

Several researchers have used seizures data to get an insight into the extent of the illegal wildlife trade (Underwood *et al.*, 2013; Nijman, 2010). Some of these analyses dealt with English-speaking countries and relied on English-language reports (Cowdrey, 2002; Alacs and Georges, 2008), whereas others included a range of non-English speaking countries or dealt with global illegal wildlife trade, yet still (largely) relied on English-language reports (e.g. Rosen and Smith, 2010). While reports of wildlife seizures in the media can be unreliable in any language, including misidentifications, lacking information on volumes, over-estimations of values, and a bias towards the more charismatic species, it is possible to glean valuable data from these reports when used with caution. Here data on seizures of pangolins *Manis* spp. in Indonesia, all assumed to be Sunda Pangolins *Manis javanica*—the only species native to Indonesia—as reported in the Indonesian media are analysed and compared to those reported in English; the source of the pangolins and their intended destination are identified, where possible, with the aim of bettering our understanding of the illegal trade in pangolins in Indonesia.

## BACKGROUND

The greatest threat to the conservation of pangolins is illegal hunting for trade, largely to supply demand in East Asia for meat and scales, the latter of which are used in tonics and traditional medicines (Li and Wang, 1999; Pantel and Chin, 2009; Challender, 2011). Pangolins are exceptionally vulnerable to over-exploitation as they are easily hunted and have a slow reproduction rate (Yang *et al.*, 2007; Challender, 2011). Large-scale commercial harvesting and international trade have been ongoing since at least the beginning of the 20th century. For instance Dammerman (1929), reports that the export of several metric tonnes of Sunda Pangolin scales from the Indonesian island of Java to China in the period 1925–1929 involved the killing of at least 4000–10 000 pangolins a year, despite the species being legally protected. Likewise, for the period 1958–1964, Harrison and Loh (1965) document the licensed export of over 60 000 kg of, most likely Sunda, pangolin scales originating from Indonesian Borneo via the Malaysian State of Sarawak to Singapore and Hong Kong; if three Sunda Pangolins are required to obtain one kilogramme of dried scales, this involved the killing of some 25 000 pangolins a year. Certainly in the last decades it has become clear that harvest and trade are unsustainable, with pangolins having become scarce in much of their former range (Shepherd, 2009).

All Asian pangolins have been listed in Appendix II since the inception of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in 1975, and since 2000 a “zero trade quota” has been in place for them. All Asian range countries of pangolins are party to CITES (Indonesia ratified the Convention in 1978) and therefore no international commercial trade is allowed to take place. Furthermore, in Indonesia the Sunda Pangolin has been legally protected since 1931, when the species was included in the 1925 *Wildlife Protection Ordinance* (Dammerman (1929) states that it “really has been protected since 1909” but it is unclear to which piece of legislation he refers). Currently it is listed in *Government Regulation No 7 on Conservation on Flora and Fauna of 1999*, which bans all trade in the species (Noerjito and Marjanto, 2001). Despite these strong regulations and protective measures, trade in pangolins in Indonesia and elsewhere in Asia is thriving (Pantel and Chin, 2009; Challender *et al.*, 2015). Indonesia has been identified as one of the key suppliers of the Chinese markets (Shepherd, 2009; Sopyan, 2009) and indeed in recent years Indonesia has been implicated in some of the largest pangolin seizures (Pantel and Chin, 2009). Because of the threats posed by the illegal wildlife trade, and because of dramatic declines in their population numbers, the Sunda Pangolin is currently listed as Critically Endangered according to IUCN threat criteria (Challender *et al.*, 2014).

Indonesia is a country of 220 million people, and in some estimates as many as 700 separate languages are spoken. In Indonesia, the Sunda Pangolin is restricted to the western part of the country where there are some 10 “regional” widely-spoken languages, with Javanese (~84 million speakers), Sundanese (~34 million speakers) and Madurese (~14 million speakers) being the most numerous (Lewis *et al.* 2014). However, throughout the island archipelago, the national *lingua franca* is Bahasa Indonesia, spoken by some 210 million people. Only a small proportion of Indonesians speak English and reporting by the authorities is invariably undertaken in Bahasa Indonesia, or in the words of Lauder (2008): “English has no wide use in society, is not used as a medium of communication in official domains like government, the law courts, and the education system, and is not accorded any special status in the country’s language legislation”. Nevertheless, there are several English language newspapers and magazines in circulation in Indonesia, the most popular being *Jakarta Post*, *Jakarta Globe*, *Bali Times* (daily) and *Tempo* (weekly), that report on national news, and of course significant events in Indonesia are reported in the wider English language newspapers.

