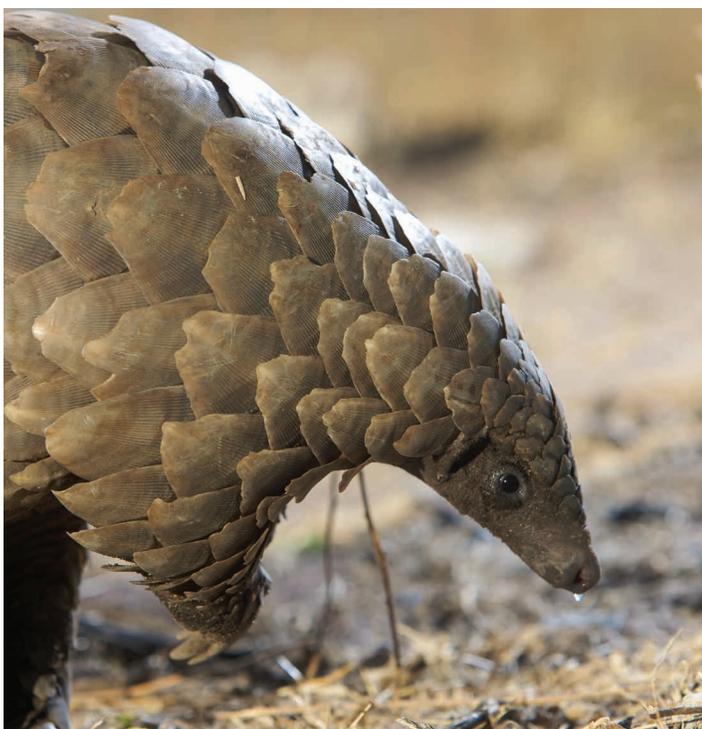


Pangolins and the Criteria for Listing in CITES Appendix I

BACKGROUND ON CITES

The Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) seeks to ensure that international trade in wild animals and plants does not threaten their survival. All eight species in the pangolin family are currently listed in Appendix II of CITES. This listing provides a modest level of protection, requiring exporting countries to ensure that any traded pangolin specimens have been legally obtained and that their export will not be detrimental to the species' survival. The four Asian pangolin species are additionally subject to a zero commercial export quota for specimens removed from the wild and traded for primarily commercial purposes, although illegal international trade in these species remains rampant. As explained below, because all eight pangolin species clearly meet the definition of an Appendix I species—each is “affected by trade” and “threatened with extinction”—all eight species should be transferred to Appendix I at the 17th meeting of the Conference of the Parties to CITES.



THE CRITERIA FOR LISTING ON CITES APPENDIX I

Pursuant to Article II, paragraph 1, of CITES, “Appendix I shall include all species threatened with extinction, which are or may be affected by trade.”

AFFECTED BY TRADE

Pangolins are clearly “affected by trade.” Under Res. Conf. 9.24 (Rev. CoP16), a species “is or may be affected by trade” if “it is known to be in trade and that trade has or may have a detrimental impact on the status of the species.”

First, pangolins are undisputedly “in trade.” In the decade leading up to 2014, an estimated one million pangolins were taken from the wild for illegal international trade, making them the “most heavily trafficked wild mammal in the world.”¹ Evidence indicates illegal trade is growing, as the number of pangolin seizures reported in the media has more than tripled during the past decade (Table 1; Figure 1). Indeed, the estimated number of pangolins seized in the past five years is double that seized during the mid-2000s (Figures 1 and 2).



TABLE 1: SELECTED LARGE SEIZURES OF PANGOLINS AND THEIR PARTS SINCE 2010

YEAR	LOCATION OF SEIZURE	COMMODITY	APPROXIMATE WEIGHT (KG)
2010	Vietnam	Scales	2,000
2010	China	Frozen Pangolins and scales	9,432
2011	Indonesia	Frozen Pangolins and scales	6,690
2011	Indonesia	Frozen Pangolins + Scales	7,500
2012	China	Scales	1,540* *Seizure also included several thousand kilograms of frozen pangolins
2012	Indonesia	Frozen Pangolins	5,000
2013	Phillipines	Frozen Pangolins	10,000
2013	Kenya	Scales	534
2014	Cameroon	Scales	1,500
2014	Hong Kong	Scales	3,340* *Two separate seizures
2015	Uganda	Scales	2,000
2015	Vietnam	Scales	4,000
2015	Indonesia	Frozen Pangolins and scales	5,100
2015	India	Scales	10,000
2015	China	Frozen Pangolins	11,500

