

# Biodiversity, ecosystem functioning and species interaction networks

Prof. Dr. Michael Staab

Animal Ecology and Trophic Interactions

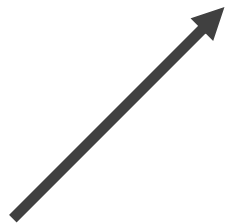
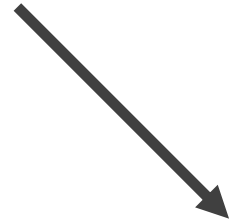
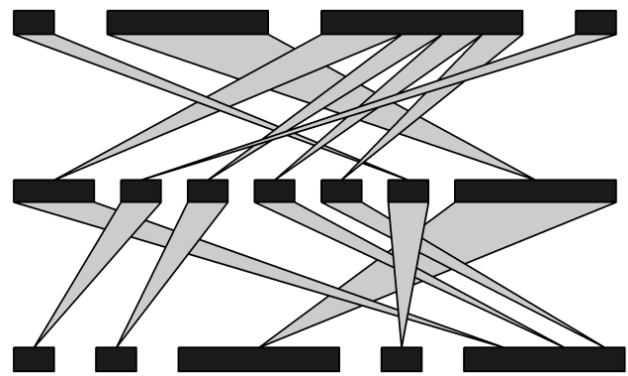
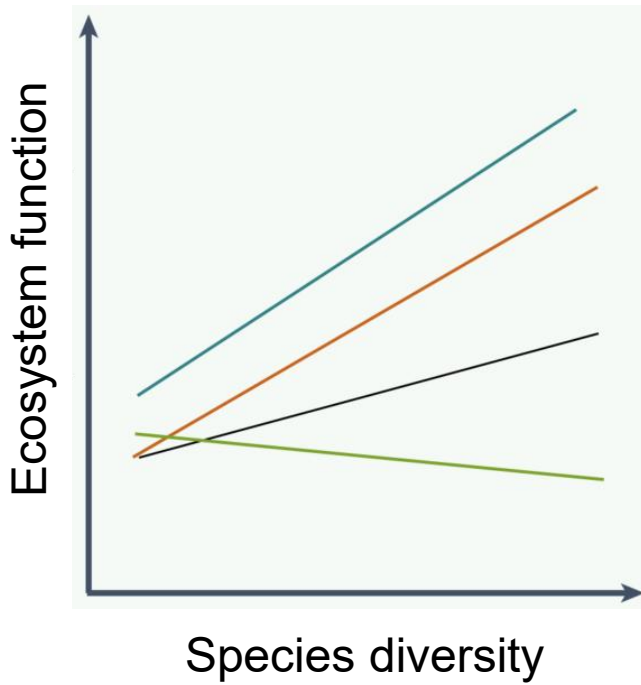
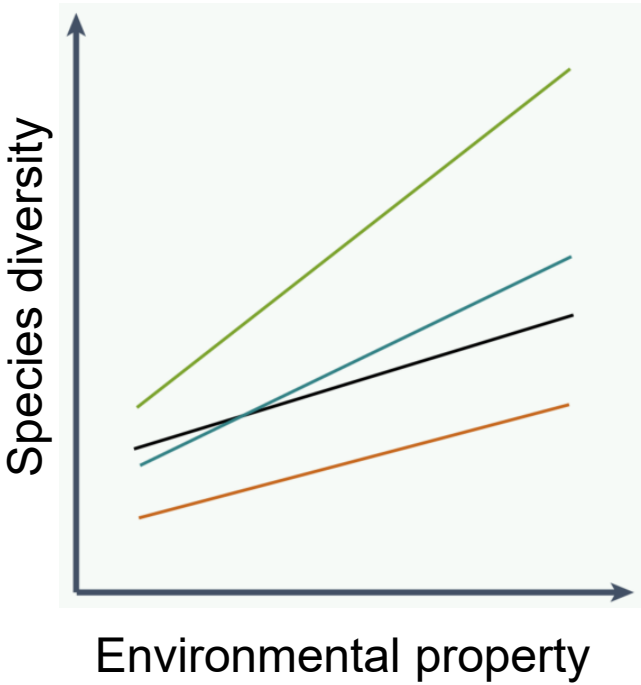
[michael.staab@leuphana.de](mailto:michael.staab@leuphana.de)

[staabmichael.wordpress.com](http://staabmichael.wordpress.com)

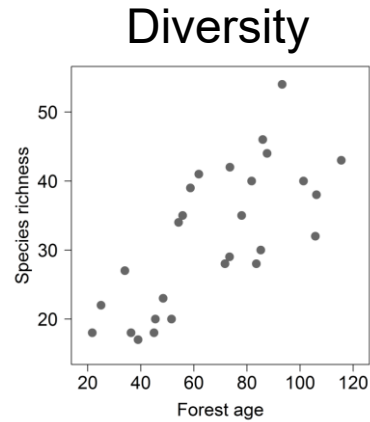
06.05.2026



# Biodiversity, ecosystem-functioning and species interaction networks



# Animal Ecology and Trophic Interactions



Important contributions

Metz et al. 2026 *Nature*  
 Staab et al. 2023 *Commun Biol*  
 Staab et al. 2021 *Funct Ecol*  
 Knuff, ... & Staab 2019 *Methods Ecol Evol*



Natural history  
 Taxonomy



Important contributions

Staab et al. 2018 *Methods Ecol Evol*  
 Staab et al. 2018 *ZooKeys*  
 Staab et al. 2017 *Am Nat*  
 Staab et al. 2014 *PLOS ONE*

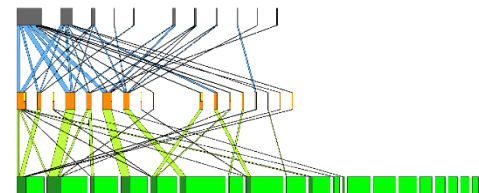
Functions



Important contributions

Staab et al. 2025 *Basic Appl Ecol*  
 Staab et al. 2023 *Ecology*  
 Schuldt, ... & Staab 2023 *Glob Chang Biol*  
 Staab et al. 2022 *J Anim Ecol*

Interactions



Important contributions

Blüthgen & Staab 2024 *Annu Rev Ecol Evol Syst*  
 Staab et al. 2020 *Oecologia*  
 Fornoff, ... & Staab 2019 *Proc R Soc B*  
 Staab et al. 2016 *Proc R Soc B*

