



## Chinese Pangolin: struggle for existence in Assam, India

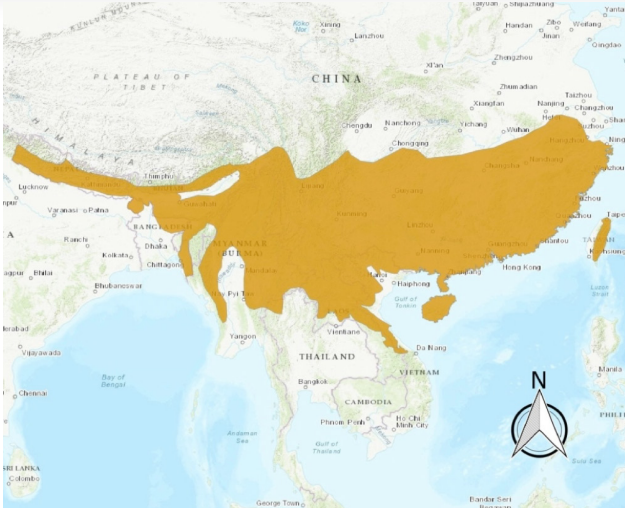


Chinese Pangolin (© Koushik Rajbongshi).

Pangolin is one of the unique and evolutionary distinct creatures belongs to the genus *Manis* Linnaeus, (1758) and is derived from Malayan phrase “Pen Gulling” meaning “rolling ball” (Thapa et al. 2014). There are two species of pangolins found in India, namely, Chinese Pangolin *Manis pentadactyla* and Indian Pangolin *Manis crassicaudata*. Although the two species are similar morphologically, the Indian Pangolin is relatively larger than the Chinese Pangolin and has 11–13 rows of scales across the back compared with 15–18 rows in the Chinese Pangolin (Mohapatra et al. 2015). The presence of protective ear-flaps in Chinese Pangolin is one of the major anatomical differences between the two

pangolin species (Wu et al. 2020). The Chinese Pangolin is distributed throughout the northeastern states of India and in Bangladesh, Bhutan, Nepal, Myanmar, China, Lao PDR, Taiwan, Thailand, and Vietnam (Challender et al. 2014). It occupies a wide range of habitats, including primary and secondary forest, tropical forests, limestone forests, mixed coniferous, broadleaf forests, low mountain or hill forest, bamboo forest, grassland, and agriculture field (Wu et al. 2020).

Chinese Pangolin is a solitary night feeding mammal that predominantly depends on 23 species of ant and 12 species of termite (Wu et al. 2020). It is estimated that an adult



**Distribution of Chinese Pangolin. Source: The IUCN Red List of Threatened Species (Challender et al. 2019).**

pangolin consumes more than 70 million insects annually (IUCN Pangolin Specialist Group) and maintaining ant and termite levels in forest and agricultural field.

However, in recent decades, there has been a notable rapid decline in the global population of Chinese Pangolin due to hunting, poaching, and habitat destruction. Scales of Chinese Pangolin are used as an ingredient in traditional medicine and their meat is considered a delicacy (as a protein source) in southeastern and eastern Asian countries and it has become the most trafficked wild mammal in the world (Thapa et al. 2014; D’Cruze et al. 2018). The true extent of extraction of Chinese Pangolin throughout their range is unknown, but it has been estimated that over 50,000 individuals were taken from the wild between 2000 and 2013 (Challender et al. 2015). Due to rampant population decline, it has been driven to the edge of extinction and IUCN (International Union for Conservation of Nature, 2014) listed it as a Critically Endangered species

on The IUCN Red List of Threatened Species (Challender et al. 2019). Simultaneously, it was categorized in CITES Appendix I (Convention on International Trade in Endangered Species of Wild Fauna and Flora 2016).

In the context of Assam, northeastern India, Chinese Pangolin is known as Bonrui. Information on population status in the wild is largely unknown, however, it has been reported from Manas National Park (Sarma et al. 2015; Lahkar et al. 2018), Patharkandi Reserve Forest (Talukdar & Choudhury 2017), Assam University campus (Mazumdar et al. 2011), Baksha (Pathak 2019), Digboi (Sarma et al. 2015), Dima-Hasao (D’Cruze et al. 2018).

In the state, Chinese Pangolin is believed to be good luck charms, on the other hand, some considered as superstitiously a bad omen if sighted. This species is in the high threats by anthropogenic activities such as hunting, poaching, deforestation, rampant economic development, agricultural practices and transportation development activities significantly affect their survival and reproductive success.

The international trade figure suggested that the entire north-east is under severe hunting pressure (Heinrich et al. 2016). Local communities are involved in the hunting of Chinese Pangolin for personal and commercial gain. In Barak Valley, Assam, Chinese Pangolin is hunted as bushmeat and scales are used in traditional primary health care practices (Dattagupta et al. 2014). Rural



hunters, belonging to the Biata, Dimasa, and Karbi tribes in Dima-Hasao District, largely kill pangolins for their scales and each hunter captured one pangolin per year with the potential to earn 9,000 INR for a single animal (D’Cruze et al. 2018). Also, they are considering pangolin meat as medicine for piles, malaria, and disease related to the nervous and digestive system (D’Cruze et al. 2018). Increasing demand is driven by wet markets (where live animals and freshly slaughtered meat are sold, and so named because of the large quantities of water used to slosh the floors) of southeastern Asian countries; international trade, and to a lesser extent, the domestic trade of pangolins has rapidly risen in Assam. The WIRE news Dated 07.ix.2019, [Wildlife Crime Control Bureau \(WCCB\)](#) in Assam has seized 10 live pangolins in the last three years from northeastern Indian states. It was pointed out that the smuggling of Rhino horns and Tiger parts from India to China has led to a drop in smuggling by enhanced security and international spotlight on the trafficking, but that has been replaced by a surge in the trafficking of smaller species like Chinese Pangolins and geckos (Sharma 2019).

The emergence of new zoonotic diseases in the last century reflected the encroachment of human activities into forests and of the consequent disruption of local ecologies, including dramatic changes in the ecology of viruses and their hosts (Volpato et al. 2020). The world today is dealing with the outbreak of COVID-19 originating from Wuhan Province of China in December 2019, and spreading over 210 countries

worldwide (Sarkar et al. 2020). A group of scientists from China explored potential intermediate hosts of SARS-CoV-2, the virus that causes Covid-19; they found genomic and evolutionary evidence of the occurrence of a SARS-CoV-2 in dead Malayan pangolins where the result is 91.02% identical to SARS-CoV-2 (Zhang et al. 2020). It is assumed that the wet markets of China can be the possible origin of the COVID-19 that largely increased contact between different species of wild animals, and between them and humans. In the wake of the COVID-19 pandemic, the Chinese government has shut down wet markets all over the country with enhancing the protection for pangolins and illicit wildlife trade. The banning of wet markets without driving down the demand for wild meat, may felicitate the trade to move underground, with a potentially even worse impact on commercialized species like the Chinese Pangolin. However, whether pangolin species are the good intermediate host for SARS-CoV-2 is still under debate.

This ecologically important species has received less scientific attention and their ecology, behaviour, status, and distribution are relatively not known. There is an urgent need to evaluate the distribution and habitat status of Chinese Pangolin in Assam because a clear distribution is a prerequisite for initiating conservation of any species. Also, there is necessary to assess the socio-perspective of local communities and hunters on conservation of Chinese Pangolin to introduce community-based conservation action plans which include grass-root activities that bring local community,



governmental departments, and other organizations to work together in a common platform towards achieving conservation of Chinese Pangolins in Assam.

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