Source: Media Reports

Increasing demand for pangolin parts is driving surging prices. In Vietnam, the price per kilogram has increased rapidly since 1990.² In China, the value of one kilogram of pangolin scales has increased by 250 percent over the past five years.³ Similar trends are seen in Africa. For example, the monetary value for *Manis temminckii* increased in Zimbabwe from \$5,000 to \$7,000 per specimen in just two years.⁴ And in Nigeria, the price of pangolins has increased tenfold over the past five years.⁵

Second, trade is having “a detrimental impact on the status of the species.” The International Union for Conservation of Nature (IUCN) Pangolin Specialist Group identified poaching for illegal international trade in live animals, meat, scales, and other body parts destined primarily for Asia—mainly China and Vietnam—as the main threat to all pangolin species.⁶ As populations of two of the Asian species (*M. pentadactyla* and *M. javanica*) have plummeted due to overexploitation for commercial purposes, wildlife traffickers have increased take of the two other Asian species.⁷

Similarly, international trade threatens the African pangolin species, as the precipitous decline in Asian pangolin populations has led the Asian market to start sourcing pangolins from Africa.⁸ For example, prior to 2013, there were no recorded shipments of pangolins from Africa to Asia that exceeded 500 kilograms, but between January and June of 2015 alone, eight tons of scales and skins were seized en route from Congo, Kenya, Nigeria, and Uganda to Asia,

with four of the six seizures greater than 500 kg.⁹ In addition, exports of wild-source pangolin scales from Uganda (3,198 kg) and Congo (750 kg) to China represented 100 percent of legal international trade in scales reported in 2014, further confirming the shift to African species to meet Asian demand. This trend is expected to continue or increase as all Asian species decline rapidly.¹⁰

Therefore, pangolins are clearly “affected by trade” according to CITES criteria.

THREATENED WITH EXTINCTION

Pangolins are clearly “threatened with extinction.” Res. Conf. 9.24, Annex 1, states that a species is “threatened with extinction” if it meets, or is likely to meet, at least one of several biological criteria, including exhibiting:

- C. A marked decline in the population size in the wild, which has been either:
 - i. observed as ongoing or as having occurred in the past (but with a potential to resume); or
 - ii. inferred or projected on the basis of any one of the following:
 - a decrease in area of habitat;
 - a decrease in quality of habitat;
 - levels or patterns of exploitation;
 - a high vulnerability to either intrinsic or extrinsic factors; or
 - a decreasing recruitment.

Each pangolin species meets Criterion C because each is observed to have suffered or is inferred or projected to suffer a “marked decline” in population due to “levels or patterns of exploitation,” decrease in area and quality of habitat, and a high vulnerability to intrinsic factors (low reproductive output, low density) and extrinsic factors (habitat loss, reduction in recruitment due to indiscriminate offtake).¹¹

All eight pangolin species are listed on the IUCN Red List of Threatened Species, with two Asian species listed as Critically Endangered (*M. pentadactyla* and *M. javanica*), two Asian species listed as Endangered (*M. crassicaudata* and *M. culionensis*), and the four African species listed as Vulnerable (*M. temminckii*, *M. gigantea*, *M. tetradactyla*, and *M. tricuspis*).¹² The best available science indicates that all eight species are experiencing a decreasing population trend (Table 2).

As can be seen in Table 2, the Critically Endangered and Endangered Asian species have in the past or are projected to decline in the future by at least 50 percent, which is clearly a “marked decline” as defined in CITES Res. Conf. 9.24 (Rev. CoP16): “[A] general guideline for a marked recent rate of decline is a percentage decline of 50% or more in the last 10 years or three generations, whichever is the longer” (the Resolution does not define the term for future projected rate of decline). While the maximum projected decline for the Vulnerable African species is 40 percent in three generations, they still meet the definition of “marked decline” because Res. Conf. 9.24 (Rev. CoP16) also states, “However, these

figures are presented only as examples, since it is impossible to give numerical values that are applicable to all taxa because of differences in their biology.” Considering the low reproductive output of pangolins, a 40 percent decline is “marked.”