# The academic journey to Leuphana





# Beginnings



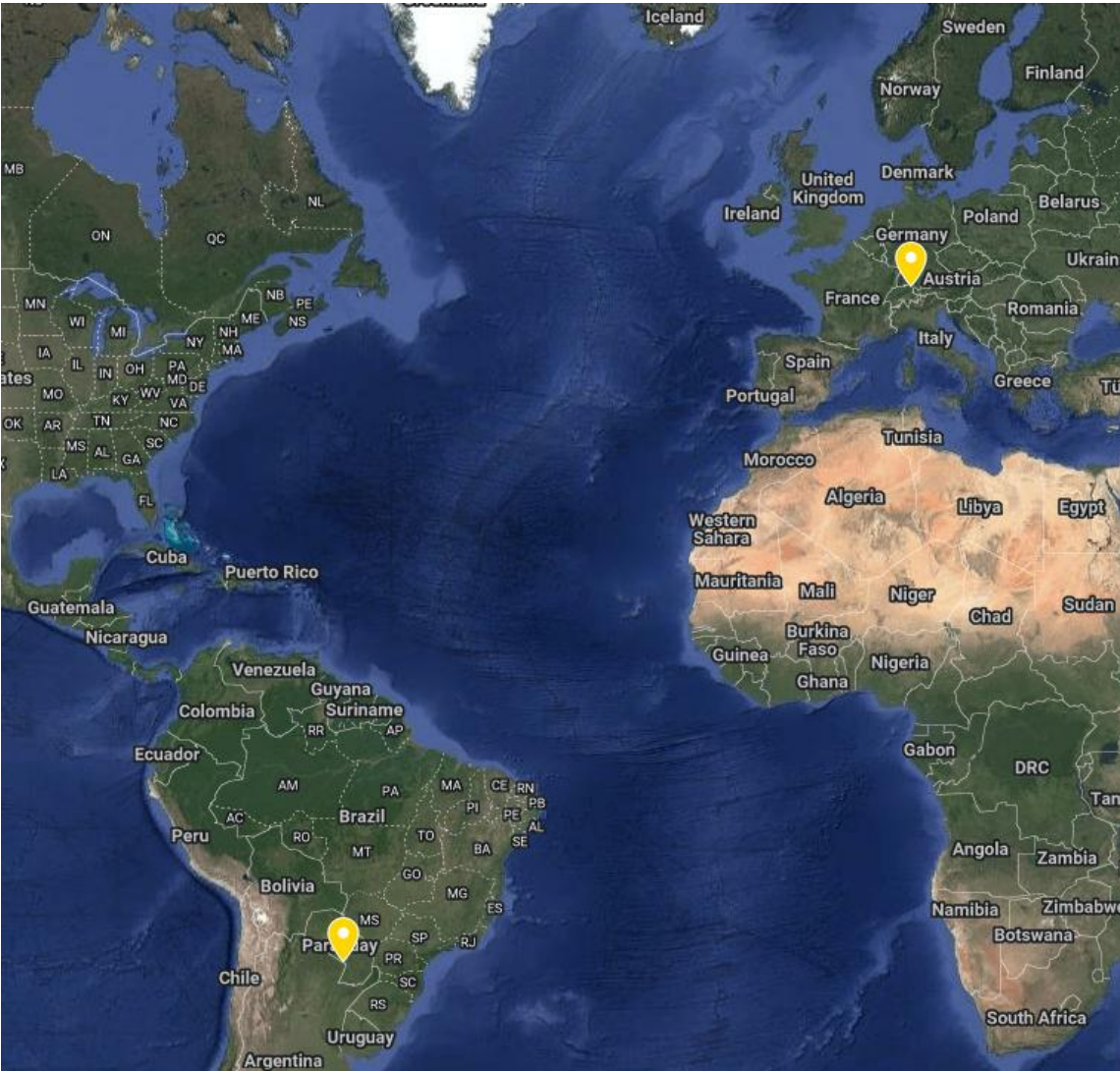
# Beginnings

---



*Polyrhachis olybria*  
Image: Phil Hönle

# Beginnings



# Beginnings

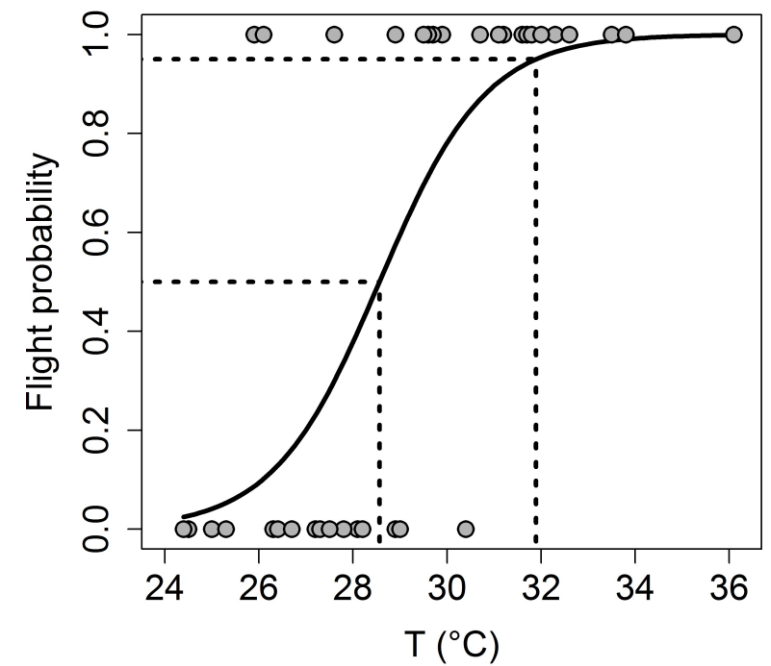
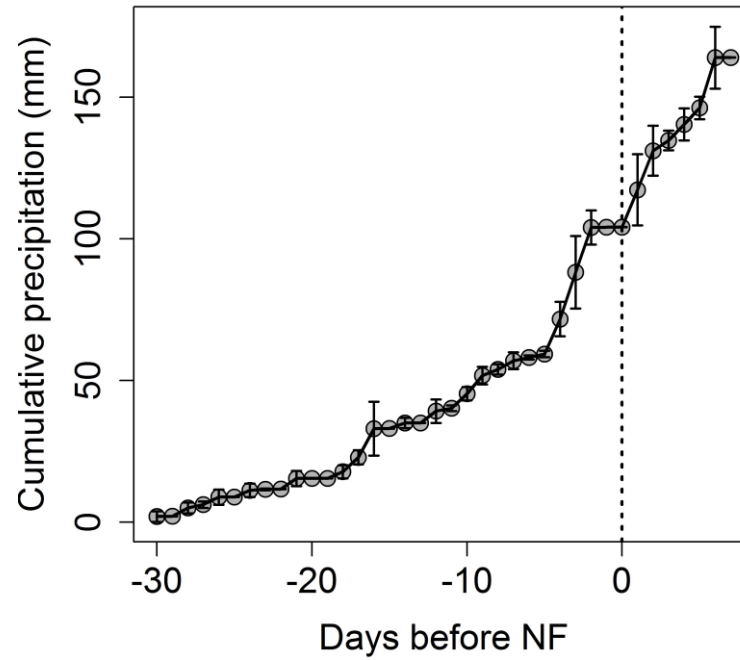
---



