

Wintersemester / Winter Term 2012-2013

Do. / Thu. 17 st
Gebäude / Building
GEO
Hörsaal / Lect. hall
H8

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung
Lectures in Ecology and Environmental Research

Donnerstag 06.12.2012, 17:00 Uhr, H8

Anschließend Nikolausempfang im Foyer vor dem H8

Antrittsvorlesung

Die Vortragsreihe ist eine interdisziplinäre Plattform zur Information und Diskussion für Studierende, Forschende und Lehrende

Gäste sind herzlich willkommen

The lectures serve as an interdisciplinary platform for students, junior and senior scientists.

Guests are cordially invited!

Prof. Dr. Christiane Werner

Functional / Agroecosystem Ecology, University of Bayreuth

Do invasive plants cheat? Impacts on biogeochemical cycles and ecosystem functioning

Exotic invasive species are considered one of the largest threat to biodiversity worldwide, and the impact is expected to further increase under global climate change. Moreover, ecosystem invasion by exotic plant species may cause marked changes in biogeochemical cycles and ecosystems functioning, thereby accelerating environmental change. However, the processes and characteristics which turn an introduced exotic species into an aggressive invader allowing its dominance in the invaded ecosystems is still an open question. Similarly, little is known on the functional changes that these ecosystem engineers induce in the invaded systems. These questions are explored in a case study of a non-native resource-demanding acacia: *Acacia longifolia*, native to Australia, successfully invades water-limited sand dune systems worldwide with large ecological and economic impact. This drought-susceptible N-fixer follows a water spender strategy and exhibit different functional traits compared to native Mediterranean species. In the invaded systems acacia markedly altered the ecosystem structure, water balance, carbon gain and N-cycle of the native vegetation. Hence, exotic species can have significant impacts on hydrological cycle in resource-limited semi-arid ecosystems through a repartitioning of water resources between the native and invasive species. Moreover, the introduction of novel traits into a community like high resource use (water spender) and N-fixation can promote invasiveness through changes in the water and nutrient cycle of the invaded system, thereby potentially disrupting the co-evolved interactions within the native plant community. This may have broad implications for the sustainability of Mediterranean dune forests in the future, since water is predicted to be an increasingly limited resource under climate change scenarios.