Pangolins typically produce only one offspring per year,²¹ making them highly vulnerable to intrinsic factors.²² Some species are also highly vulnerable to extrinsic factors, including potentially unsustainable levels of hunting for local consumption (food and traditional medicine), which threaten all African pangolin species.²³ Indeed, a recent study found that the proportion of pangolins hunted as part of the total vertebrates hunted across sub-Saharan Africa and the Congo Basin increased ninefold from 2005 to 2014 alone.²⁴ Most pangolin species have also suffered a “decrease in habitat” due to agricultural expansion and deforestation.²⁵

Additionally, according to IUCN, the “apparently rapid growth in demand from Asia . . . indicate[s]” that the current IUCN Vulnerable assessments for African pangolins may “need to be revised.”²⁶ It also appears that many pangolin species have been extirpated or much diminished in parts of their historic range.²⁷ This includes not only Asian species but also African pangolin species, which have, for example, been almost completely eliminated from parts of northern Nigeria.²⁸

Because the Appendix I criteria require that only one of these five factors be met, each of these facts alone, when combined with pangolins’ marked projected decline in the wild, makes it clear that pangolins are “threatened with extinction.”

In light of the above, pangolins are both “threatened with extinction” and “affected by trade” pursuant to CITES criteria and therefore meet the CITES criteria for an Appendix I listing.

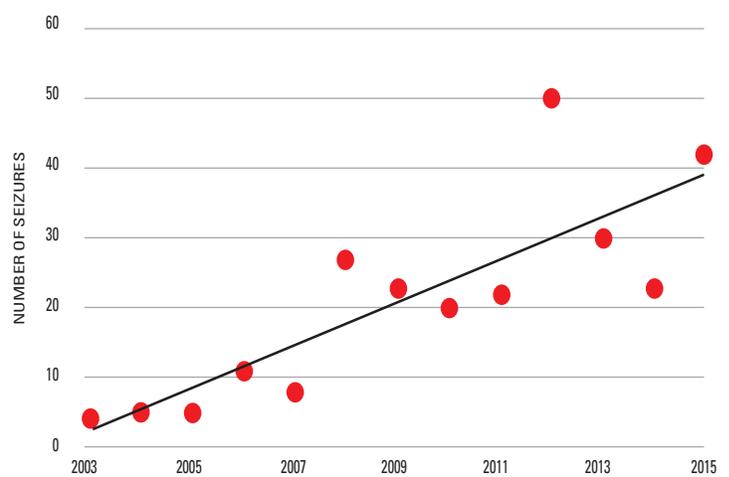
TABLE 2: IUCN STATUS OF PANGOLIN SPECIES	
SPECIES	IUCN ASSESSMENT (2014)
<i>Manis javanica</i>	Critically Endangered. Suspected declines of <80% over the last 21 years (generation length estimated at 7 years), and projected continuing declines of >80% over the next 21 years. ¹³
<i>Manis pentadactyla</i>	Critically Endangered. Predicted continuing declines of <90% over the next 21 years (three generations). ¹⁴
<i>Manis culionensis</i>	Endangered. Suspected populations declines of >50% over a period of 21 years (three generations; generation length estimated at 7 years). ¹⁵
<i>Manis crassicaudata</i>	Endangered. Suspected population declines of at least 50% in the next 21 years (generation length estimated at 7 years). ¹⁶
<i>Manis gigantea</i>	Vulnerable. Will continue to decline by at least 40% over a 27-year period (9 years past, 18 years future). ¹⁷
<i>Manis temminckii</i>	Vulnerable. Inferred past/ongoing and projected future population reduction of 30–40% over a 27-year period (9 years past, 18 years future; generation length estimated at 9 years). ¹⁸
<i>Manis tricuspis</i>	Vulnerable. Will continue to decline by at least 40% over a 21-year period (7 years past, 14 years future). ¹⁹
<i>Manis tetradactyla</i>	Vulnerable. Projected to undergo a population decline of at least 30–40% over a 21-year period (7 years past, 14 years future; generation length estimated at 7 years). ²⁰

LISTING ALL PANGOLIN SPECIES IN APPENDIX I WILL IMPROVE ENFORCEMENT AND CONTROL OF TRADE

Pangolin scales are difficult to distinguish to the species level, particularly when traded in powdered form.²⁹ Listing all species in Appendix I avoids the enforcement problem that would arise if species were listed on different appendices—a problem we already see with a zero-export quota being applied to the four Asian species, but not the African ones.

