

Wintersemester 2011/12

Gebäude NW I
Hörsaal H12

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung

Donnerstag 02.02.2012, 17:00 Uhr, H12

Anschließend Postkolloquium mit Bier und Brezeln im H12

Dr. Rainer Wirth

Department of Plant Ecology and Systematics, Universität
Kaiserslautern

Trophic disruptions and biotic homogenization in fragmented forests: Unveiling success and impact of a neotropical key herbivore (leaf-cutting ants)

An ever-increasing proportion of the forested landscape is converted to forest edges and fragments, yet the full extent of cascading effects on ecological processes and biodiversity persistence remains poorly understood. In a Brazilian-German research project, we explored this topic by asking how anthropogenic landscape alterations impact ecosystem engineers and modify their functional significance.

As a model system, we studied leaf-cutting ants (LCA), which turned hyper-abundant due to high levels of forest fragmentation across the Neotropics. I compile quantitative results on (1) the mechanisms driving LCA proliferation and (2) the manifold impacts leaf-cutting ants LCA exert on forest structure, microclimate, edaphic conditions, plant performance, and floristic and functional signature of plant assemblages. In synthesis, we found that ecosystem engineering by LCAs is strongly context-dependent: While in undisturbed forests regional habitat diversity is enhanced through the creation of high-resource patches, anthropogenic forest transformation (i.e. high-light environments with dominance of light-demanding species) causes synergistic feedback mechanisms turning LCAs into a large-scale disturbance that promotes floristic and functional impoverishment of modern forests.

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