



Functions and Services of Biodiversity

20th - 22th June 2011, University of Göttingen
Aula am Waldweg, Waldweg 26

20th June

11:00 Registration and poster office

12:45 Welcome by Stefan Scheu

Session 1: Biodiversity and trophic interactions

Chair: Teja Tscharncke

13:00 *Keynote:* Owen Lewis (Zoology, University of Oxford, UK)
“Trophic interactions and tropical tree diversity”

13:40 *Keynote:* Christian Mulder (National Institute for Public Health and Environment, The Netherlands)
“Elemental fluxes and productivity”

14:20 Christoph Scherber (Agroecology, University of Göttingen)
“Effects of plant species richness on multitrophic interactions: Results from an eight-year biodiversity experiment”

14:40 Ulrich Brose (Systemic Conservation Biology, University of Göttingen)
“Extinctions in complex ecological networks”

15:00 Coffee break

Chair: Stefan Scheu

15:30 *Keynote:* Peter de Ruiter (Wageningen University and Research Centre, The Netherlands)
“Food web complexity and stability: the role of energetics”

16:10 *Keynote:* Alastair Fitter (Biology, University of York, UK)
“Arbuscular mycorrhizal fungi: key regulators of nutrient cycles”

16:50 Alexandre Jousset (Zoology and Anthropology, University of Göttingen)
“Allelopathy and resource competition link diversity and ecosystem service in microbial communities”

17:10 Maaria Rosenkranz (Environmental Engineering, Helmholtz Zentrum Munich)
“Isoprene and co. - multiple functions in plants”

19:00 **Opening ceremony Centre of Biodiversity and Sustainable Land Use**
(Altes Rathaus Göttingen)

20:15 **Conference Dinner** (Veranstaltungszentrum am Wilhelmsplatz)

21th June

Session 2: Biodiversity, carbon and productivity

Chair: Christian Ammer

08:30 *Keynote:* Richard J. Norby (Oak Ridge National Laboratory, TN, USA)
“Forest responses to elevated CO₂. Lessons from a decades-long research program”

09:10 *Keynote:* Hans Pretzsch (Forest Growth and Yield, TU Munich)
“Productivity of mixed-species versus pure forest stands. From fact finding to understanding”

09:50 Alexander Knohl (Bioclimatology, University of Göttingen)
“Carbon, water and energy fluxes between terrestrial ecosystems and the atmosphere”

10:10 Coffee break

Chair: Johannes Isselstein

10:40 *Keynote:* Andrew Hector (Evolutionary Biology and Environmental Studies, University of Zurich, Switzerland)
"The diversity debate: Evolving paradigms in biodiversity science"

11:20 *Keynote:* Mary Firestone (Environmental Science, Policy and Management, University of California, Berkeley, USA)
“How will expanding molecular characterization of soil microbial communities advance our understanding of terrestrial ecosystem function?”

12:00 Rodica Pena (Forest Botany and Tree Physiology, University of Göttingen)
“Effects of carbon limitation on beech (*Fagus sylvatica*) ectomycorrhizal fungal community structure”

12:20 Jürgen Homeier (Ecology and Ecosystem Research, University of Göttingen)
“Tree species richness, carbon storage and productivity of Ecuadorian tropical forests”

12:40 Lunch break

Session 3: Biodiversity benefits and sustainability

Chair: Martin Potthoff

- 13:40 *Keynote:* Louise Jackson (Land, Air and Water Resources, University of California, USA)
“Agricultural land use, soil biota and ecosystem services”
- 14:20 *Keynote:* Ivette Perfecto (Natural Resources and Environment, University of Michigan, USA)
“Biodiversity and autonomous pest control in the coffee agroecosystem”
- 15:00 Nicole Wrage (Rhine-Waal University of Applied Science, Kleve)
“Phytodiversity, resource use and production in agricultural grasslands”
- 15:20 Kilian Bizer (Economic Policy and SME Research, University of Göttingen)
“Biodiversity loss, land use change and regulatory impact assessments”
- 15:40 Coffee break