## SURVEY FINDINGS

In July and October 2014 and January and July 2015, the internet was searched for articles, reports, blogs or posts related specifically to the seizure of pangolins in Indonesia, for the period 1 January 2012 to 31 July 2015. Search terms used were “BKSDA and *tenggiling*” and “Bea Cukai and *tenggiling*”, BKSDA standing for the government agency that is responsible for enforcing wildlife protection laws, Bea Cukai referring to the Customs agency, and *tenggiling* being the Indonesian word for pangolin. In addition, the English equivalents were searched for, adding “Indonesia” as a search term. The information was

# PANGOLIN SEIZURES DATA REPORTED

transferred to a database noting, where possible, the date, location, volume (alive, dead, mass, scales), and destination of the shipment. Seizures were sometimes reported by different sources, often, but not always, around the time of the seizure, and the same seizure could be referred to repeatedly in subsequent reports. Data were checked to ensure the seizures reported were made after 1 January 2012 and dates, locations and volumes were compared to be certain that individual seizures were not counted twice. When reports conflicted, the ones that appeared to be most reliable (this often being the report that contained

## IN THE INDONESIAN MEDIA

the most relevant information) were selected. Each entry in the database was then checked to see if it was reported in English as well, using specifics such as date, volume, location, from the Indonesian language reports.

Given that seizures were reported in various units of measurement (individuals, kilogrammes of bodies, kilogrammes of scales, etc.), all data were converted to individuals, assuming a mass of five kilogrammes for a whole pangolin and three pangolins providing one kilogramme of scales (Challender *et al.*, 2015: there are some indications that the average mass of a seized pangolin may be less as in Surabaya in May 2015, 455 frozen pangolins weighed 1390 kg, thus averaging just over three kilogrammes for a pangolin). When scales and bodies were reported for the same seizure, the larger figure in terms of individuals was used. By default, each seizure was treated as independent of each other, although it is acknowledged that there is a small possibility that a seizure of bodies without scales in one location can be linked to a seizure of scales in another.

A total of 45 seizures was recorded (Fig. 1). Twelve seizures were reported in 2012, 10 in 2013 and 17 in 2014 and six in the first seven months of 2015 (an additional seizure of 200 kg of scales made at Soekarno-Hatta airport in Jakarta on 26 January 2015 was excluded as it originated from Cameroon).

Seizures ranged from one live individual seized in Ambarawa, Central Java, in December 2014, through to the confiscation of a container with over 8500 kg of dead pangolins and close to 350 kg of pangolin scales in the Tanjung Priok harbour in Jakarta in November 2012, and 300 kg of scales seized in Bakauheni harbour, Lampung, southern Sumatra, in November 2014. A large seizure made in Belawan harbour, Medan, north Sumatra, in April 2015 was initially reported as comprising 3440 kg of frozen bodies, 100 kg of scales and 96 live pangolins, but later changed to 5000 kg of frozen pangolin bodies, 77 kg of scales and 96 live specimens; later still, when reporting on the burial of the carcasses this figure was reported as 3000 to 4000 pangolins. While these figures do not match up, from the photographs of the carcasses being buried it is clear that the seizure was large. A figure of 2000 frozen pangolins and 96 live pangolins is used in this analysis. Likewise, there

**A seizure in Medan, Indonesia, of 128 Sunda Pangolins *Manis javanica* from a boat heading to Malaysia across the Malacca Straits on 23 February 2013.**



Photographs:  
Directorate General Customs,  
Indonesia

were conflicting reports for the volumes of whole pangolins seized in December 2012 in West Java, with one report indicating 7400 kg and another 17 500 kg; the lower figure is used here. When all reports were converted to individuals, in total 11 575 pangolins were involved. The median size of the seizures was 51 individuals.

