



Rafael is an ecologist interested in understanding the functioning of tropical ecosystems, particularly (i) the ecology and evolution of the insects-plants interactions and its role on the survivorship and coexistence of common species in Yasuní Amazonian tropical rainforest (Ecuador). (ii) Plant defences as a template for unravelling Yasuní hidden plant diversity and (iii) the role of soil biodiversity in ensuring organic matter decomposition and nutrient cycle.

Email: recardenas@puce.edu.ec

Personal website (facultative):

http://bioweb.puce.edu.ec/QCAZ_EN/content/RafaelCardenas

29 MAY 2019
11h00 – 12h00

Salle 201, Bâtiment PS2, CIRAD-UMR AMAP, Boulevard de la Lironde

Searching for the ecological processes determining the distribution and coexistence of north-western Amazonian tree communities

presented by

Dr. Rafael E. Cárdenas

Pontifical Catholic University, Ecuador

ABSTRACT

Local spatial distribution of plants and the factors driving it is a matter of study in Ecology. Some plants for example live in aggregation (or even monodominance) defying the Negative Density Dependence hypothesis within natural ecosystems. Recent research has found no effect of the size of species geographic ranges, the diversity of climate or the intraspecific variability of leaf traits in predicting topographic habitat association of the most common tropical tree species in a 50Ha Yasuní Amazonian forest plot (Ecuador).

How plant species are distributed as they are? One potential mechanism could be an efficient use of soil nutrients via an accelerated rate of decomposition process of their own leaf litter driven by specialized soil organisms (e.g. detritivores, microflora and microfauna), via ultra-efficient mycorrhizae, and/or following soil nutrients distribution. Such an efficient nutrient uptake could probably allow plants to invest more in defenses against pathogens and avoid inter- and intraspecific competition for resources. This is a field of constant debate, where much remains to be done.

KEY WORDS: community ecology; functional ecology; above- belowground interactions; plant-herbivore interactions; tropical biodiversity

Invited and animated by:

Dr. Claire Fortunel (UMR AMAP)

Type:

Research results

Oral language:

english

Language of PPT:

english

UMR « botAnique et bioinforMatique de l'Architecture des Plantes » (AMAP)
UMR 51 (CIRAD), UMR 5120 (CNRS), UMR 931 (INRA), UR 2M123 (IRD), UM27 (UMII)
c/o CIRAD – TA A-51/PS2 – Boulevard de la Lironde – 34398 Montpellier Cedex 5