Chair: Christoph Leuschner

- 16:10 *Keynote:* Andreas Lüscher (Agroscope, Zurich, Switzerland)
“Benefits and limits of sward diversity for fertile multifunctional grassland”
- 16:50 *Keynote:* David Kleijn (Alterra, Centre for Ecosystem Studies, Wageningen, The Netherlands)
“Selling farmland biodiversity conservation in the face of growing demands for agricultural products - an advertiser’s nightmare?”
- 17:30 Christian Ammer (Silviculture and Forest Ecology, University of Göttingen)
“Tree species diversity – a key issue of forest management in Central Europe”
- 17:50 Yann Clough (Agroecology, University of Göttingen)
“Combining high yields and high biodiversity in productive agricultural landscapes”
- Closing lecture**
- 18:10 John Vandermeer: (Natural Resources and Environment, University of Michigan, USA)
“Land transformations, biodiversity, and social movements”
- 18:40 Break and refreshments

- Public evening lecture** *Introduction: Teja Tscharnke*
- 20:15 - 21.00 Vojtech Novotny (Entomology, University of South Bohemia, Czech Republic)
“Studying and preserving tropical biodiversity in Papua New Guinean rainforests”

22th June

08.30 - 13.00 Workshops

The aim of the workshops is to synthesise and discuss new or controversial areas in biodiversity research. The immediate target is to formulate recommendations for future research and/or implementation in the form of a forum or discussion paper.

The coordinators of the respective symposium workshops (Biodiversity & trophic interactions; Biodiversity, carbon & productivity; Biodiversity benefits and sustainability) will propose a subject, moderate the workshop discussion and coordinate the writing-up.

Workshop 1: Biodiversity and trophic interactions

Coordination and Moderation:

Christoph Scherber (christoph.Scherber@agr.uni-goettingen.de)

Ulrich Brose (ubrose@gwdg.de)

Varying biodiversity at one trophic level can have cascading effects on other trophic levels and may thus also drive ecosystem processes. However, generalisations are hampered by different consequences of manipulations of basal, intermediate or top species diversity. In addition, non-trophic interactions may lead to different outcomes. The aim of this work shop is to discuss how to open the mechanistic black box of multitrophic biodiversity effects on ecosystem functioning. We propose (1) niche differentiation within guilds / trophic levels and (2) multitrophic community structure as potential mechanisms.

Time plan for workshop 1

08:30	Welcome and introduction of topic
09:00	Plenary discussion
09:30	splitting into subgroups
11:30	presentation of subgroup results
12:30	final plenary discussion and summary

Workshop 2: Biodiversity, carbon and productivity

Coordination and Moderation:

Alexander Knohl (aknohl@gwdg.de), Yakov Kuzyakov (kuzyakov@gwdg.de)

Carbon cycle and productivity are processes operating at multiple spatial and temporal scales covering microorganisms in soil, soil – plant interactions, entire ecosystems and the globe and ranging from seconds to millennia. It remains unclear how biodiversity and productivity on one scale is relevant at the next higher scale. In this workshop we are interested to look at the interactions of biodiversity with the carbon cycle and productivity across these spatial and temporal scales.

Workshop 3: Biodiversity benefits and sustainability

Coordination and Moderation:

Yann Clough (yclough@gwdg.de),

Nicole Wrage (nicole.Wrage@hochschule-rhein-waal.de)

In the last 25 years, substantial progress has been made in areas such as landscape ecology and biodiversity and ecosystem functioning research. Using and extending this knowledge base to maintain biodiversity benefits and ensure sustainable land-use systems is a major challenge.

This workshop is an exciting opportunity to generate a synthesis of the current knowledge, highlight significant gaps in knowledge and between knowledge and applicability, and identify needs for more data and for more integration. It will bring together scientists from at least five different countries working in contrasting land use systems (arable and grassland, agroforestry, silviculture) in temperate to tropical regions, and covering both the biological and the human dimensions.

The aim is not to produce a review, but a useful, thought-provoking discussion paper based on experiences with very contrasting cultures and land-use systems.

As guidelines for the discussion, we propose five key themes that reflect the speakers' contributions:

- Conserving rare species vs. conserving biodiversity for benefits and sustainability
- Linking results of biodiversity-ecosystem functioning experiments with real world agricultural and silvicultural activities
- Spatial and temporal scales in biodiversity-ecosystem functioning research and the ecosystem service approach
- Bridging divides between ecology, socio-economics and land-use governance

We would like to ask all workshop participants to prepare a set of statements and examples for each of these themes (if possible) to feed and speed up the discussion. Additional themes may be added at the very beginning of the workshop or sent in advance to the coordinators of the workshop if necessary.

Poster presentation

Voluntary poster contributions will be exposed during the whole conference.