The smaller seizures often involved raids on small-scale traders' residencies or a search of cars at roadblocks, whereas the larger seizures invariably involved enforcement actions in seaports (e.g. 4124 kg of dead pangolins and 31.4 kg of scales in Merak in May 2012 or the aforementioned seizure in Jakarta, November 2012) or airports (288 pangolins at Juanda airport in Surabaya in December 2012, or 189 pangolin skins at Soekarno-Hatta airport in Jakarta in January 2013). Cities that featured prominently in the trade, both as places where pangolins were confiscated and as places to where shipments of pangolins were heading, were Jakarta and Surabaya in Java, Palembang and Medan in Sumatra and Palangkaraya in Kalimantan. These cities act as transit points for pangolins exported abroad, as was indeed found by Sopyan (2009) when investigating the pangolin trade in Sumatra in 2007–2008.

Geographically, 24 seizures were made on the island of Sumatra (in six of its 10 provinces, totalling 4046 pangolins), 14 seizures in Java (in all four provinces, 6736 pangolins) and seven in Kalimantan (in three of five provinces, 793 pangolins). The destination was only mentioned for eight of these shipments. A total of 2677 pangolins were destined for mainland China, Hong Kong or Taiwan, 3798 pangolins were headed for Viet Nam (for 2096 of these, Viet Nam was intended as a transit country, with China being the final destination), and 228 for Malaysia.

Of the 45 seizures, 29 were found to be reported in the Indonesian language only, five only in the English language and 11 were available in both languages. By relying on the Indonesian language only, about 1% (145/11 575) of the pangolins that were seized would have been missed, whereas by relying only on the English language reports, about 57% (6556/11 575) would have been missed.

The large number of seizures reported in the Indonesian language clearly point to a significant trade of pangolins in the country. The industrial-size scale of

several of the shipments, and the mode of transport—on containers, on buses or on lorries—clearly indicate large-scale movements within western Indonesia, whereas the seizures of pangolins in seaports or at airports highlight the international aspects of the trade. Using information from the various media reports allows conclusions to be drawn in terms of movements of pangolins, whether the trade is restricted to a specific region or involves cross-border trade, and even gives insights into the modus operandi of the traders and smugglers. Such information can be used to build intelligence networks in terms of trade dynamics, which can be fed back to the authorities. Repeating this exercise on a regular basis allows for the monitoring of enforcement actions over time.

The fact that the majority of pangolin seizures from Indonesia are not reported in the English language suggests that levels of trade, or at least the volume of seizures, may have been underestimated by some conservationists in the past (i.e. those working across countries or those that work at a global level), and justifies a reassessment of the levels of pangolin trade in other Asian societies in which English is not widely used.

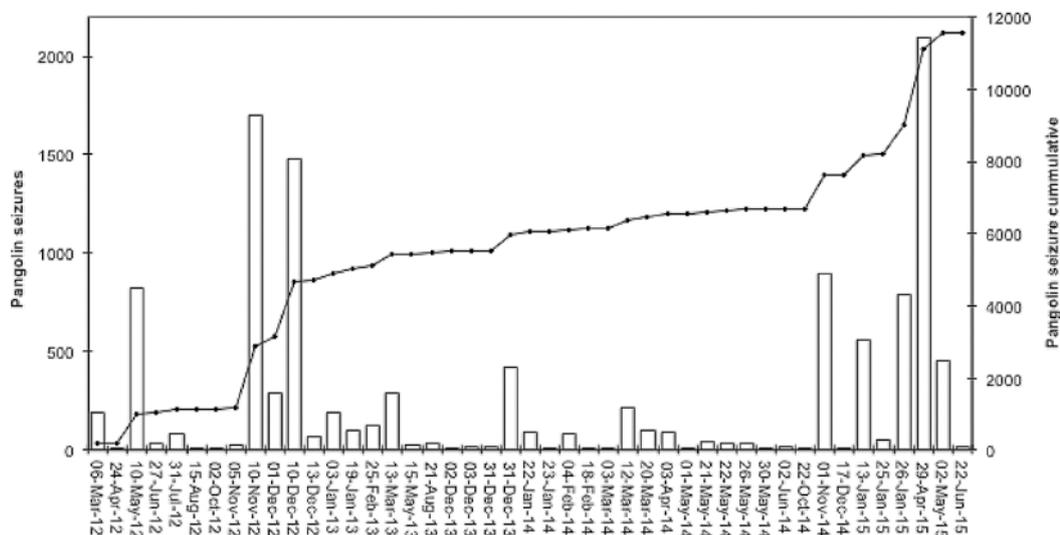
## ACKNOWLEDGEMENTS

The author thanks Erwin Sopyan and Chris R. Shepherd for sharing their insights into the Indonesian pangolin trade, and to TRAFFIC for providing him with a desk in Petaling Jaya. Sandrine Pantel and Sabine Schoppe kindly reviewed the paper.

