

Cheat Sheet The Ecotron Experiment

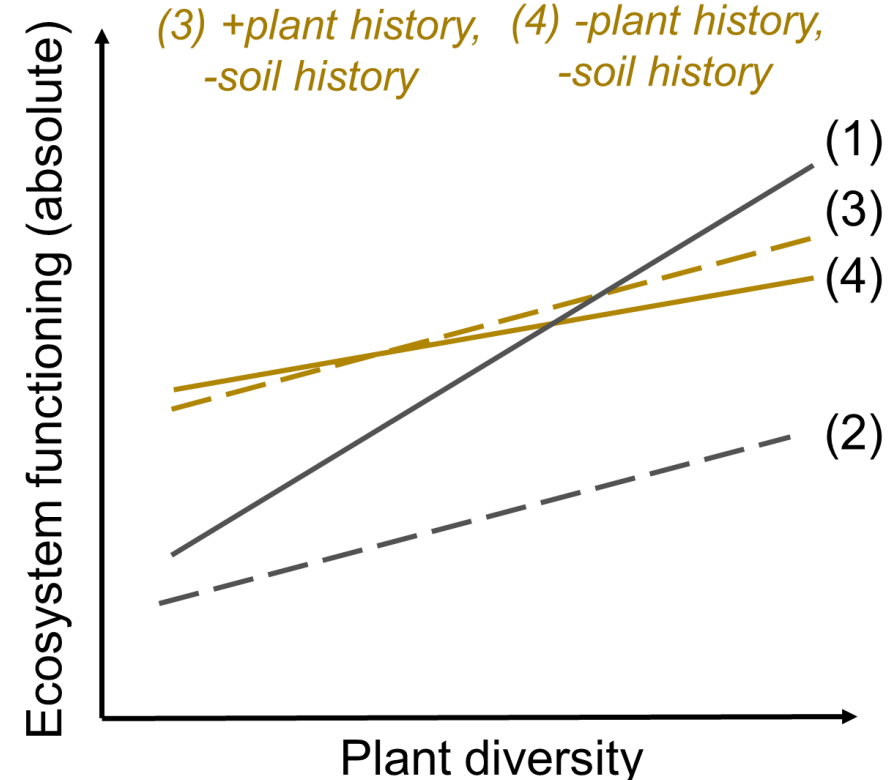
Rationale & Hypothesis

This experimental setup allows us to test the independent and interactive effects of plant history and soil history on ecological communities and functions using an orthogonal cross of these treatments

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'

(1) +plant history, +soil history
(2) -plant history, +soil history

(3) +plant history, -soil history
(4) -plant history, -soil history



Experimental Setup

Four treatments will be established in the iDiv Ecotron by excavating monoliths from the Trait-Based Experiment and long-term bare ground plots

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

- Soil communities of 11-year old plots of the TBE
- Seeds from plants with plot-specific history collected in the TBE

(2) Without plant history, with soil history:

- Removal of the established plant communities (upper 5 cm of soil were removed); underlying soil will be kept
- Establishment of new plant communities (sowing of seeds that were used to plant the TBE in 2010)

(3) With plant history, without soil history:

- Soil from bare ground plots without plant-specific history
- Seeds from plants with plot-specific history

(4) Without plant history, without soil history:

- Soil from bare ground plots without plant-specific history
- Establishment of new plant communities (sowing of seeds that were used to plant the TBE in 2010)

Plot Design

- Twenty-four plots of the TBE were selected to cover a plant diversity gradient of 1, 2, and 3 species (plus two plots with 6 plant species as high-diversity control)
- The plant communities also differ in the diversity and dissimilarity of temporal plant resource acquisition traits
- One unit of the Ecotron will harbor four separated monoliths, two with plot-specific soil history (from the same TBE plot) and two without soil history (from the bare ground plots) (24 units, 96 monoliths in total)
- 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.

