into illegal activity because of the lucrative nature of it. The researchers also felt the hunters were unaware of the conservation status of the pangolins and the suffering caused to the animals by hunting and killing them.

“Increasing international demand driven by traditional Asian medicine is making pangolins a lucrative catch and it's clear that these animals are being exploited for commercial gain. Scales from just one pangolin can offer a life-changing sum of money for people in these communities. But it's in no way sustainable and the numbers of pangolins in the wild are beginning to plummet.”

Gilbert Sape, World Animal Protection - Wildlife, Not Medicine campaign head

Researchers also found that hunters were not killing pangolins out of malice. Most interviewees said they strongly liked pangolins: 61.7% (8/) and 29.8% (42) quite liked them. None disliked them. Several said they felt pangolins were important to the environment by eating termites that killed trees and by creating holes for other animals to live in.



Above: Scales stripped: After slaughtering and boiling the pangolins, poachers butcher them and peel off the scales so that they can sell them to middlemen further up the trade chain.

Conclusion

Moving the world for pangolin protection

Just 10 years ago pangolins were very virtually unheard of and few knew of their suffering for the traditional Asian medicine trade. Today they are icons – representative of the exploitation of our planet's precious wildlife⁹⁰. But such recognition is not enough to save them from brutal slaughter and extinction.

Our Assam research shows how people in rural communities are still being driven and exploited to hunt these gentle creatures to meet market demand. And what is happening in Assam is just a small fraction of the cruelty inflicted on pangolins elsewhere.

To combat the global trade in their bodies and scales, and to protect pangolins from the unimaginable suffering they endure we are calling for:

- strong enforcement of national and international laws that protect them
- removal of pangolins from the Pharmacopoeia of the People's Republic of China – the definitive traditional medicine handbook for anyone working in the industry

- investment in and promotion of herbal and synthetic alternatives
- combined and coordinated efforts by governments, NGOs and the traditional Asian medicine community to eliminate consumer demand for pangolin-based traditional Asian medicines, particularly in China and Vietnam
- support for alternative livelihoods, alleviation of poverty and education programmes within rural communities wherever pangolins are found globally, to stop the slaughter.

The world must move now to protect pangolins from pain and suffering in all countries where they occur.

References

- ¹ Aisher A (2016) Scarcity, Alienity and Value: Decline of the Pangolin, the World's Most Trafficked Mammal, *Conservation and Society* 14: 317-329.
- ² Challender DWS, Warman C, Baillie JFM (2014a) Scaling up pangolin conservation. IUCN SSC Pangolin Specialist Group Conservation Action Plan, Zoological Society of London, London, P:16
- ³ Manocha, R K., Panda S., Nair, M.V., Acharya, J.N., Challender D.W.S., (2015); A note on the illegal trade and use of pangolin body parts in India, *TRAFFIC Bulletin* 27(1): 33-40.
- ⁴ D'Cruze, N., Singh, B., Mookerjee A., Herringon I.A., Macdonald, D.W., (2018); A socio-economic survey of pangolin hunting in Assam, Northeast India, *Nature Conservation* in press
- ⁵ Boakye, M K., Petersen, D.W., Kotzé A., Dalton, D.L., Jansen, R. (2014) Ethnomedicinal use of African pangolins by traditional medical practitioners in Sierra Leone. *Journal of Ethnobiology and Ethnomedicine* 10:76. doi:10.1186/1746-4269-10-76
- ⁶ Challender DWS, Harrop SR, MacMillan DC (2015) Understanding markets to conserve threatened species in CITES. *Biological Conservation* 187: 249-259. <https://doi.org/10.1016/j.biocon.2015.04.015>
- ⁷ WildAid (2017, September); Pangolins on the brink. Retrieved from <http://wildaid.org/wp-content/uploads/2017/09/WildAid-Pangolins-on-the-brink.pdf> 11
- ⁸ CITES (2017) Consideration of proposals for amendment of Appendices I and II. Seventeenth meeting of the Conference of the Parties, Johannesburg (South Africa), 24 September – 5 October 2016. <https://cites.org/eng/cop/17/prop/index.php>
- ⁹ Zhang M, Gouveia A, Qin T, Quon R (2017) Illegal pangolin trade in northernmost Myanmar and its links to India and China. *Global Ecology and Conservation* 10: 23-31
- ¹⁰ Aisher A (2016) Scarcity, Alienity and Value: Decline of the Pangolin, the World's Most Trafficked Mammal. *Conservation and Society* 14: 317-329
- ¹¹ Challender DWS, Warman C, Baillie JFM (2014a) Scaling up pangolin conservation. IUCN SSC Pangolin Specialist Group Conservation Action Plan, Zoological Society of London, London, P:16
- ¹² Heinrich, S., Wilman, T.A., Ross, J.V., Shepherd, C.R., Challender, D.W.S., Cassey, P. (2017); The global trafficking of pangolins: a comprehensive summary of seizures and trafficking routes from 2010 to 2015, *TRAFFIC Southeast Asia*, Petaling Jaya, Selangor, Malaysia
- ¹³ Harrington, I., D'Cruze, N., Macdonald, D., (2018); Rise of online vendors, media activity, and public interest in pangolins and pangolin trade, 2005 – 2016, *Nature Conservation* in press.
- ¹⁴ CITES (2017) Consideration of proposals for amendment of Appendices I and II. Seventeenth meeting of the Conference of the Parties, Johannesburg (South Africa), 24 September – 5 October 2016. <https://cites.org/eng/cop/17/prop/index.php>
- ¹⁵ Challender, D.W.S., Harrop, S.R., MacMillan, D.C. (2015) Understanding markets to conserve threatened species in CITES. *Biological Conservation* 187: 249-259
- ¹⁶ WildAid (2017, September); Pangolins on the brink. Retrieved from <http://wildaid.org/wp-content/uploads/2017/09/WildAid-Pangolins-on-the-brink.pdf> ?
- ¹⁷ WildAid (2017, September); Pangolins on the brink. Retrieved from <http://wildaid.org/wp-content/uploads/2017/09/WildAid-Pangolins-on-the-brink.pdf> 11
- ¹⁸ CITES (2017) Consideration of proposals for amendment of Appendices I and II. Seventeenth meeting of the Conference of the Parties, Johannesburg (South Africa), 24 September – 5 October 2016 <https://cites.org/eng/cop/17/prop/index.php>
- ¹⁹ Murphy, W., Fizirk, F., Johnson, W., Zhong, Y., Rycer, O., O'Brien, S. *Molecular phylogenetics and the origins of placental mammals. Nature*. 2007 Feb 1, 409(6870):614-8
- ²⁰ CITES (2017) Consideration of proposals for amendment of Appendices I and II. Seventeenth meeting of the Conference of the Parties, Johannesburg (South Africa), 24 September – 5 October 2016. <https://cites.org/eng/cop/17/prop/index.php>
- ²¹ WildAid (2017, September); Pangolins on the brink. Retrieved from <http://wildaid.org/wp-content/uploads/2017/09/WildAid-Pangolins-on-the-brink.pdf> 4
- ²² IUCN Pangolin Specialist Group, Indian Pangolin <https://www.pangolinsg.org/pangolins/ncicnpangolin/>



