



◀ A male Sunda Pangolin *Manis javanica* in captivity after being recovered from illegal trade in Viet Nam.

While there is little information on the biology, ecology and population status of pangolins in Asia, it is known that the species are in serious decline throughout their collective range. This is the result of persistent illegal hunting of Asian pangolins for illicit international trade, largely to supply demand in China for meat and scales used in traditional medicines (Wu *et al.*, 2004; Duckworth, 2008).

When CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) came into force in 1975, all species of Asian pangolin recognized at the time—the Sunda Pangolin *Manis javanica*, Chinese Pangolin *M. pentadactyla* and Indian Pangolin *M. crassicaudata*—were listed in Appendix II. Throughout the 1980s and 1990s, tens of thousands of pangolin skins, as well as leather products such as wallets, belts and handbags, were traded internationally each year, reportedly derived from Sunda Pangolins. The destination for most of the skins was Japan, the USA and Mexico, where they were used to produce boots and shoes. Far less trade was reported as comprising the Chinese or Indian species. However, the accuracy with which the different species were distinguished from each other and subsequently reported to CITES has been questioned. Trade in pangolin scales in the 1990s for traditional medicine was also strong according to CITES

data, which likely reflected a growing awareness of the trade and improved reporting. All trade was reported to be derived almost exclusively from Sunda Pangolins and was destined for East Asia, especially China and Hong Kong, but also Singapore.

Simultaneously, the 1990s saw trade in pangolins and pangolin products in South-east Asia, e.g. between Viet Nam and China (CITES, 2000a), that was not recorded in CITES annual reports, and which may have been unlicensed and therefore illegal. Following a decline in pangolin populations in China as a result of heavy collection pressure to satisfy domestic demand for medicinal purposes, the supply of pangolin scales since the early 1990s has largely been dependent on imports from other range States, for example Lao PDR, Viet Nam and Myanmar (CITES, 2000a).

Inherent in regulating the trade in pangolins is the difficulty in distinguishing between different species, particularly when dealing solely with scales. It is partly for this reason that all extant pangolin species, including the African species, were listed in CITES Appendix II in 1995 (the Cape Pangolin *Manis temminckii* which was already listed in Appendix I, was downlisted to Appendix II) following the ninth meeting of the Conference of the Parties (CoP9) (CITES, 1994a). Again, in part due to the difficulty in identifying pangolins to species level, and in order to help countries in their efforts to control trade, zero export quotas were established for the three recognized Asian pangolin species (Sunda Pangolin, Chinese Pangolin and Indian Pangolin), for specimens removed from the wild and traded for primarily commercial purposes, following CoP11 in 2000 (CITES, 2000b). The Philippine Pangolin *Manis culionensis*, endemic to the Philippines, was also listed in CITES Appendix II with a zero export quota in September 2007 following its recognition as a species distinct from the Sunda Pangolin.

Trade since the introduction of zero export quotas

Despite the implementation of zero export quotas and legislative protection nationally in all but one range State, illegal hunting and international trade in Asian pangolins continues on a large scale. The several hundred seizures of pangolins in trade that have taken place over the past decade are evidence of this. These data also demonstrate that demand is both for scales and meat, primarily for commercial purposes (Table 1). China and other countries in the region such as Viet Nam are the principal destinations for these transactions. Pangolin scales, both whole and in powdered form, are used in traditional Chinese medicines to treat a variety of medical conditions, including psoriasis, infertility, to improve blood circulation, treat asthma, and even cancer (Duckworth *et al.*, 2008). This use takes place despite a

Year	Location of seizure	Commodity	Approximate weight (t)
2001	Hong Kong	scales	2.7
2004	Taiwan	scales	1.4
2006	Hong Kong	scales	4.4
2008	Viet Nam	frozen pangolins	*23
2008	Indonesia	frozen pangolins	14
2010	China	frozen pangolins	7.8
2011	Viet Nam	frozen pangolins	4.7
2011	India	scales	1.2
2011	Indonesia	frozen pangolins	1.7

Table 1. Selected seizures of pangolins and pangolin derivatives post 2000. Source: media reports

*Two combined seizures in the first quarter of 2008.

lack of scientific evidence that pangolin scales have any medicinal properties. Pangolin meat is consumed in restaurants serving wild meat and is believed, among other things, to nourish the kidneys (Pantel and Chin, 2009).

Increasing affluence, which has led to an increase in the number of people now willing and able to pay the high prices pangolin products command, is understood to be underlying demand today (TRAFFIC, 2008; Duckworth *et al.*, 2008). Price increases in the past few years and a persistent demand support this assumption (Wu and Ma, 2007). Further, it is understood that local consumption across much of South-east Asia—a practice once widespread historically—has largely been abandoned to take advantage of the economic benefits that result from international trade in pangolins and/or their derivatives.

As noted, demand for pangolins in China was previously met with supply nationally and from specimens imported from neighbouring countries. Today, however, pangolin populations are understood to have been severely depleted in parts of their range, a fact attributed to hunting for international trade (Duckworth *et al.*, 2008). This is understood to have caused the harvesting of pangolins to shift southwards (TRAFFIC Southeast Asia, 2004). The bulk of demand today is currently being met with supplies of Sunda Pangolins from both Malaysia and Indonesia, whose populations are under extreme hunting pressure as the figures in Table 1 suggest. Further, it is also reported that the Philippine Pangolin is appearing in international trade. There is, moreover, an increasing body of evidence demonstrating that supply from South-east Asia is being supplemented with scales from India and Nepal, as testified by the increasing number of seizures from these countries, implicating populations of the Indian and Chinese pangolins in these States. All indications suggest that such contraband is bound for China.

While hunting for international trade is already thought to have caused severe reductions in South-east Asia's pangolins (Duckworth *et al.*, 2008), the above trend implies that pangolin populations Asia-wide are suffering as a result of illegal international trade. This presents a conservation challenge given the pervasiveness of the trade. While countries such as China and Viet Nam are end markets, in the past two years there have been seizures of pangolins and/or their derivatives in Cambodia, India, Indonesia, Malaysia, Myanmar, Nepal, Singapore, Thailand, as well as China and Viet Nam.

There is also strong domestic demand for pangolins by traditional medicine practitioners in certain African countries where the scales are used, *inter alia*, to protect against bad omens, ward off lions, bring good luck and to treat heart conditions (Marshall, 1998). However, there is also evidence of a potentially growing intercontinental trade in African pangolins between Africa and Asia. This development is one that was anticipated in the 1990s and it was suggested at the time that such trade may use rhinoceros horn and ivory trading routes between the two continents (CITES, 1994b). Over the last two years there have been a small number of pangolin-related seizures from Africa which have been destined for Asian markets.

For example, in 2009, 100 kg of '*Manis spp.*' scales were seized in transit from Côte d'Ivoire to Hong Kong. More recently, pangolin scales and elephant tusks were seized from a shipment of unprocessed timber from Chinese workers working for a Chinese logging company in Mozambique (Anon., 2011).

Whereas illegal hunting and international trade, driven by demand from China and Viet Nam, pose the greatest threat to pangolins in South-east Asia, evidence now suggests that populations elsewhere in Asia, such as those in India and Nepal, are subject to the same threat. While international trade in pangolins is undoubtedly having a detrimental effect on population levels, such pressure is unquantified owing to the paucity of research undertaken on Asian pangolins. Action of the utmost urgency is therefore required from governments, enforcement officers, Customs officers, researchers and NGOs if the dynamics of this illegal trade are to be understood, actions implemented to halt it, and the pressure of international trade on pangolin populations worldwide reduced.

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