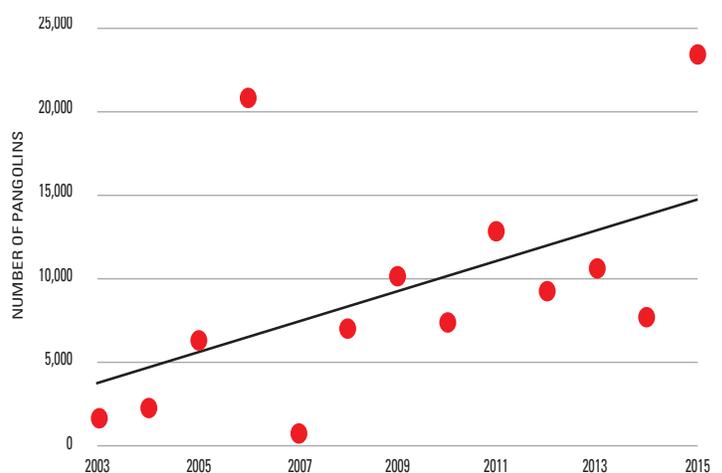
Listing all eight pangolin species under Appendix I of CITES would provide stronger protection, barring commercial trade in all pangolin species and placing “dual control” over remaining trade by requiring both importing and exporting countries to issue permits and bolster domestic protections for these imperiled species.

