

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

Summer 2019



UNIVERSITÄT
BAYREUTH

Thursday

02.05.2019

12:00 in H6, GEO

Dr. Henning Nottebrock

Plant Ecology, UBT

Revealing eco-evolutionary dynamics with trait-based neighborhood models

Incorporating evolutionary aspects with ecosystem functioning is fundamental for a comprehensive understanding of plant community dynamics and coexistence. In particular, there is a need to link evolutionary genetics with community ecology to understand the origins of community features and to forecast the impact of climate change on biological diversity. Intraspecific genetic variation in plants can affect community composition and coexistence when evolutionary mechanisms, such as mutation, changes their competition ability. However, it is poorly known how intraspecific genotypic variation plays a role in coexistence and community dynamics. Using trait-based neighborhood models, we quantify the evolution of plant species interactions by linking spatial interactions with spontaneous mutations as a key evolutionary mechanism. We show that spontaneous mutations provide a mechanism for plants to quickly evolve niches and may drive competition, facilitation and selection with profound consequences for future population and community dynamics. These results may help to improve the predictability of species persistence under climate change.