

Javan Slow Loris

Nycticebus javanicus É. Geoffroy, 1812
Indonesia
(2008)

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All Asian lorises are imperiled by the devastating loss of their habitat; indeed, this major threat resulted in Sri Lanka's Critically Endangered Horton Plains slender loris appearing rightfully in the last two incarnations of this list (Nekaris 2006; Nekaris and Perera 2007). An even greater immediate threat to Asian lorises, however, is their high demand in the rampant Asian pet and traditional medicine trades (Schulze and Groves 2004; Streicher 2004). Easy to catch due to their slow locomotion, numbers of lorises in animal markets far outstretch the ability of these slow-reproducing primates to recover their population numbers in the wild (Shepherd *et al.* 2004). Indeed, this threat raised international concern, resulting in the transfer of all members of the genus *Nycticebus* to CITES Appendix I in 2007 (Nekaris and Nijman 2007). Five species of slow loris are now recognized: *N. coucang* (greater), *N. pygmaeus* (pygmy), *N. bengalensis* (Bengal), *N. menagensis* (Bornean), and *N. javanicus* (Javan) (Roos 2003; Chen *et al.* 2007). All slow lorises suffer from trade throughout their range, but when combined with tremendous habitat loss, no other species has been harder hit than the Javan slow loris. Finally recognized by the IUCN as a species in 2006, and currently listed as Endangered, the Javan slow loris is distinguished easily from its congeners in several respects. Both morphologically and genetically, it is most similar to, yet still distinct from, the largest slow loris, *N. bengalensis* of mainland Asia (Roos 2003; Groves and Maryanto 2008). Weighing about 1 kg, the most distinctive feature of the Javan slow loris is its facial mask, comprised of bold fork marks leading from the eyes and ears to the crown of the head, revealing a white diamond pattern on the forehead (Nekaris and Jaffe 2007). Despite being legally protected since 1973, with its creamy neck, bold dorsal stripe, and panda-like face, it is no wonder that Indonesian pet traders in the 1990s targeted Javan slow lorises above other endemic loris species. Since 2002, however, the numbers of Javan lorises in trade have decreased, with a stark rise in numbers of Sumatran greater slow lorises, a species whose threat status must also be carefully monitored.

Nycticebus javanicus is found only on the Indonesian island of Java. Java has a long history of cultivation and



deforestation that already started c.1000 AD, but really took off in 1830 when the Dutch colonial government imposed the so-called 'cultuurstelsel'. To support this agro-economic system, farmers were forced to grow export crops on communal grounds, which were often forest (Whitten *et al.* 1996). By the end of the 19th century the natural forest was severely fragmented, and at the beginning of the last century the remaining forest, especially in West and Central Java, showed a fragmentation pattern very similar to that seen today. Over the last few decades, the decrease in forest area has been slow. At present, less than 10% of the original forest remains, most of it covering the higher slopes of the central mountains.

GIS models have shown that historic forest loss and continued degradation mean that less than 20% of habitat suitable for *N. javanicus* remains. Species distribution modeling and a Gap Analysis have also revealed that only 17% of the potential distribution of *N. javanicus* is currently within the protected area network of Java. Furthermore, Thorn *et al.* (2008) have highlighted conservation priority areas for the increased protection of *N. javanicus*, based on GIS analysis and ecological niche modeling. These include recommendations for the extension of seven important protected areas across the island, as well as 11 priority survey sites where the current distribution and abundance of this enigmatic primate should be

studied. More surveys are vital since the decreased number of Javan lorises in trade seems to correlate with exceedingly low numbers in the wild (Nekaris *et al.* 2008). Indeed, surveys by three research groups all showed animals to occur at 0.02 to 0.20 animals per km, when they could be found at all, meaning 5–10 km must be walked to see a single loris (Nekaris and Nijman 2008; Winarti 2008). Roads and human disturbance have been shown to correlate negatively with Javan slow loris abundance (Collins 2007; Winarti 2008).

Also urgently required are programs to mitigate trade in all species of slow loris. A number of studies have found that slow lorises are not always a targeted group, but that they do have economic value throughout their range. Rather than seeking a loris, villagers moving through the forest simply pick up a loris when they happen to see it (Starr *et al.* 2008). Similarly, when forests are clear cut (for agriculture or cash crops), villagers pick through the felled trees and collect the lorises; with a defense mechanism to cling to branches rather than to flee, and with their nocturnal senses stunned by bright daylight, lorises are an easy target (Ratjacsek 1998).

In Java itself, lorises are often specifically targeted for the trade (Sanchez pers. obs.). Local villagers who find a loris take it to a distributor dealer who compiles a stock of lorises. These animals go to middlemen who then distribute them throughout the “bird” markets in the main towns in Java. The traders who ultimately sell the animals are aware that trading lorises is profitable, reaching a price in the market up to ten times or more the purchasing price at the stocker’s level.

Once they arrive at a market, lorises face other threats. To avoid being bitten by the purportedly toxic lorises, traders habitually cut or pull out an animal’s front teeth. Most of these lorises die due to dental abscess or pneumonia. Those that do survive are no longer able to eat their preferred food (gum) (Wiens *et al.* 2006), or to engage in the important behavior of social grooming with the toothcomb, meaning that any confiscated animals are unlikely to survive if released to the wild. Reintroduction itself is a threat to the Javan loris; three major trade hubs, markets in Jakarta, Bandar Lampung and Palembang, receive lorises from throughout the region. The similar appearance of lorises to the untrained eye results in release of other loris species into Java, with potential for disastrous effects from hybridization or displacement by invasive species.

To combat the issue of trade, starting in 2002, a handful of foreign-aid assisted rescue centers were built up in Indonesia. These rescue centers became the haven for many different species of illegally traded wildlife confiscated by the Indonesian forest authorities, including

hundreds of slow lorises. Up to 95–100% mortality of slow lorises has been reported by most rescue centers, due to untreated dental infections, improper care and malnutrition, as well as inappropriate releases. This problem is being combated with help from International Animal Rescue Indonesia (IARI), which set up the first facility specialized for the rescue and rehabilitation of lorises in Indonesia in 2006. Working closely with other NGOs, Indonesian Universities, and the Indonesian Ministry of Forestry, a Loris Rescue Unit is being set up to work on market investigations, rescue, rehabilitation and release of lorises, education and awareness, and supporting research work.

For a long time, slow lorises were thought to be common throughout Indonesia, and the presence of animals in trade was believed to be an indicator of their abundance. We are only beginning to unravel the complexity of their taxonomy and distribution, leading to an overall bleak picture. If trade cannot be halted, Critically Endangered will be a more apt listing for these evolutionarily distinct and beautiful primates. While Java has an impressive and comprehensive protected area network, encompassing over 120 terrestrial conservation areas covering some 5,000 km², enforcement of environmental laws and active protection of forest is lacking in most of these parks. Besides curbing the illegal trade, it is paramount that these conservation areas, and indeed all other remaining forest areas on the island, be effectively protected.

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