FIGURE 1: THE NUMBER OF SEIZURES OF PANGOLINS AND THEIR PARTS FOUND IN MEDIA REPORTS SINCE 2003



Source: Media Reports

FIGURE 2: THE ESTIMATED NUMBER OF PANGOLINS SEIZED PER YEAR SINCE 2003



Source: Media Reports³⁰

ENDNOTES

- 1 Challenger, D. et al., "Scaling Up Pangolin Conservation: IUCN SSC Pangolin Specialist Group Conservation Action Plan," Zoological Society of London, 2014.
- 2 Challenger, D. et al., "*Manis pentadactyla*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/full/12764/0.
- 3 Lin, J., "Pangolins in Peril: What Conservation Has to Do With Global Security," *Georgetown Journal of International Affairs*, August 21, 2014, journal.georgetown.edu/pangolins-in-peril-what-conservation-has-to-do-with-global-security/.
- 4 Pietersen, D. et al., "*Manis temminckii*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/12765/0.
- 5 Central African Republic, Chad, Côte d'Ivoire, Gabon, Guinea, Kenya, Ivory Coast, Liberia, Nigeria, Senegal, South Africa, Togo, and United States, Proposal for Transfer of *Manis tetradactyla*, *M. tricuspis*, *M. gigantea* and *M. temminckii*, from CITES Appendix II to Appendix I (citing E. Ehi-Ebewele, deputy director, Federal Dept. of Forestry, Nigeria, *pers. comm.*, February 2016).
- 6 Challenger, D. et al., "Scaling Up Pangolin Conservation."
- 7 Challenger, D., "Asian Pangolins: Increasing Affluence Driving Hunting Pressure," *TRAFFIC Bulletin* 23, no. 3 (September 2011): 92-93.
- 8 Ibid.
- 9 Shepherd, C.R., et al., "Taking a Stand Against Illegal Wildlife Trade: The Zimbabwean Approach to Pangolin Conservation," *Оryx* (April 27, 2016): 1-6.
- 10 Challenger, D., "Asian Pangolins."
- 11 Additionally, *Manis culionensis* meets the criteria for listing in Appendix I under the Criteria Resolution, Annex I, paragraph B (iv.) because it is endemic to the Palawan faunal region of the Philippines and has a "restricted area of distribution" (about 5,500 mi²) combined with past and ongoing population declines. Lagrada, L., S. Schoppe, and D. Challenger, "*Manis culionensis*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/136497/0; Schoppe, S. and R. Cruz, "The Palawan Pangolin *Manis culionensis*," in Pantel, S. and S. Chin. (eds.), *Proceedings of the Workshop on Trade and Conservation of Pangolins Native to South and Southeast Asia*, June 30 to July 2, 2008, Singapore. TRAFFIC Southeast Asia, Petaling Jaya, Selangor, Malaysia: 171-183.
- 12 Challenger, D. et al., "Scaling Up Pangolin Conservation."
- 13 Challenger, D., et al., "*Manis javanica*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/12763/0.
- 14 Challenger, D. et al., "*Manis Pentadactyla*."
- 15 Lagrada, L., S. Schoppe, and D. Challenger, "*Manis culionensis*."
- 16 Baillie, J. et al., "*Manis crassicaudata*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/12761/0.
- 17 Waterman, C. et al., "*Manis gigantea*," IUCN Red List of Threatened Species, version 2104.3, 2014, www.iucnredlist.org/details/12762/0.
- 18 Pietersen, D. et al., "*Manis temminckii*."
- 19 Waterman, C. et al., "*Manis tricuspis*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/12767/0.
- 20 Waterman, C., et al., "*Manis tetradactyla*," IUCN Red List of Threatened Species, version 2014.3, 2014, www.iucnredlist.org/details/1276/0.
- 21 Zhou, Z., et al., "Scaling Up Pangolin Protection in China," *Frontiers in Ecology and the Environment* 12 (2014): 97-98..
- 22 Gaubert, P., "Family Manidae (Pangolins)," in Wilson, D.E. and R.A. Mittermeier (eds.), *Handbook of Mammals of the World Vol. 2. Hoofed Mammals*. Lynx Edicions: Barcelona (2011).
- 23 Boakye, M.K. et al., "Knowledge and Uses of African Pangolins as a Source of Traditional Medicine in Ghana," *PLoS One* 10, vol. 1 (January 2015); Boakye, M.K. et al., (2014). "Ethnomedical Use of African Pangolins by Traditional Medical Practitioners in Sierra Leone," *Journal of Ethnobiology and Ethnomedicine* 10, vol. 76 (November 2014), www.ethnobiomed.com/content/10/1/76.
- 24 Ingram, D.J., L. Coad, and J. P.W. Scharlemann, (2016) "Hunting and Sale of Pangolins Across Sub-Saharan Africa: A Preliminary Analysis," *Offtake Working Paper No. 1*, sro.sussex.ac.uk/59416/1/OFFTAKE%202016%20Hunting%20and%20sale%20of%20pangolins%20across%20Sub-Saharan%20Africa_FINAL.pdf.
- 25 Challenger, D. et al., "Catalyzing Conservation Action and Raising the Profile of Pangolins—The IUCN-SSC Pangolin Specialist Group," *Asian Journal of Conservation Biology* 1, (2012): 140-141.
- 26 Shepherd, C.R. et al., "Taking a Stand."
- 27 Challenger, D. et al. "Scaling Up Pangolin Conservation"; Baillie, J. et al., "*Manis crassicaudata*"; Challenger, D. et al., "*Manis pentadactyla*."
- 28 Central African Republic, Chad, Côte d'Ivoire, Gabon, Guinea, Kenya, Ivory Coast, Liberia, Nigeria, Senegal, South Africa, Togo and United States, Proposal for Transfer.
- 29 Ibid.; Hsieh et al., "Establishing the Pangolin Mitochondrial D-Loop Sequences from the Confiscated Scales," *Forensic Science International: Genetics* 5, no. 4 (August 2011): 303-307.
- 30 Data were compiled using media reports of the number of individual pangolins, weight of pangolin scales, and weight of meat seized. Weight of scales and meat were converted to numbers of pangolins using conversion factors based on the average weight of pangolins. An average total body weight is estimated at 6.29 kg. The calculation was arrived at by averaging the weights of the eight pangolin species based on the following information: Average body weight of *Manis javanica* is estimated at 8 kg. Hogg, S. "Where Are the Pangolins?" *Malayan Naturalist* 56 (2003): 38-41. Average body weight of *Manis pentadactyla* is estimated at 4.85 kg. Heath, M.E., "*Manis pentadactyla*," *Mammalian Species* 414 (December 1992): 1-6. Average body weight of *Manis crassicaudata* is estimated at 9.5 kg. Irshad, N., T. Mahmood, and M. S. Nadeem, (2015). "Morpho-Anatomical Characteristics of Indian pangolin (*Manis crassicaudata*) from Potohar Plateau, Pakistan," *Mammalia*, ahead of print 02/2015, DOI: 10.1515/mammalia-2014-0179. Average weight of *Manis culionensis* is estimated at 2.1 kg. Gaubert, P., and A. Antunes, "Assessing the Taxonomic Status of the Palawan Pangolin *Manis culionensis* (Pholidota) Using Discrete Morphological Characters," *Journal of Mammalogy* 86, no. 6 (December 2005): 1068-1074. Average body weight of *Manis gigantea* is estimated at 12 kg. Tikki Hywood Trust, email message to author, February 6, 2015. Average body weight of *Manis tricuspis* is estimated at 2 kg. Ibid. Average body weight of *Manis tetradactyla* is estimated at 2.2 kg. Ibid. Average body weight of *Manis temminckii* is estimated at 9.7 kg. Ibid.

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