Right: Unimaginable suffering: Pangolins have become an icon of the illegal wildlife trade in the media, but very little has been shared of the suffering they face.

²³ CITES (2017) Consideration of proposals for amendment of Appendices I and II. Seventeenth meeting of the Conference of the Parties, Johannesburg (South Africa), 24 September – 5 October 2016. <https://cites.org/eng/cop/17/prop/index.php>

²⁴ Mahmood, T., Irshad, N., Hussain, R., Akrim, F., Hussain, I., Anwar, M., Rais, M., Nadeem, M. (2015) Breeding habits of the Indian pangolin (*Manis crassicaudata*) in Potohar Plateau, Pakistan, *Mammalia* 80(2): 231-234. [10.1515/mammalia-2014-0153](https://doi.org/10.1515/mammalia-2014-0153)

²⁵ WildAid (2017, September) Pangolins on the brink. Retrieved from <http://wildaid.org/wp-content/uploads/2017/09/WildAid-Pangolins-on-the-brink.pdf> 8

²⁶ WildAid (2017, September) Pangolins on the brink. Retrieved from <http://wildaid.org/wp-content/uploads/2017/09/WildAid-Pangolins-on-the-brink.pdf> 8

²⁷ D’Cruze, N., Singh, B., Mookerjee A., Harrington I.A., Macdonald, D.W., (2018) A socioeconomic survey of pangolin hunting in Assam, Northeast India in press

²⁸ Mondocha, R., Panda, S., Nair, M., Acharyya, I., Chatterjee, D., (2015) A note on the illegal trade and use of pangolin body parts in India, *TRAFFIC Bulletin* 27(1): 33-40

²⁹ D’Cruze, N., Singh, B., Mookerjee A., Harrington I.A., Macdonald, D.W., (2018) A socioeconomic survey of pangolin hunting in Assam, Northeast India in press

³⁰ Harrington, I.A., D’Cruze, N., Macdonald, D.W., (2018) Rise to fame: events, media activity, and public interest, in pangolins and pangolin trade, 2005 – 2016, *Nature Conservation* in press

We are World Animal Protection.

We end the needless suffering of animals.

We influence decision makers to put animals on the global agenda.

We help the world see how important animals are to all of us.

We inspire people to change animals' lives for the better.

We move the world to protect animals.

Contact us

World Animal Protection

222 Grays Inn Road, London, WC1X 8HB

T: +44 (0) 7239 0500

F: +44 (0) 7239 0654

E: info@worldanimalprotection.org

Web worldanimalprotection.org

Fb/[WorldAnimalProtectionInt](https://www.facebook.com/WorldAnimalProtectionInt)

Tw/[@MoveTheWorld](https://twitter.com/MoveTheWorld)