*Atta vollenweideri*  
Image: Alex Wild



# Beginnings



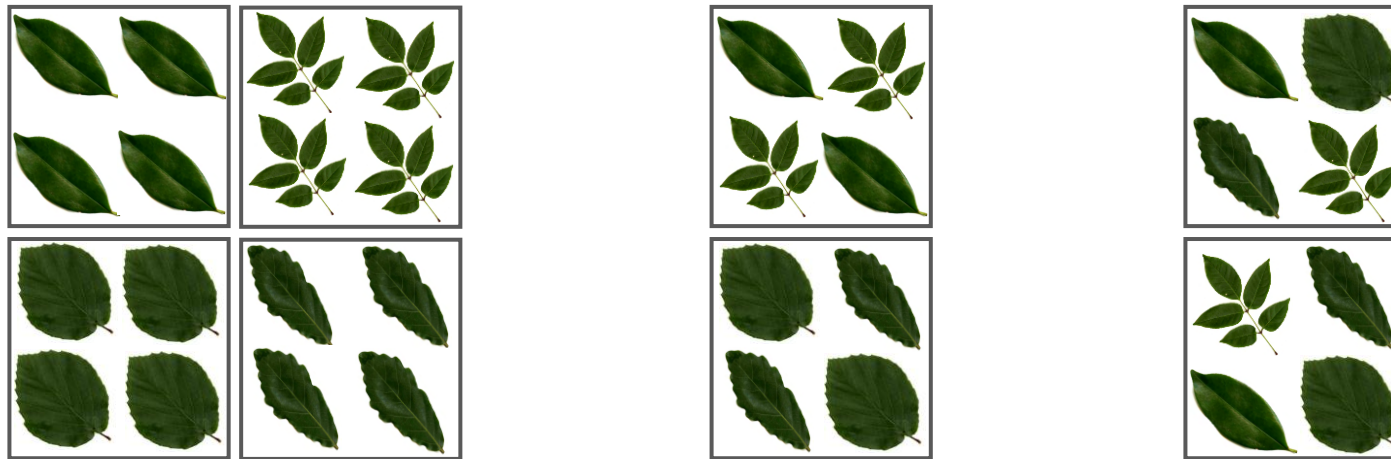
# Development





# Development

- Biodiversity experiments



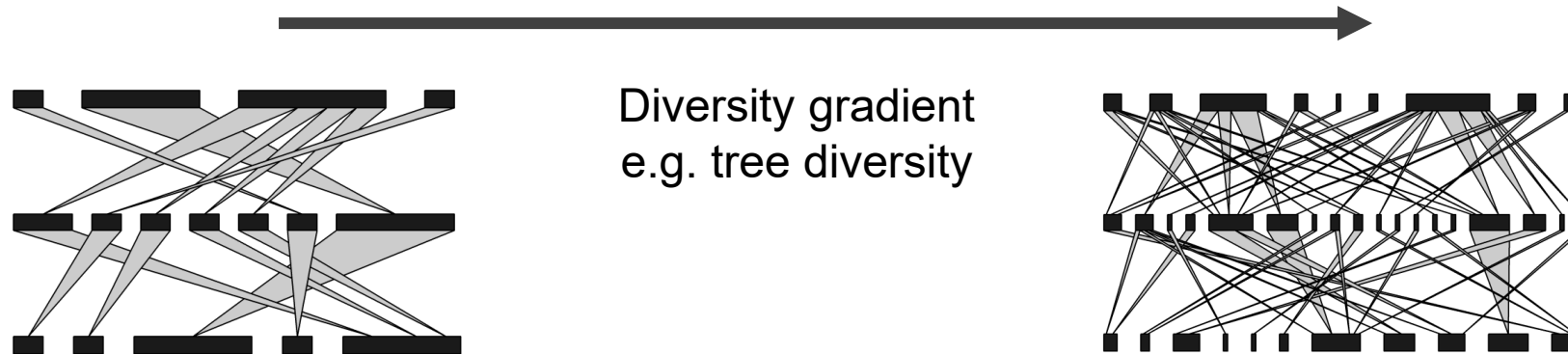
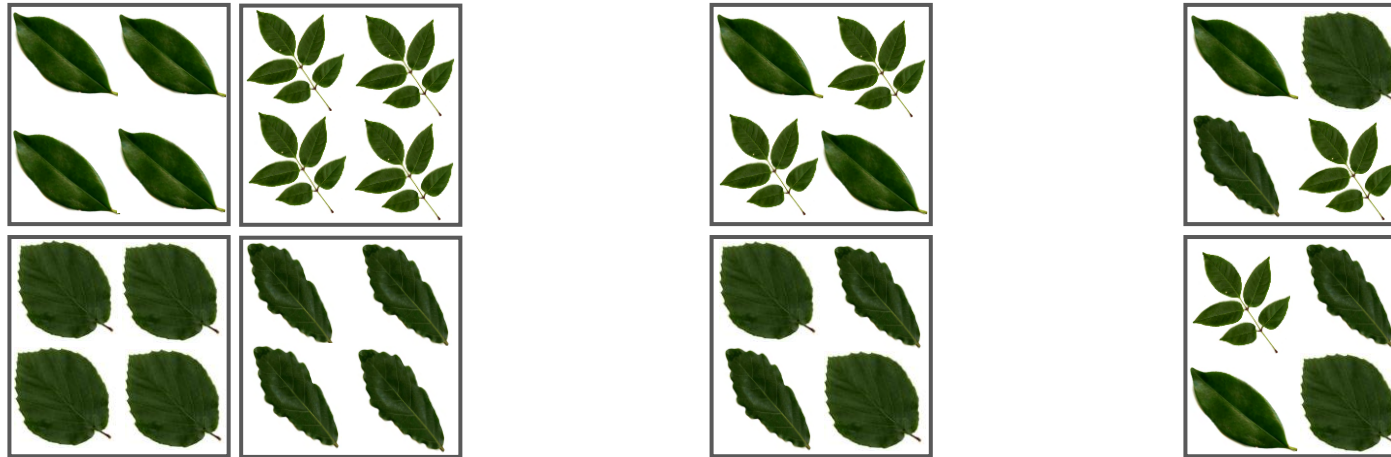
Diversity gradient  
e.g. tree diversity



# Development

---

- Biodiversity experiments





# Development

---

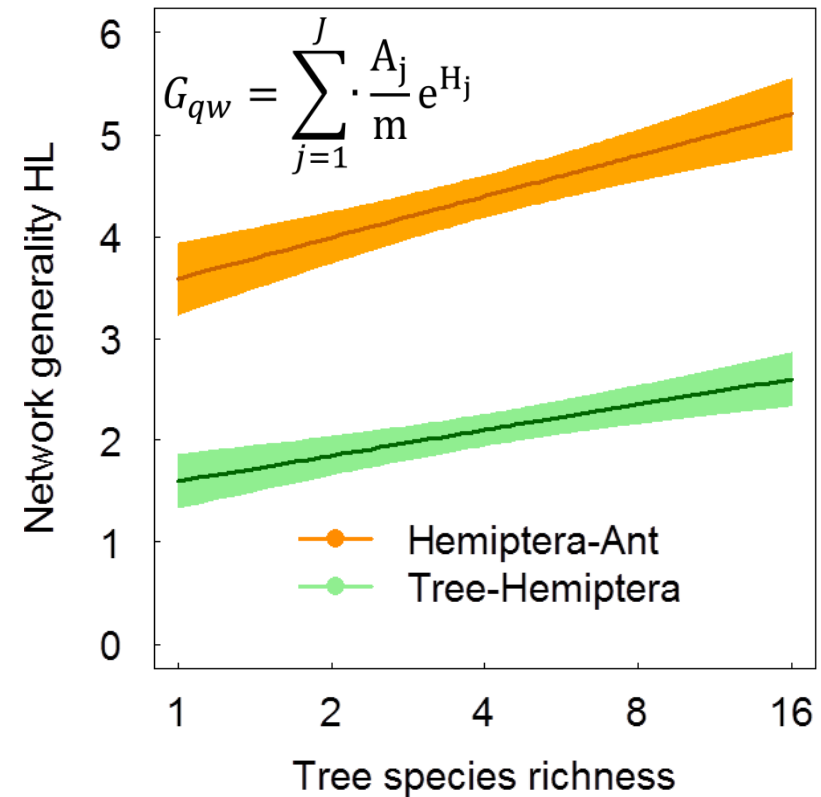
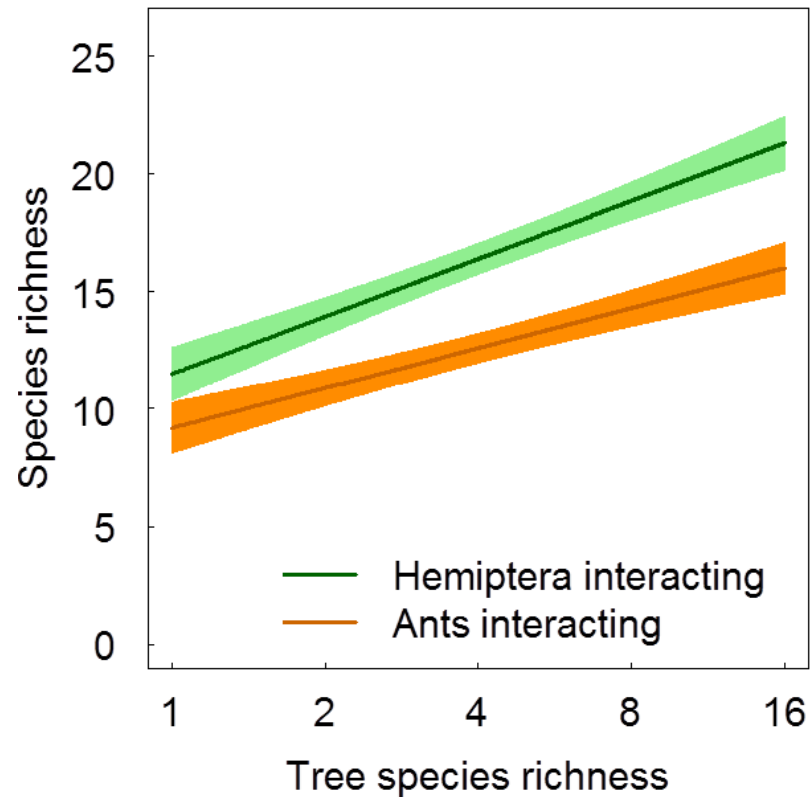
- Tree diversity stabilizes trophic interactions