## REFERENCES

- Alacs, E. and Georges, A. (2008). Wildlife across our borders: a review of the illegal trade in Australia. *Australian Journal of Forensic Sciences* 40:147–160.
- Challender, D.W.S. (2011). Asian pangolins: increasing affluence driving hunting pressure. *TRAFFIC Bulletin* 23:92–93.
- Challender, D.W.S., Nguyen Van, T., Shepherd, C.R., Krishnasamy, K., Wang, A., Lee, B., Panjang, E., Fletcher, L., Heng, S., Seah Han Ming, J., Olsson, A., Nguyen The Truong, A., Nguyen Van, Q. and Chung, Y. (2014). *Manis javanica*. IUCN Red List of Threatened Species. www.iucnredlist.org. Viewed on 23 October 2014.
- Challender, D.W.S., Harrop, S.R., and MacMillan, D.C. (2015). Understanding markets to conserve trade-threatened species in CITES. *Biological Conservation* 187:249–259.
- Cowdrey, D. (2002). *Switching Channels. Wildlife Trade Routes into Europe and the UK*. WWF/TRAFFIC, Cambridge.
- Dammerman, K.W. (1929). Preservation of wild life and nature reserves in the Netherlands Indies. *Proceedings of the 4th Pacific Science Congress, Java* 1929:1–91.
- Harrison, T. and Loh, C.Y. (1965). To scale a pangolin. *Sarawak Museum Journal* 12:415–418.
- Lauder, A. (2008). The status and function of English in Indonesia: a review of key factors. *Makara Sosial Humaniora* 12:9–20.
- Lewis, M.P., Simons, G.F. and Fennig, C.D. (2014). *Ethnologue: Languages of the World, 17th edition*. SIL International, Dallas. www.ethnologue.com
- Li, H. and Wang, H. (1999). Wildlife trade in Yunnan Province, China, at the border with Vietnam. *TRAFFIC Bulletin* 18:21–30.
- Nijman, V. (2010). An overview of the international wildlife trade from Southeast Asia. *Biodiversity and Conservation* 19:1101–1114.
- Noerjito, M. and Marjanto, I. (2001). *Jenis-jenis Hayati yang Dilindungi Perundang-undangan Indonesia*. LIPI, Cibinong.
- Pantel, S. and Chin, S.Y. (2009). *Proceedings of a Workshop on Trade and Conservation of Pangolins Native to South and Southeast Asia*. TRAFFIC South East Asia, Petaling Jaya.
- Sopyan, E. (2009). Malayan Pangolin *Manis javanica* Trade in Sumatra, Indonesia. Pp.134–142 in Pantel, S. and Chin, S.Y. (Eds). *Proceedings of a Workshop on Trade and Conservation of Pangolins Native to South and Southeast Asia*. TRAFFIC South East Asia, Petaling Jaya.
- Rosen, G.E. and Smith, K.F. (2010). Summarizing the evidence on the international trade in illegal wildlife. *EcoHealth* 7:24–32.
- Shepherd, C.R. (2009). Overview of pangolin trade in Southeast Asia. Pp.6–9 in Pantel, S. and Chin, S.Y. (Eds). *Proceedings of a Workshop on Trade and Conservation of Pangolins Native to South and Southeast Asia*. TRAFFIC South East Asia, Petaling Jaya.
- Underwood, F.M., Burn, R.W. and Milliken, T. (2013). Dissecting the illegal ivory trade: an analysis of ivory seizures data. *PLoS One* 8(10):e76539.
- Yang, C.W., Chen, S., Chang, C., Lin, M.F., Block, E., Lorentsen, R., Chin, J.S.C. and Dierenfeld, E.S. (2007). History and husbandry of pangolins in captivity. *Zoo Biology* 26:223–230.

Vincent Nijman, Oxford Wildlife Trade Research Group, Oxford Brookes University, Oxford, OX3 0BP, UK.  
Email: vnijman@brookes.ac.uk



**Fig. 1. Seizures of Sunda Pangolins *Manis javanica* in western Indonesia, 1 January 2012 to 31 July 2015.**

Shown are individual seizures (white bars) as well as the cumulative number of pangolins seized.