

Scientists Say Elephants, Rhinos Are Irreplacable In Tropical Forests



By [Marla Lise](#) | [Featured Research](#)

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AsianScientist (May 14, 2012) – A study published in the *Biotropica* journal has shown that although herbivores such as the Asian Tapir might share the same digestive system as elephants and rhinoceroses, they cannot perform similar functions in tropical forests.

In the tropical forest ecosystems of Southeast Asia, megaherbivores such as elephants and rhinoceroses play a very important role as seed dispersers: they disperse large seeds of plants by transporting and defecating them in good conditions. Without them, plants are not able to colonize other areas and end up growing right next to the parent plant, due to the lack of wind,

scarce light, and lack of space in the forest.

However, habitat loss, poaching, and the conflict between elephant and man has caused a 95 percent loss in the Asian elephant (*Elephas maximus*) historical distribution range and has left the rhinoceros just a step away from extinction: there are less than 50 Java rhinoceroses (*Rhinoceros sondaicus*) and 200 Sumatra rhinoceroses (*Dicerorhinus sumatrensis*) left today.

According to the red list of the International Union for Conservation of Nature (IUCN), elephants are in 'danger of extinction' and the two rhinoceros species are 'critically endangered'.

In light of the situation, the research team evaluated the seed-dispersing capacity of another large herbivore. For cultural reasons, the 300 kg Asian tapir (*Tapirus indicus*) is not hunted and has a similar digestive system to that of elephants and rhinoceroses.

The study compared nine different large plant species and showed that tapirs defecated 8 percent of the tamarind seeds ingested (none of which germinated) compared to elephants, which defecated 75 percent of the 2,390 ingested seeds (65 percent of which germinated).

"The Asian tapirs spit, chew, or digest the majority of large seeds. This either destroys them or leaves them in the same place. As a result, they are not good dispersers for plants with large fruits and seeds," said lead author Ahimsa Campos-Arceiz, researcher at the School of Geography of the University of Nottingham in Malaysia.

The researchers suggest that megafauna should be protected in a more determined way, through a crackdown on illegal wildlife trade and the reintroduction of species into areas from where they had previously disappeared.

"If these megaherbivores disappear from the ecosystem, their contribution to ecological processes will too be lost and the path of the ecosystem will change irreversibly. The most probable consequences are the change in the structure of the undergrowth and the forest and the loss of certain species," said Campos-Arceiz.

The article can be found at: [Campos-Arceiz A et al. \(2012\) Asian Tapirs Are No Elephants When It Comes To Seed Dispersal.](#)

Source: [FECYT](#); Photo: Ahimsa Campos-Arceiz.

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