Image: Alex Wild

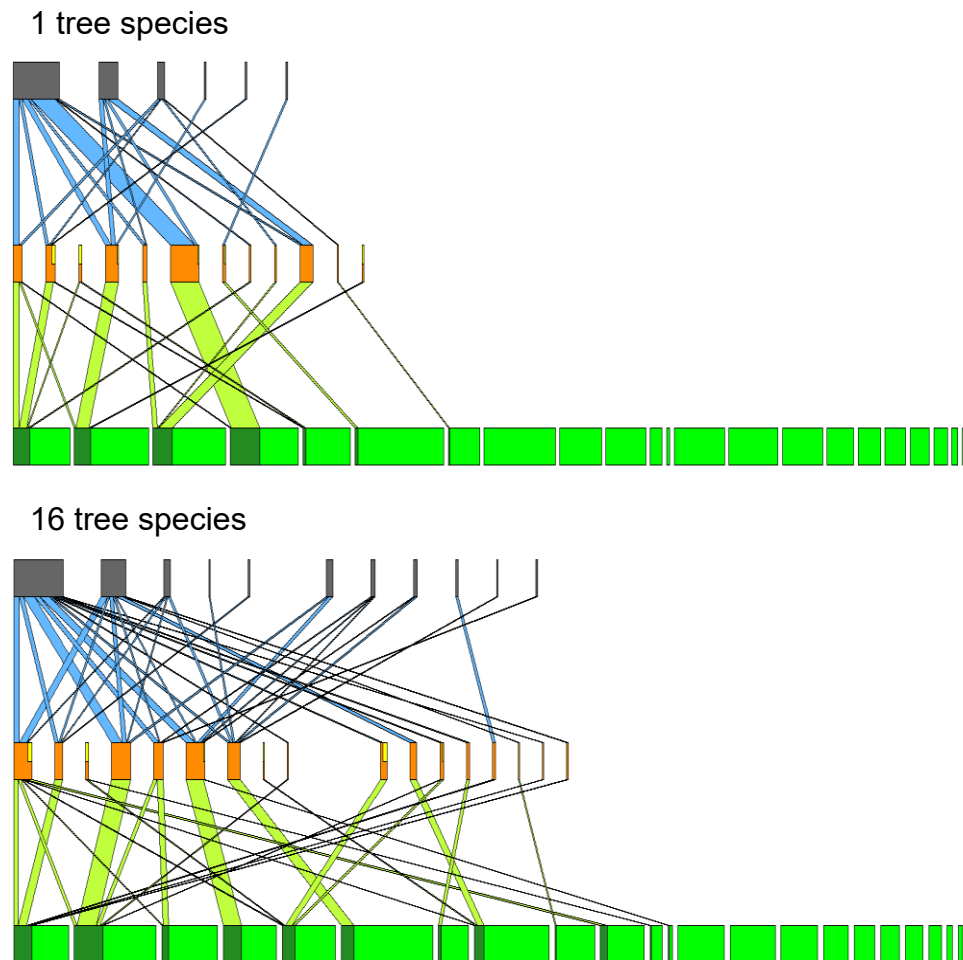
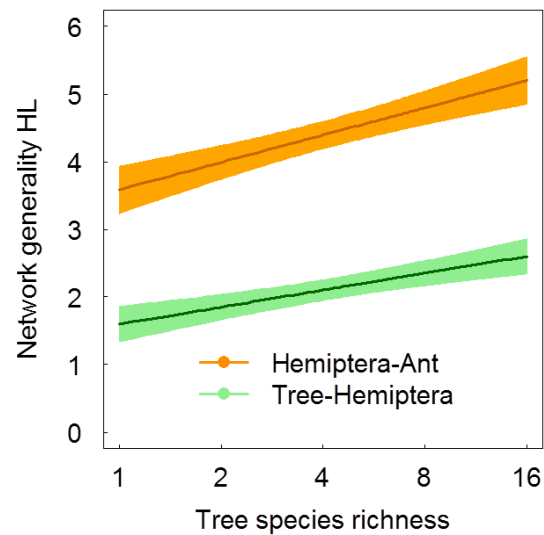
# Development

