

Functional diversity of bat assemblages between four Amazonian habitats

William Douglas de Carvalho¹, Fábio Z. Farneda², Isaí Jorge de Castro³, Ana Carolina Martins⁴, Bruna da Silva Xavier¹, João David Miguel⁵, Karen Mustin⁶, Renato R. Hilário¹ and José Júlio de Toledo¹

1 – Laboratório de Ecologia, Departamento de Meio Ambiente e Desenvolvimento, Universidade Federal do Amapá (UNIFAP), Rod. Juscelino Kubitschek, s/n, Macapá, AP, 68903-419, Brazil
 2 – Departamento de Ecologia, Universidade Federal do Rio de Janeiro, PO Box 68020, 21941-902 Rio de Janeiro, Brazil
 3 – Laboratório de Mamíferos, Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá (IEPA), Rodovia JK, Km 10, CEP 68912-250, Macapá, Amapá, Brazil.
 4 – Departamento de Zoologia, Instituto de Ciências Biológicas, Universidade de Brasília, Campus Universitário Darcy Ribeiro, 70910-900, Brasília, Distrito Federal, Brasil
 5 – Centre for Ecology, Evolution and Environmental Changes and Departamento de Biologia Animal, Faculdade de Ciências, Universidade de Lisboa, 1749-016, Lisboa, Portugal
 6 – Institute of Biological and Environmental Sciences, University of Aberdeen, Zoology Building, Tillydrone Avenue, Aberdeen, AB24 2TE, UK

Background

The Amazon biome is not a forest continuum, but rather is made up of different habitats, and this diversity of habitats is responsible for the high biodiversity that occurs in this biome.

Objectives

- Compare the functional, α and β diversity of bats between four Amazonian habitats.
- Verify the composition of species' functional traits in the four habitats.

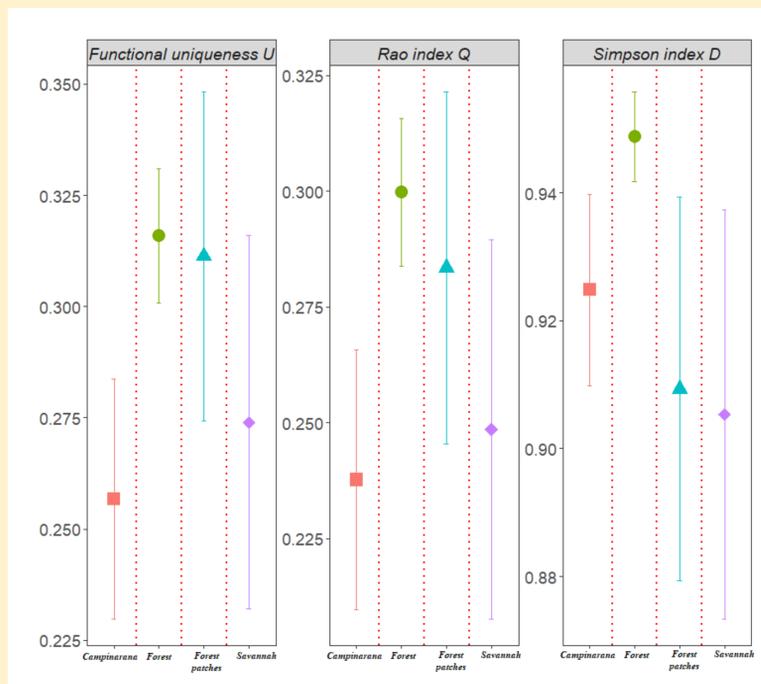
Methods

We used mist net in sites located in four Amazonian habitats in the north of Brazil: campinarana, continuous *terra firme* forest (later referred to as forest), savannah and natural forest patches.

