

PANGOLINS: The World's Most Hunted Animal

case study | biodiversity unit

Every five minutes a prehistoric looking creature resembling a cross between an anteater and an artichoke is seized from the wilderness, destined for illegal trade.¹ It is the pangolin, a small scaly mammal named from the Malay word for “rolling up” because of its propensity to curl into a ball when approached by predators. Currently threatened with **extinction**, the pangolin is thought to be one of the most widely trafficked mammals in the world.

What is a pangolin?

While their scales make them look almost reptilian and their behavior recalls anteaters and armadillos, pangolins' are mammals whose closest relatives are cats, dogs, and other creatures in the order Carnivora. There are eight species of pangolins alive today, four in Asia and four in Africa. Asian species can be found over much of the continent, from Pakistan and India, east to China and Southeast Asia. African pangolins live in most of the African countries south of the Sahara. Some pangolin species live entirely on the ground, while others, like the African tree pangolin, are good climbers.



A pangolin hunting for ants.

The species vary in size. The smallest weigh in at close to 3 pounds, while the largest top 70 pounds, about the size of an adult golden retriever. Pangolins have small heads and four legs, though they can walk on just the back two, balanced by a long tail. Their upper side is armored with scales made of keratin, the same substance in human hair and fingernails.

Pangolins are mostly active at night. Their strong sense of smell compensates for poor eyesight, allowing them to sniff out anthills and termite mounds. After clawing open the insect nests, pangolins fish out their meal with a sticky dexterous tongue, which can be as long as its body. They eat without teeth, their food ground up by a gizzard-like stomach. One adult can consume over 70 million insects each year.²

Compared with some other animals, pangolins reproduce relatively slowly, producing only one offspring per year. A mother nurses its six-inch baby for three to four months, carrying it on her back for foraging expeditions. Pangolins are very protective and reclusive, faring well when left alone in the wild, but generally not thriving in captivity.

A species in trouble

Unfortunately for the species, pangolins' scales and the strong odor they emit when frightened are not enough to protect them from humans. All eight species are threatened with extinction, according to the International Union for the Conservation of Nature (IUCN), with the four Asian types classified as endangered or critically endangered.

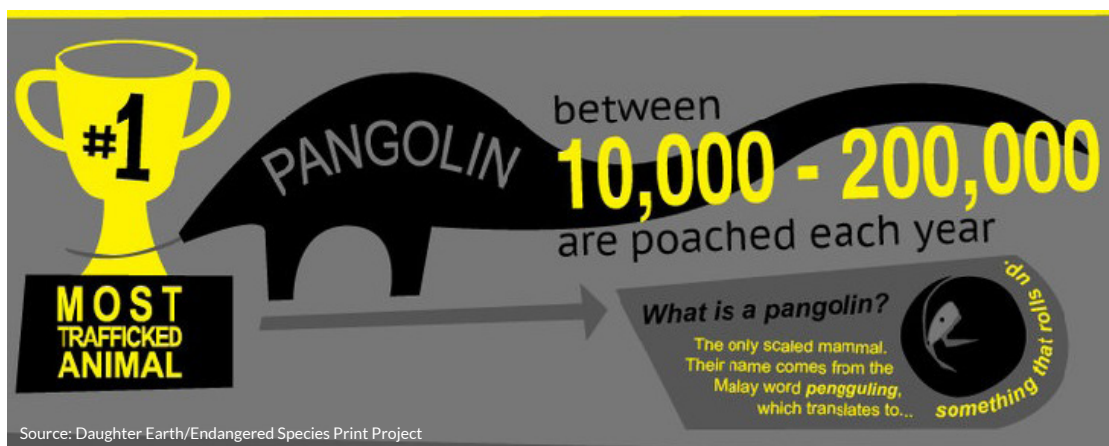
Pangolins are losing ground as **deforestation** and development shrink their habitats. In South Africa, many pangolin fatalities are linked to electric fences. But their biggest threat is capture for food and the supposed medicinal properties of their scales, despite being protected by regulations in most countries where they live.

Long hunted for bush meat, pangolin meat appears on the menu at high-end Vietnamese restaurants where it can cost \$700 a meal – a true status symbol, despite (or perhaps related to) its illegality.³ Pangolin meat consumption became illegal in 2014, but it is still a delicacy there as well.

Health claims associated with pangolin consumption are legion, while evidence is lacking. In traditional African medicine, different pangolin parts are associated with spiritual protection and healing of different ailments, such as rheumatism and infertility.⁴ Sellers in Chinese and Vietnamese markets hawk pangolin scales for improving blood circulation and curing a variety of ailments, from skin diseases to cancer.⁵ Researchers from Beijing Forestry University write in a 2014 letter in the journal *Science* that *Chinese Medicinal Pharmacopoeia* recommends roasted pangolin scales for “detoxification, draining pus, attenuating palsy, and stimulating lactation.”⁶