- Tree diversity stabilizes trophic interactions



# Development

- Tree diversity stabilizes trophic interactions: rewiring of interactions



# Development

- Discovery of an amazing new nesting strategy

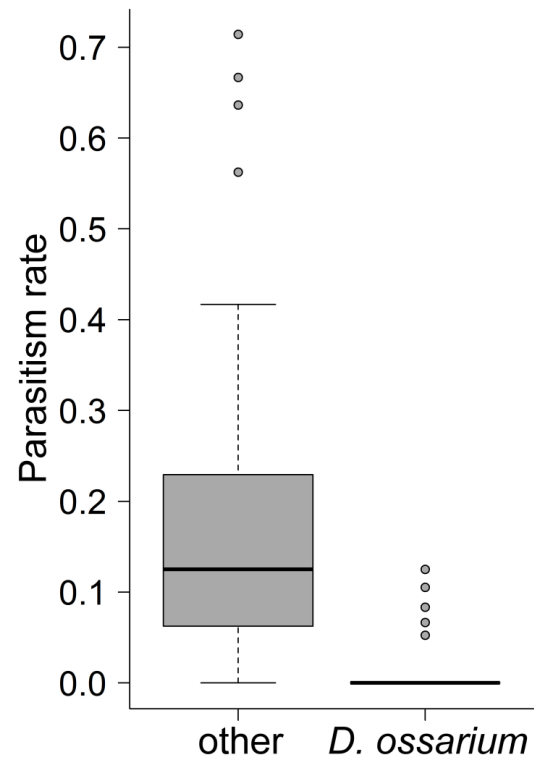


*Deuteragenia ossarium*



# Development

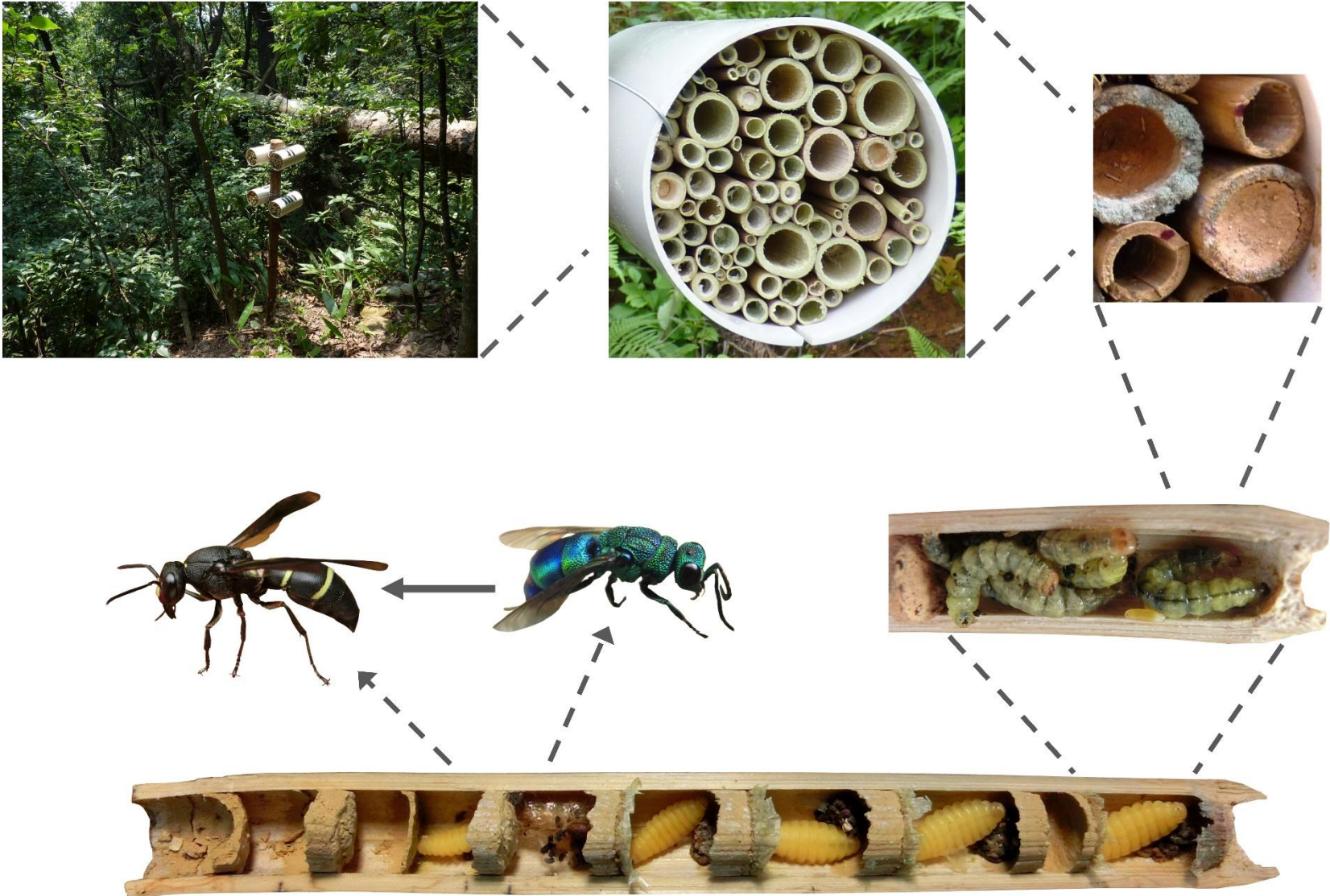
- Discovery of an amazing new nesting strategy



# Growth and independence

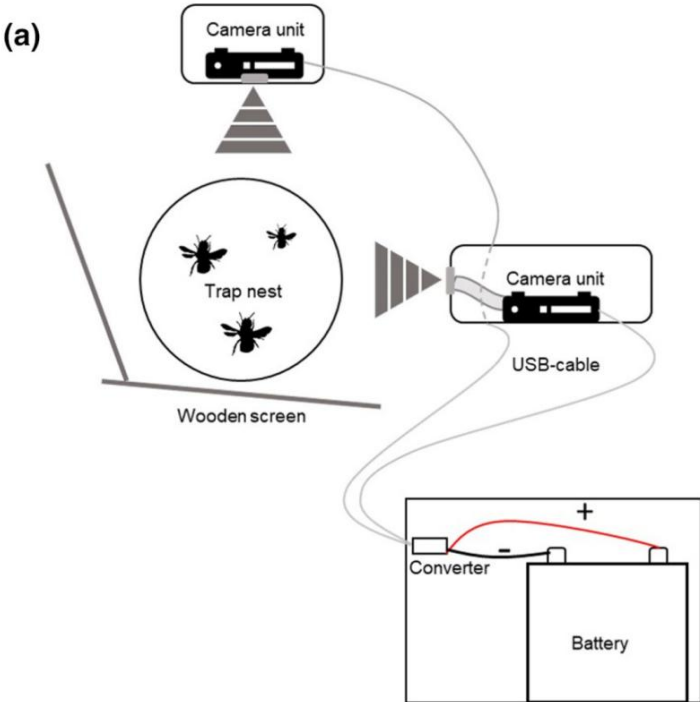


# Growth and independence



# Growth and independence

- Focus on methods

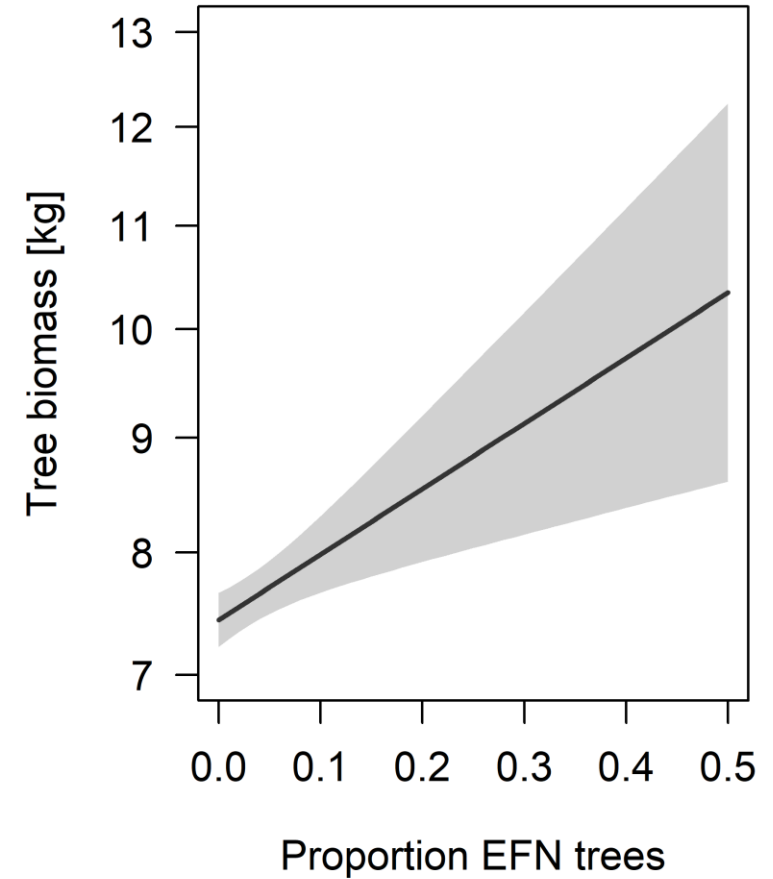


# Growth and independence

- International cooperation



*Iridomyrmex anceps* on *Ailanthus altissima*

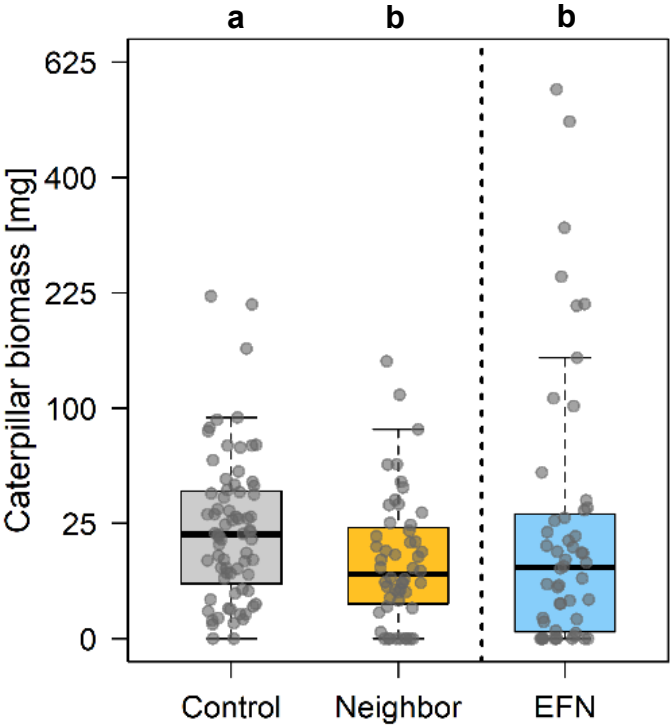
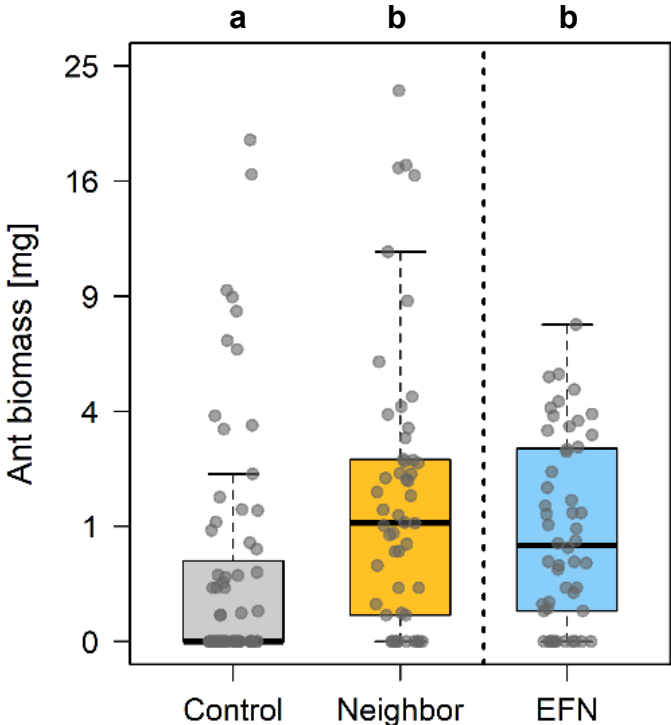


