

# A big difference between Asian and African elephants is diet

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Asian elephant. Credit: MEME

New research has shown that there are significant differences between the Asian and the African forest elephant - and it isn't just about size and the shape of their ears. It is about what they eat and how they affect

forest ecosystems. See video [here](#).

As megaherbivores and the largest of our land animals, elephants have a significant impact on their habitat. In Central Africa, forest elephants act as ecological filters by breaking tree saplings and stripping them of foliage. But we have much more to learn about the impact of elephants on Southeast Asian rainforests. And new research suggests that the Asian elephant is a daintier eater - preferring palms, grasses and bamboo to tree saplings.

Experts from the University of Nottingham Malaysia Campus and a team from the University of Florida have been taking a closer look at the foraging impacts of the Asian elephant, and they've been puzzled by some of the results. Their research, 'Foraging Impacts of Asian Megafauna on Tropical Rainforest Structure and Biodiversity' is published Wednesday 30 August 2017, in the scientific journal *Biotropica*.

The study was led by Professor John Terborgh, of the University of Florida, Gainesville, a pioneer and leading expert in tropical biology and conservation. The research took the team deep into Malaysia's dense closed-canopy forests where thick vegetation normally precludes direct observation of elephants.

Using traditional forest sampling techniques the team looked at forest structure, composition, and diversity in two Malaysian forests - the Royal Belum State Park which is home to 14 of the world's most threatened species including the Asian elephant; and Krau Wildlife Reserve, where elephants have not roamed since 1993. The results were compared with results from African forests.

In the two Malaysian rainforests, the team found clear differences in tree density, composition, and diversity. The density and diversity of tree

saplings were higher in Krau where elephants are now absent. Palms, gingers, pandans and bamboos (monocots) were also more abundant. In Belum, however, monocots over a metre tall were virtually absent.

Dr Ahimsa Campos-Arceiz, from the School of Environment and Geographical Sciences, and Principal Investigator of the Management & Ecology of Malaysian Elephants (MEME), said: "Our initial expectations were that Asian elephants would have similar impacts to those described for African forest elephants in Gabon where John Terborgh and Lisa Davenport have conducted previous work. However, our results show that Asian elephants have an important impact on forest dynamics but these impacts seem to be very different from the ones produced by African forest elephants."

The clearest difference was in monocot plants - palms, grasses, bamboo. These were found to be abundant where Asian elephants are scarce but rare where elephants are present. We also found some puzzling results in terms of tree scars - signs of elephant feeding - that suggest that elephants might not be eating tree saplings (small [trees](#)) as much as we assumed.

Dr Campos-Arceiz said: "Asian elephants seem to be more interested in monocot plants, especially palms. These results have very interesting and important implications in terms of elephant ecological impact. Maybe this is the reason why Asian elephants do not seem to modify forest the way African elephants do. And human-elephant conflict is greater in Malaysia because we are planting palms which are the very food [elephants](#) love to eat. We are currently continuing this work through direct observations of elephant feeding in Malaysian rainforests."

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