

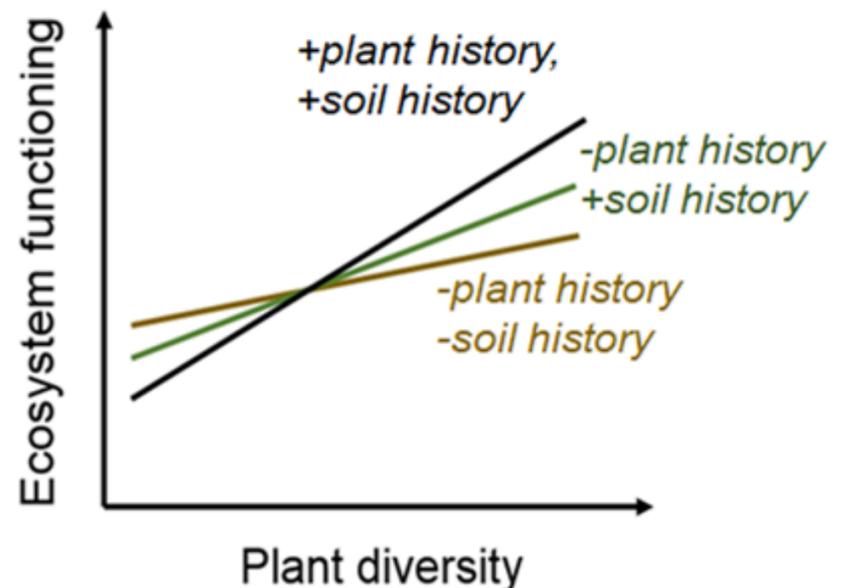
Cheat Sheet

The Field Experiment

Rationale & Hypothesis

This experimental setup allows us to test the role of soil biota (plant antagonists and plant growth facilitators) and plant community assembly for changing BEF relationship over time by controlling for effects of calendar year

We expect to observe the steepest and most significant BEF relationship in the treatment 'with plant history, with soil history' and the weakest relationship 'without plant history, without soil history'



Experimental Setup

Building on the 80 plots of the Main Experiment set up in 2002, three treatments (=subplots; 240 subplots in total) were established per plot:

(1) With plant history, with soil history (Main Experiment; since 2002):

- 17-year old plots with established plant- and soil communities
- No disturbance; serve as control

(2) Without plant history, with soil history (established in 2016):

- Removal of the established plant communities (upper 5 cm of soil were removed)
- Homogenization of the underlying, established soil community to a depth of 30 cm
- Establishment of new plant communities (sowing of seeds from commercial supplier), according to the initial design of the Main Experiment

(3) Without plant history, without soil history (established in 2016):

- Removal of the established plant and soil communities communities (upper 30 cm of soil were removed)
- Exchange by soil from an adjacent agricultural field site without soil history
- Establishment of new plant communities (sowing of seeds from commercial supplier), according to the initial design of the Main Experiment

Earthwork in May 2016



Established plots in June 2016



Plot Design

- 240 subplots were established in 80 plots
- Treatments are randomly located across plots
- Soil nutrients and seed banks were not manipulated, but are measured to account for potential differences when comparing data for the 1- or 2-year-old new communities (2017, 2018, and so on) with data collected in years 2003, 2004, and so on for the now old communities
- Investigations will be performed at the community- and the species level. The different subprojects will sample plots in concerted actions using joint sampling campaigns and sharing samples (soils, plants). Species-level analyses will be performed using planted phytometers and selected resident plants

Location of subplots in exemplary plot