# Growth and independence

- International cooperation

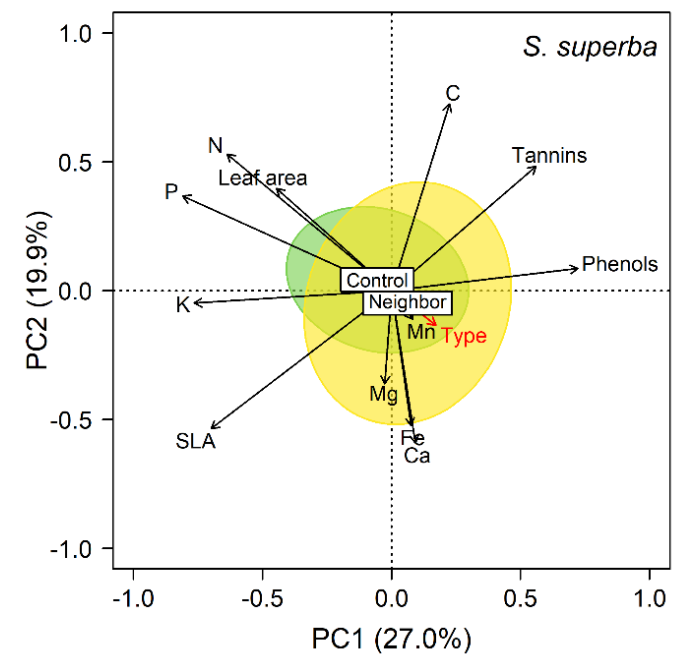
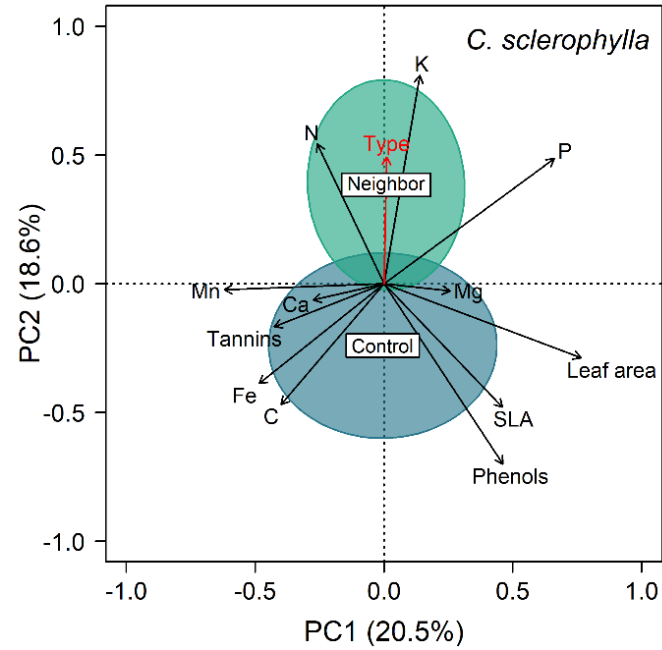
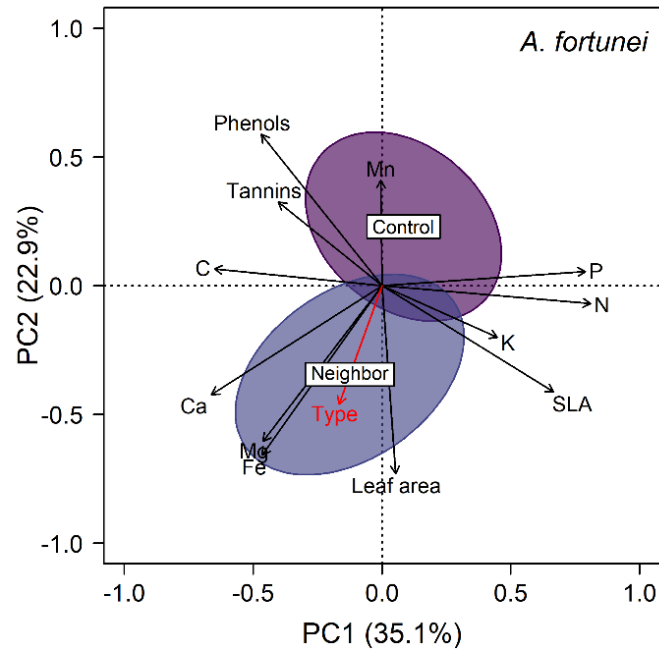


