

# In the Amazon, it takes a village: Community structure in rainforests revealed to be highly coordinated

August 19 2019, by Joann Adkins

---



Christopher Baraloto. Credit: FIU

Relationships are complex, and species living in Amazonian rainforests are no exception.

While local environmental factors, including soil, shape where we find certain species, there is much more to the story. An international team of scientists led by Florida International University (FIU) ecologist Jason Vleminckx examined five highly diverse groups in French Guiana—trees, fungi, earthworms, [ants](#) and spiders. They found species turnover is highly coordinated among the groups, shedding new light on how trophic interactions shape community assembly in [tropical forests](#).

"Biodiversity is more than just species counts—it also comprises the identity of species," said Chris Baraloto, director of the FIU International Center for Tropical Botany at the Kampong. "In our study, we show clearly that the composition of species in different taxonomic groups are tightly linked, underlying the importance of the myriad of species interactions in hyperdiverse systems such as [tropical rainforests](#)."

The research suggests the presence of fungi, earthworms, ants and spiders were all closely associated with trees and, in some cases, each other. Ants and trees are strongly coordinated in their species composition. The strong association between the Amazon's mighty [trees](#) and some of its tiniest residents likely results from the quality of tree leaf litter that structures the ants' habitats as well as the communities on which the ants prey.

Examining coordinated turnover among different groups requires a wealth of hard-earned data, but Baraloto underlines it is worthwhile to find eventual proxies for monitoring elusive groups such as earthworms or fungi. Showing that a forest rich with one [species](#) group is also rich with another, and further that the identity of these groups is tightly linked, offers scientists critical new tools to improve conservation and management priorities.

The findings were published in *Scientific Reports*.

The International Center for Tropical Botany at the Kampong is a collaboration between FIU and the National Tropical Botanical Garden, providing research-based knowledge and tools to discover, preserve and sustainably use tropical plants while fostering programs to educate future generations.

**More information:** Jason Vleminckx et al. Coordinated community structure among trees, fungi and invertebrate groups in Amazonian rainforests, *Scientific Reports* (2019). [DOI: 10.1038/s41598-019-47595-6](https://doi.org/10.1038/s41598-019-47595-6)

Provided by Florida International University

Citation: In the Amazon, it takes a village: Community structure in rainforests revealed to be highly coordinated (2019, August 19) retrieved 24 April 2024 from <https://phys.org/news/2019-08-amazon-village-rainforests-revealed-highly.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.