

## D.E.T.E.R.-ring Wildlife Crime

From a conservation problem to a criminal one, illegal wildlife crime and trade has increased both in severity and frequency since 2010, with values rising from < USD 1 billion to c. USD 20 billion per year (*World Wildlife Crime Report 2020: Trafficking in Protected Species*. United Nations Office on Drugs and Crime). Smaller animals such as pangolins, turtles and geckos now comprise significant value in illegal trade along with high-value wildlife species. In India, 2.4% of the land cover is home to the largest wild populations of the one-horned rhinoceros *Rhinoceros unicornis*, Asian elephant *Elephas maximus* and Bengal tiger *Panthera tigris*, and India is one of the main sources of illegal wildlife products in Asia. North-east India, a part of the Indo-Burma Biodiversity Hotspot, is susceptible to illegal wildlife trafficking as it is often used as a transit hub from elsewhere in India, Nepal and Bhutan to Myanmar, Thailand, Viet Nam and China.

This region has also witnessed periodical armed rebellions. Arms and ammunition are smuggled through the international borders in exchange for wildlife products. Rhino horns, elephant ivory, pangolin scales, snake venom and tiger parts are exchanged for arms and drugs. A multi-dimensional stakeholder approach is needed to deter wildlife crime in this region: officials from the forest, police and law-enforcement agencies such as the Wildlife Crime Control Bureau and border police, and transportation, security and judiciary agencies need to work together. To focus on deterring illegal wildlife crime and trade, the conservation NGO Aaranyak launched an initiative in 2021 called D.E.T.E.R.S. (Disrupt and End Trade of Endangered and Rare Species). Among the various target audiences for D.E.T.E.R.S., we focused on holding awareness, sensitization and training workshops for the border police forces; i.e. the Assam Rifles, Sashashtra Seema Bal, Border Security Force and others. Their role in checking the influx and outflow of illegal arms, drugs and wildlife items across north-east India's international borders has proven crucial for the deterrence of wildlife crime and illegal wildlife smuggling.

During October 2021–September 2022 we provided wildlife crime awareness workshops and training for wildlife product identification for > 760 border police staff, 40 police officials and 100 officials working in airport and railway security. We were operational in 10 districts of the states of Assam and Arunachal Pradesh. As a result of this training, seizures and detention of offenders followed within 3 months of sensitization. Eight people were apprehended in ivory trade and elephant electrocution cases, and six were detained in cases of pangolin and tokay gecko *Gekko gecko* trade. Four vials of Agar oil were seized at an airport, along with wild boar teeth ornaments and camel bone artifacts. Two people were apprehended in cases of hunting the great hornbill *Buceros bicornis* and four in wildmeat

smuggling. Seven suspected armed poachers were detained for questioning.

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## The Endangered long-tailed macaque is considered a pest in North Sumatra, Indonesia

In 2013, the long-tailed macaque *Macaca fascicularis* was categorized as one of the 100 worst invasive alien species (Luque et al., 2013, *Nature*, 498, 37). However, its population has declined as a result of conflicts with people, trade for pets and for the medical industry (Hansen et al., 2019, *Conservation Science and Practice*, 1, e88). In addition, the Covid-19 pandemic increased the demand for this species because of its use in vaccine development (Hansen et al., 2021, *Primate Conservation*, 35, 1–11).

In March 2022, *M. fascicularis* was recategorized from Vulnerable to Endangered on the IUCN Red List (Hansen et al., 2022). However, the fact that *M. fascicularis* is recognized as a pest in some regions of Indonesia has raised concerns regarding the conservation of this species, especially in North Sumatra Province.

The subspecies in North Sumatra Province is *M. fascicularis fascicularis* (Liedigk et al., 2015, *BMC Genomics*, 16, 1–11); it is considered a destructive feeder on crops in this area (Marchal & Hill, 2009, *Primate Conservation*, 24, 107–116). One of the areas where *M. f. fascicularis* is considered a pest is Parapat, Lake Toba, Simalungun Regency. On the journey from Medan (the capital city of North Sumatra Province) to Parapat one can observe large numbers of *M. f. fascicularis* gathering along the road, waiting for travellers to hand them food. From a conservation point of view this is inappropriate because of potential negative effects on the species. Foraging along the road also increases the likelihood of individuals colliding with vehicles.

In early 2022, we received reports of *M. f. fascicularis* feeding on crops in villages near Parapat, and the local communities consider the species a pest. Although there are as yet no records of the hunting or killing of *M. f. fascicularis* in this area, any increase in conflict with the species could potentially encourage local communities to persecute it.

Studies are required to assess the population of the long-tailed macaque in several regions of Indonesia, notably on Sumatra. In particular, given the species' Endangered status, studies are required to determine the causes of the species' exploration for food near roads and crop use in community gardens.