

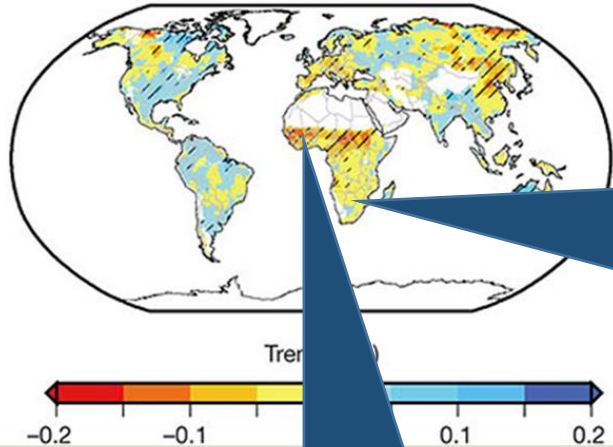
Does your past affect your present?

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Background

Global drought trends past 50 years (2013)



J Sheffield Nature 2013 Red areas have become more prone to dry conditions while blue areas have become less prone to dry conditions.

Ecological memory: ability of the past to influence the present trajectory of ecosystems

Drought events will increase in intensity and frequency

LETTERS

<https://doi.org/10.1038/s41558-019-0351-2>

nature
climate change

Ecological memory modifies the cumulative impact of recurrent climate extremes

ECOLOGY LETTERS

Ecology Letters, (2019) 18: 221–235

doi: 10.1111/ele.12399

IDEA AND
PERSPECTIVE

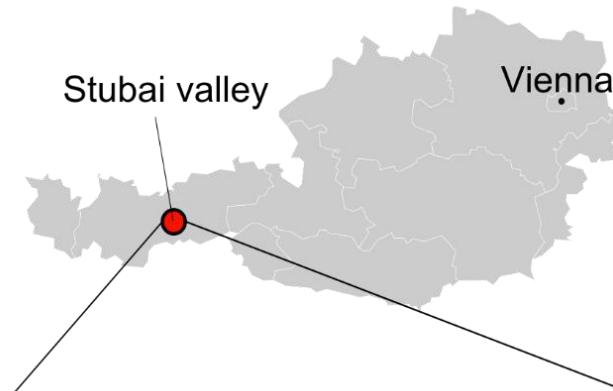
Quantifying ecological memory in plant and ecosystem processes

AEM
Journal of Ecology

Model Organisms Retain an “Ecological Memory” of Complex Ecologically Relevant Environmental Variation

Methods

Field site location



Soil subjected to **10 years** of recurrent drought events vs **1 year** drought.

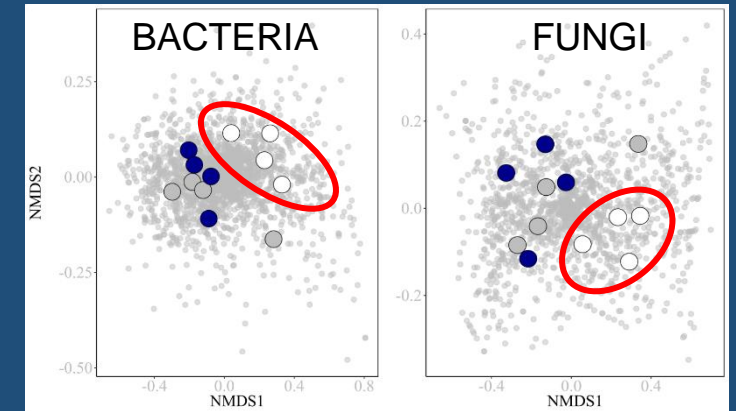
We analyzed:

1. Microbial community
2. Microbial stoichiometry
3. Soil processes (enzymatic activities)

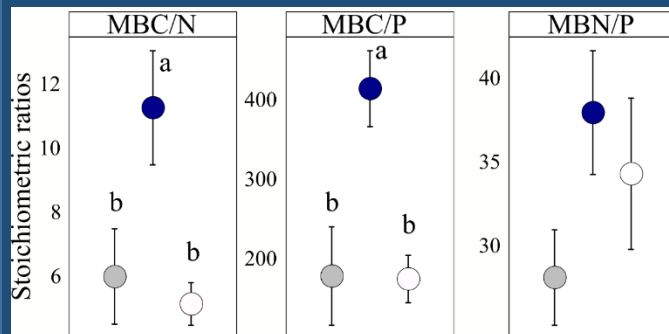
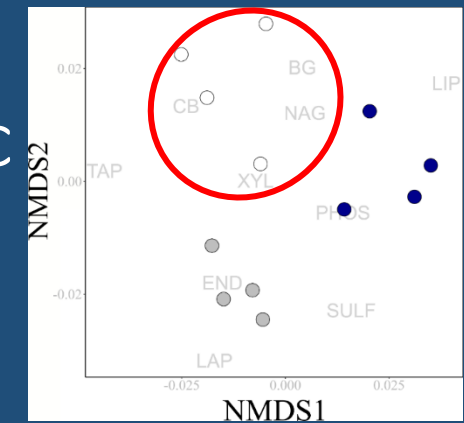
Results



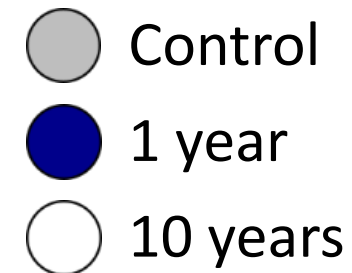
Microbial
community
shift



Enzymatic
activity

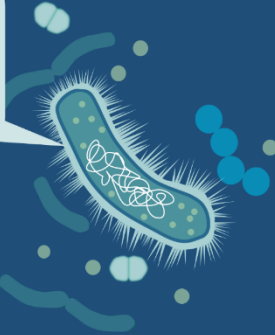


Stoichiometry
maintenance

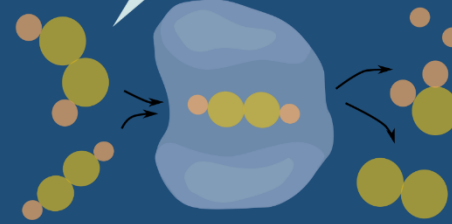


Stress memory

Community
changes



Shift in
processes



Stoichiometry
maintenance



Ecosystem
functions