*Eligma narcissus* on *Ailanthus altissima*



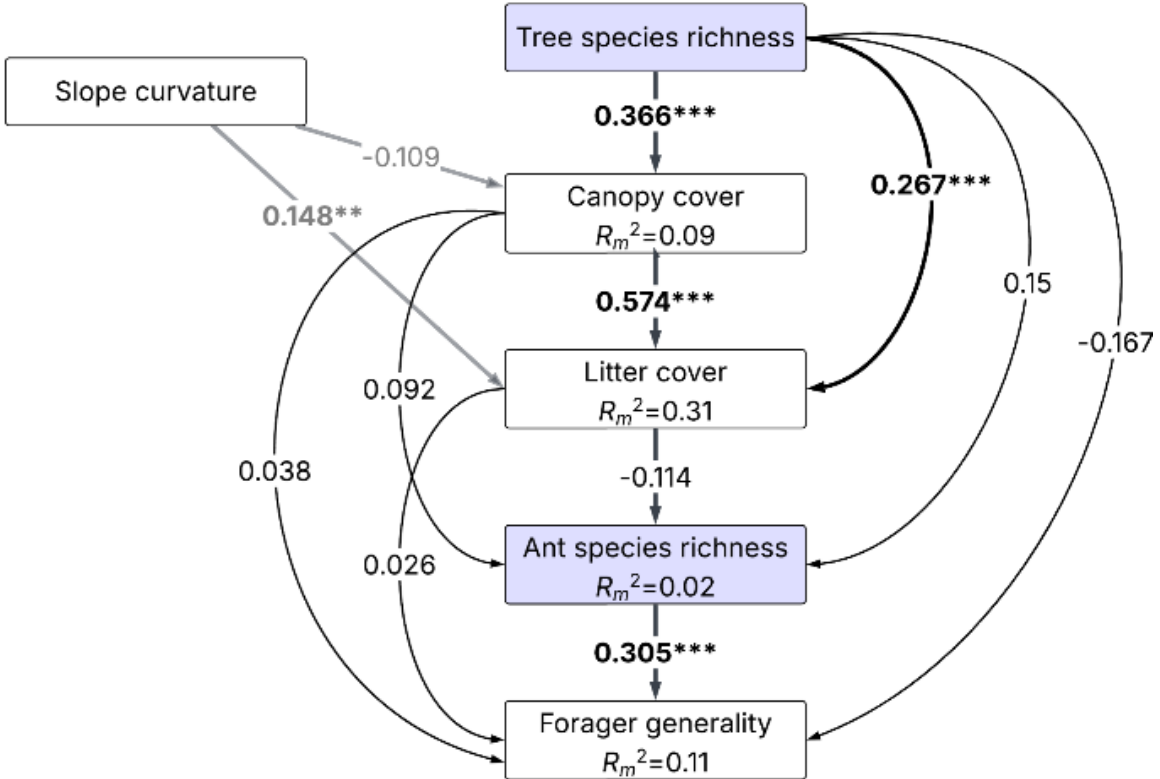
# Growth and independence

- International cooperation



# Growth and independence

- International cooperation



# Growth and independence



- Land use and biodiversity



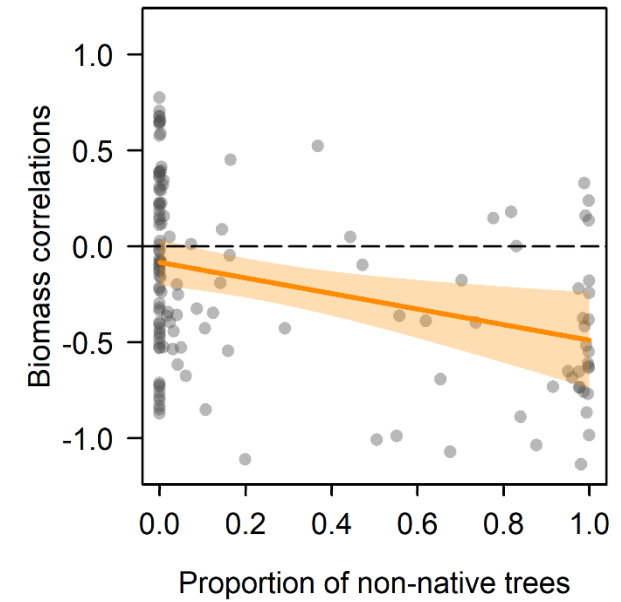
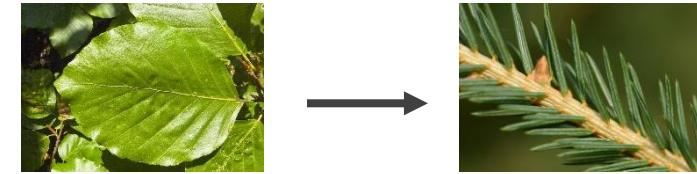
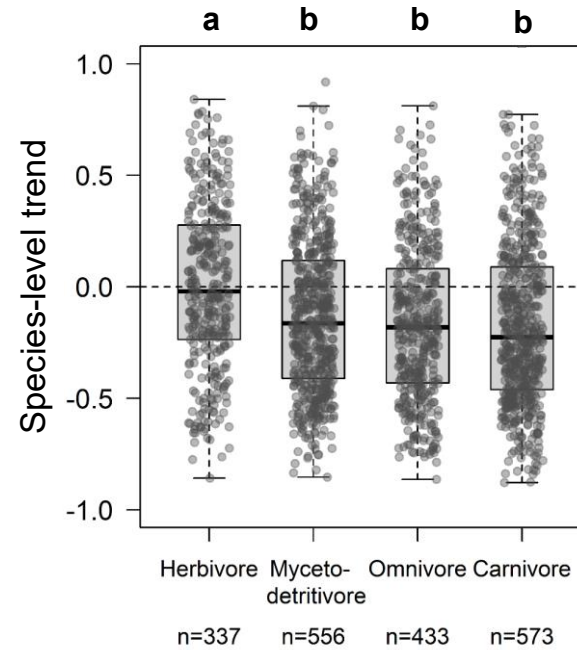
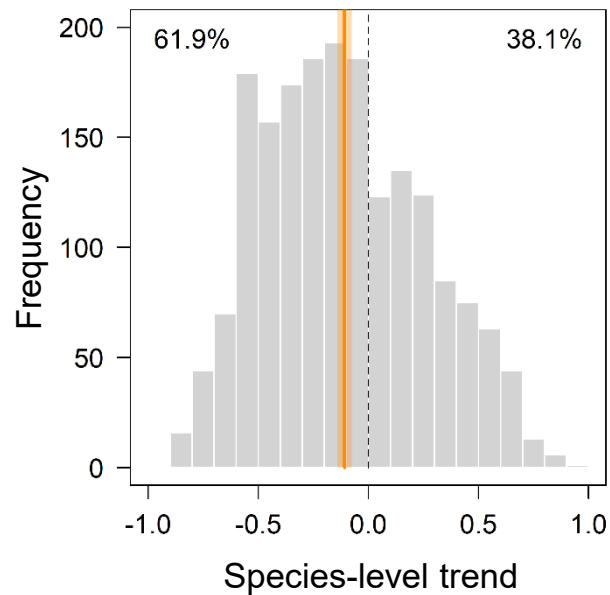
21. Assembly, Wernigerode, 2024



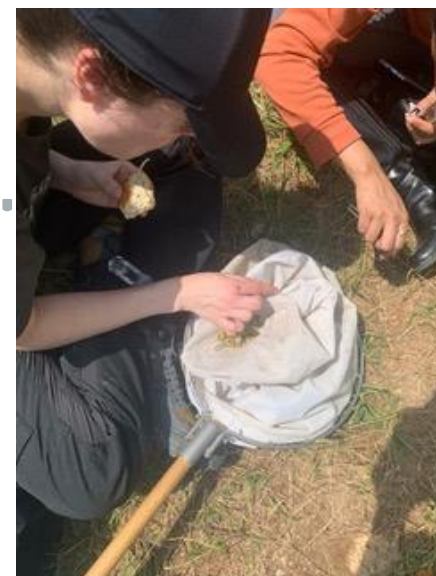
Photo: Martin Feilendorf

# Growth and independence

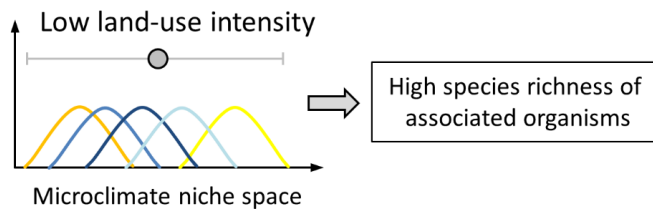
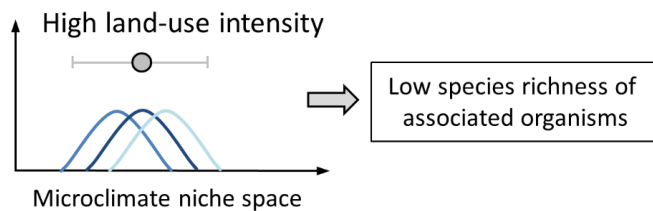
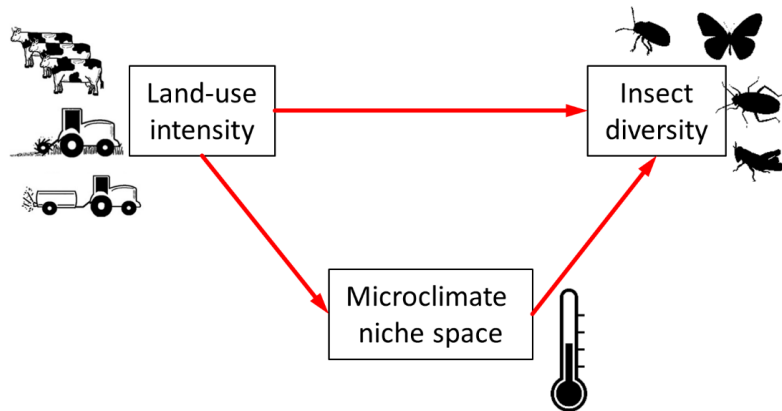
- Land use and biodiversity