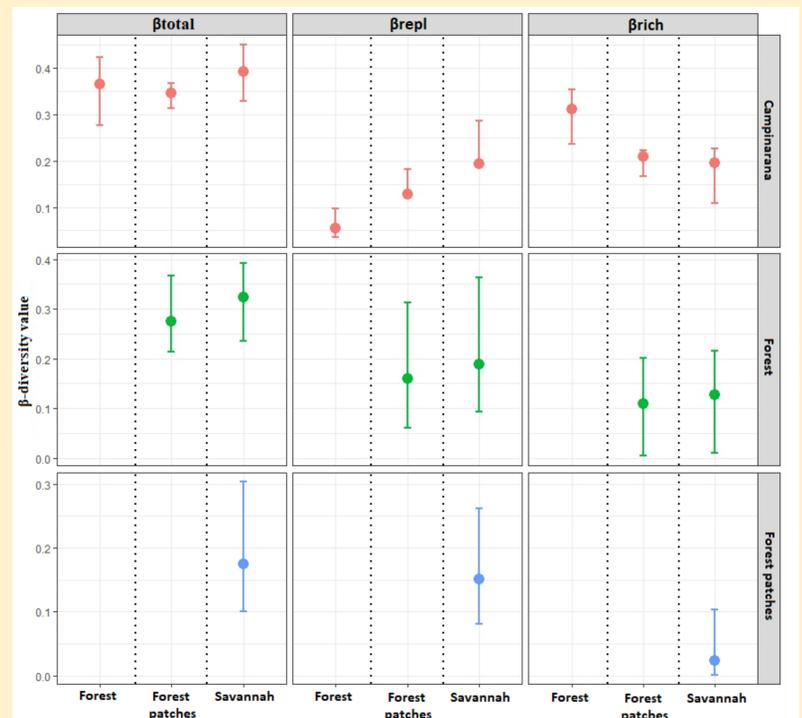


Results and Discussion

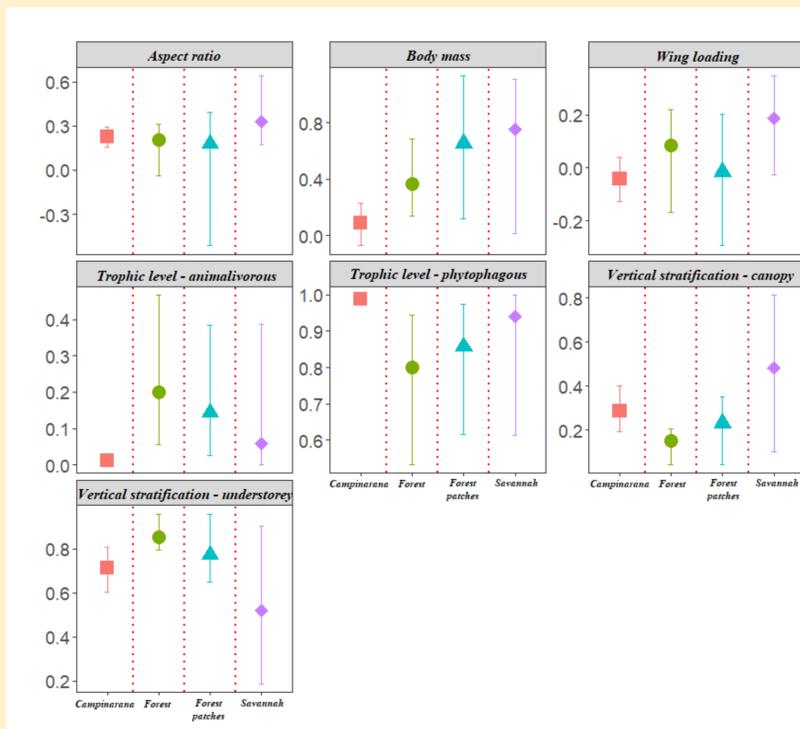
- 3,686 captures.
- Forest and forest patches showed higher α -diversity than savannah and campinarana, respectively.



- The functional β -diversity was low between forest and forest patches, intermediate between forest and campinarana and higher between forest and savannah.



- Animalivorous bats were more associated with forest and forest patches, while phytophagous bats were more associated with savannahs and campinaranas. These results are in line with studies conducted in human-modified fragmented landscapes in the Amazon.
- Differences were also found in relation to vertical stratification, where bats that use the canopy in forest were more captured at ground level in savannahs, forest patches and campinarana than those species which use the understorey of the forest.



Conclusion

Our results bring new understanding to the distribution and composition of bat assemblages along natural habitat gradients in the Amazon, with important implications for both ecology and conservation of these species and habitats.



Instituto de Pesquisas Científicas e Tecnológicas do Estado do Amapá