award 2

1st Meeting of the Iberian Ecological Society & XIV AEET Meeting

"Ecology: an integrative science in the Anthropocene"

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"Ecology: an integrative science in the Anthropocene"

RAMON MARGALEF ANY 1919 2019

EEF Ramon Margalef award

oral presentation - category: "theoretical ecology"

WINNER

Guillermo Bañares-de Dios

Elisabeth M.R. Robert
(coordinator)

Andreia Gonçalves Sousa
(coordinator assistant)

eef European Ecological Federation

Eugènia Martí

Laura Prieto

Miguel Verdú

European Ecological Federation

The award committee members

TS.04-03

“Ecological mechanisms shaping woody plant community structure in tropical montane forests: a multi-spatial functional approach”

First author (winner): Guillermo Bañares-de Dios

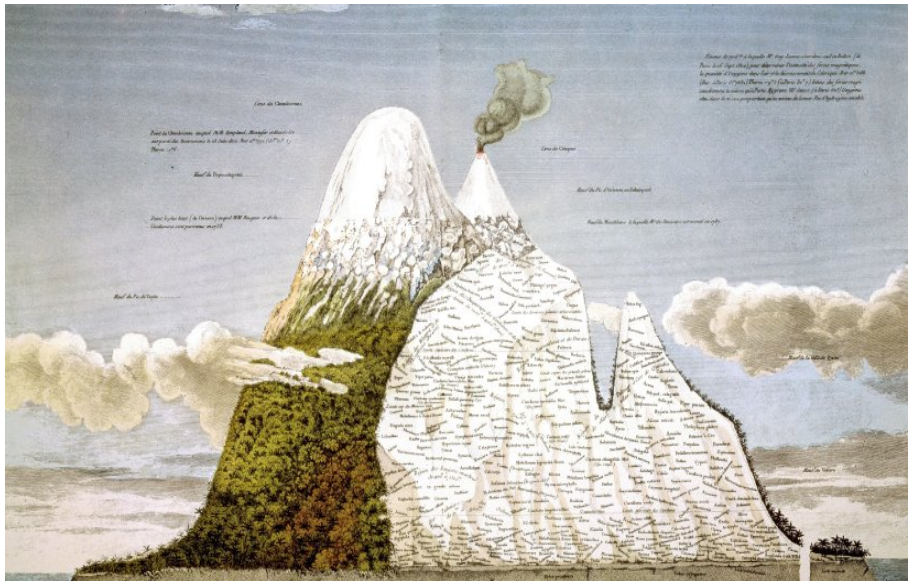
Universidad Rey Juan Carlos, Madrid, ES

Award: 2000 EUR credit for scientific travels

Co-authors: Manuel Juan Macía, Itziar Arnelas, Gabriel Martins Carvalho, Carlos Iván Espinosa, Iñigo Granzow-de la Cerda, Norma Salinas and Luis Cayuela

“A nicely designed presentation accompanied the speaker through a sound study in which clear explanations on theoretical ecology aspects are combined with data proof. The throughout knowledge of the presenter regarding his topic generated interesting scientific discussion.”

Ecological mechanisms shaping woody plant community structure in tropical montane forests: a multi spatial scale functional approach



Von Humboldt, 1807

G. Bañares

Guillermo Bañares de Dios

Macía MJ, Carvalho GM, Arnelas I,
Espinosa CI, Granzow I, Salinas N & Cayuela L

“Ecological mechanisms shaping woody plant community structure in tropical montane forests: a multi-spatial functional approach”

Guillermo Bañares-de Dios et al.

Abstract: Understanding the processes and factors shaping natural communities structure is fundamental for community ecology. Traditionally has been proposed that ecological mechanisms such as environmental filtering, biotic interactions or stochastic processes play a key role in community assembly, but important contradictions still exist regarding which ones are more relevant. In this sense, a hierarchical assembly model has been proposed, to analyse how these mechanisms and their relative importance vary at different spatial scales. Null models have become broadly used to detect if any of those mechanisms are operating. However, it is crucial that models incorporate certain restrictions related to spatial scale assumptions that guarantee its full ecological sense, although unfortunately this has been more often the exception rather than the norm. In this study we apply a multi- scale approach to investigate the effects of environmental filtering, biotic interactions or stochastic processes on community assembly in a very complex and highly diverse tropical montane forest. We measured woody plant functional diversity on different traits (leaf thickness, specific leaf area, wood density), which has probed to convey better ecological information than the classical indexes based on species composition and abundances, in 60 0.1 ha. plots and subdivided in 0.01 ha subplots, scattered along elevational gradients in two protected areas in Peru and Ecuador. Then, we compared functional diversity distribution and changes at different spatial scales: among subplots and among plots. Our preliminary results suggest that even at the smallest spatial scale, environmental filtering is the overruling mechanism for woody plant community assembly.