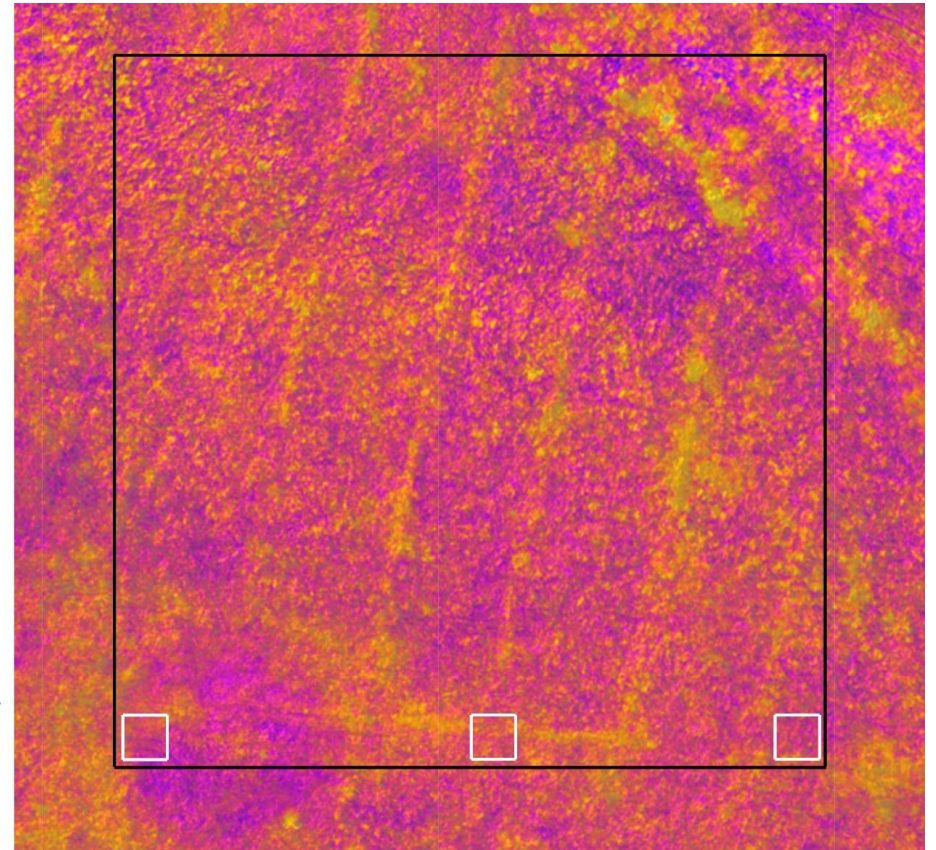
# Present and future



- Microclimate



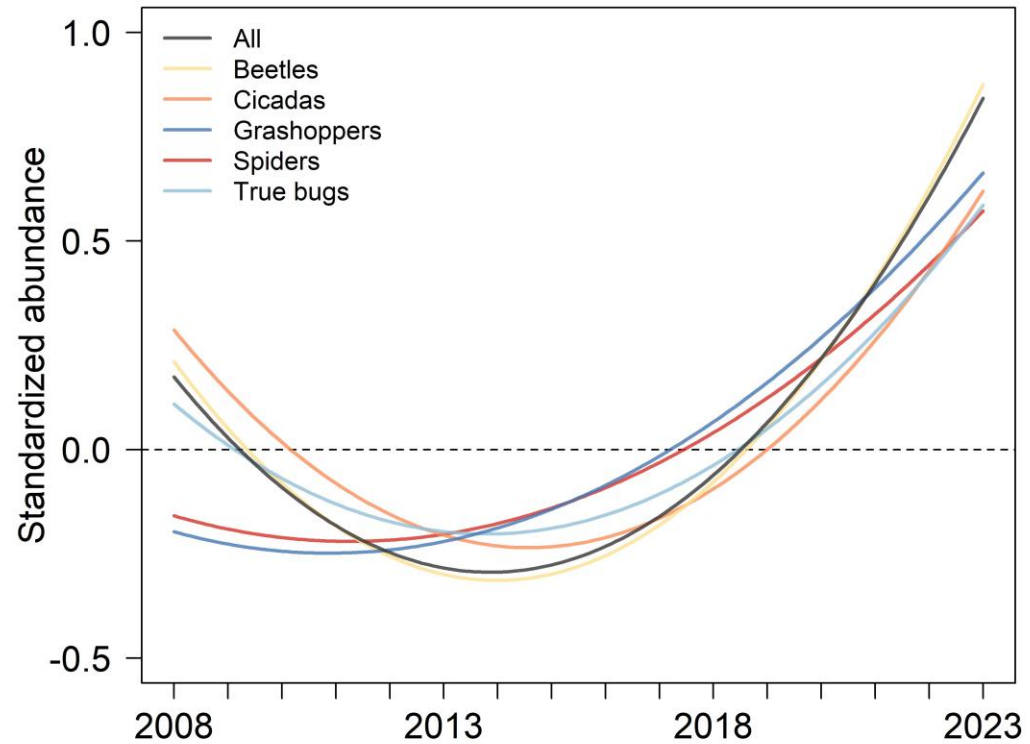
high  
Temperature  
low



# Present and future

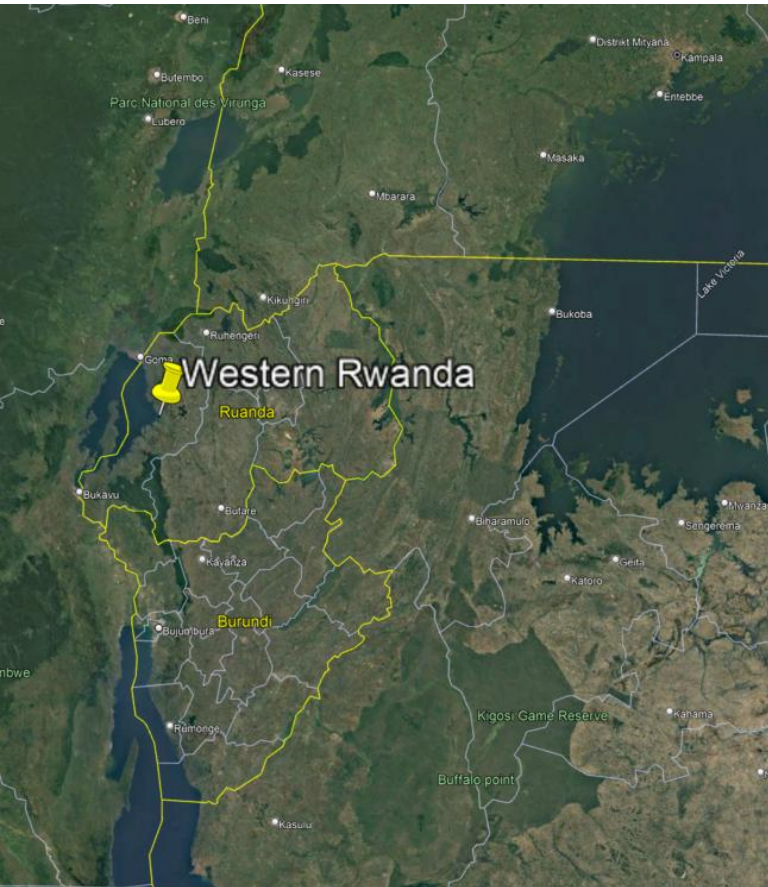


- Land use and biodiversity: changes in space and time



# Present and future

- Regeneration of trophic interactions



# Biodiversity, ecosystem functioning and species interaction networks

Prof. Dr. Michael Staab

Animal Ecology and Trophic Interactions

[michael.staab@leuphana.de](mailto:michael.staab@leuphana.de)

[staabmichael.wordpress.com](http://staabmichael.wordpress.com)

06.05.2026