Vietnam driving pangolin demand

From the 1960s through the 1980s, an estimated 160,000 pangolins were harvested in China each year to meet strong domestic demand.⁷ Such heavy human **predation** led Chinese pangolin populations to decline. By the mid-1990s, pangolins were commercially extinct in China. Hunting pressure shifted abroad, first driving Chinese demand to Southeast Asia and then to parts of Africa.⁸ In recent years, intercontinental trade from Nigeria to Vietnam shows the demand for pangolins has also shifted from China to Vietnam, where laws around the pangolin trade are stricter, with penalties of up to 15 years in jail.⁹



International movement of threatened wildlife and wildlife products is regulated under the **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)**, which came into force in 1975. Up until October 2016, trade in pangolins was controlled by export permits, with limited success. At the 17th meeting of CITES that month, the Convention approved an international trade ban on all eight pangolin species.¹⁰

Some question whether such a ban will have an effect on the pangolin population, given that most trade in pangolins was already illegal. Trafficking is lucrative business. Rising demand, falling supply, and increasing risk from expanded regulations have caused prices for live pangolin and their parts to climb. Since the 1990s scale prices have risen from less than \$6 per pound to over \$340 per pound.¹¹ As prices have gone up, so has the size of illegal shipments. The volume of pangolin cargo seized between Africa and Asia has increased ten-fold since the early 2000s.¹²

Wildlife trafficking: a \$20 billion-a-year business

In some cases, seized pangolin shipments have also included a more widely known trafficked product: elephant ivory. For example, a 2012 shipment from Nigeria involved 6,600 pounds of pangolin meat and 2,700 pounds of scales, also contained nearly 500 pounds of elephant ivory.¹³ In Vietnam in 2015, customs officials seized 8,800 pounds of pangolin scales together with 2,255 pounds of elephant ivory.¹⁴ Another shipment of pangolins and ivory intercepted in Togo in 2014 also contained teak logs.¹⁵ Following the 2018 Chinese ivory ban, the price of ivory plummeted and the ratio of ivory to pangolin parts reversed. Seized shipments now contain far more pangolin parts than ivory.¹⁶

Thousands of species of mammals and reptiles and about one-third of the world's bird species are traded internationally, many illegally.¹⁷ Live animals are moved for the pet trade and medical research, sometimes falsely labeled as "captive bred." Animal parts that are commonly trafficked and used in luxury goods, curios, medicines, and other products include tiger skins and bones, rhinoceros horns, and the aforementioned elephant ivory.

Worldwide, illegal trade in wild animals and wildlife products is worth up to \$23 billion per year. It is one of a growing collection of environmental crimes that includes illegal fishing and illegal logging, which all together are worth up to \$258 billion per year, according to a 2016 review by the United Nations Environment Programme and INTERPOL. This is 100 times larger than small arms trafficking, ranking alongside drug trafficking, counterfeiting, and human trafficking in profitability. In fact, many of the same large crime syndicates are involved in all of these.¹⁸

Illegal wildlife trade brings the violence and corruption that aids or accompanies it into communities. It also poses the risk of spreading pathogens from wildlife to humans, farm animals, and local fauna. For example, in 2003, monkey pox came to the United States in a shipment of African rodents. This happened to be legal trade. But illegally traded wildlife have no health screens. Seized shipments of illegally traded birds have found avian flu, psittacosis (a respiratory virus potentially fatal to humans), salmonella, and chlamydia.¹⁹

Can something so lucrative be saved?



Source: pangolin.org

Can pangolins be saved? The jury is out.

With some animals, captive breeding programs can help rebuild wild stocks. But pangolins are difficult to maintain in captivity. The animals often refuse to eat, and die quickly. Growing their populations will require habitat protection and dramatic cuts in consumption.

The group Save Pangolins notes that “the major obstacles to combating the underground wildlife trade of Asian pangolins include a lack of awareness of the problem, lack of resources and capacity to implement conservation programs, and low prioritization by governments and local communities to take action. Communities and local officials need to be fully aware of the benefits of pangolin conservation so that they can become involved in conservation action.”²⁰

To learn more about pangolins’ biology, population sizes, and how to meet conservation needs, researchers formed an IUCN Species Survival Commission Specialist Group in 2012. After two years of study, they launched a global action plan called “Scaling Up Pangolin Conservation.”²¹ Recommendations include “scaling up” monitoring and scientific research of pangolins’ life history and their trade, identifying “pangolin strongholds” to help create national-level conservation priorities, and creating regular monitoring patrols of areas with large populations.

Combating illegal international trade requires the close cooperation of involved countries and additional on-the-ground resources to enforce existing regulations. With the new bans on the pangolin trade, enforcements are expected to become a priority and penalties will increase.

Promotion of *medicinal* alternatives to pangolin scales can be an effective part of education campaign, but ultimately trappers and traffickers need *livelihood* alternatives. Beneficial economic development, governance, and strict crackdowns on corruption in the areas where pangolins live and are consumed are needed to give the shy pangolin a fighting chance.

Author: Janet Larsen (2016); Updated by Peter Bailey (2021)

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¹⁹ Rosen, G. E., Smith, K. F. (2010). Summarizing the Evidence on the International Trade in Illegal Wildlife. *Ecohealth*, 7(1), pp. 24-32.

²¹ Challender, D.W., Waterman, C., Baillie, J. (2014). Scaling up Pangolin Conservation. *IUCN SSC Pangolin Specialist Group Conservation Action Plan*.