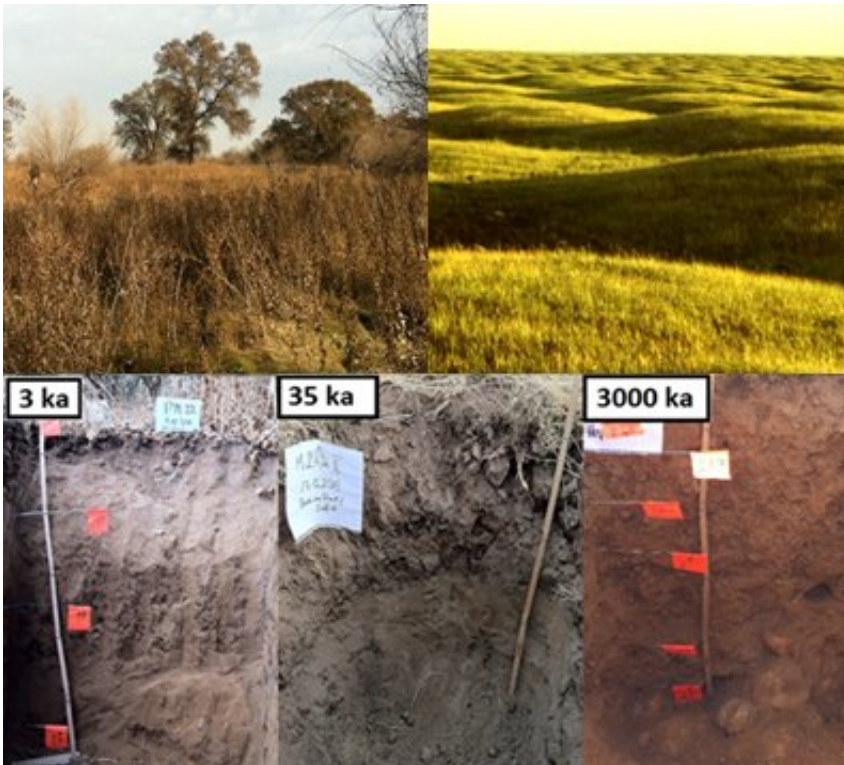


Soil contains one of the keys to climate agreement

July 4 2018



The soil sampling campaign has been conducting across a sequence of soils developed on material originating from the Sierra Nevada Highlands that has been deposited over millions of years in the Californian central valley (ka = 1000 years). Young, fertile soils (left side) can support vast plant life and stabilize C with minerals while old soils (right side) can only sustain a very poor and scarce vegetation due to lack of suitable minerals to sustain greater plant productivity and soil C stocks. Credit: Ghent University

To drive back global warming to below 2°C, carbon storage in soils plays an important part, since soils can store a notable share of the human CO₂ emissions.

To predict the amount of carbon soils can store, scientists studied soils of 100 to 3 million years old. The results enable them to predict which factors impact the carbon storage in soils in the long term and which part soils can play to prevent [global warming](#).

3-million-year old soils

An international team of scientists studied a terrace sequence in the Californian central valley, with [soil](#) of 3 million years old.

"The Central Valley soils show the importance of soil weathering on a scale of millions of years", says Prof. Pascal Boeckx (Ghent University). "The difference between young and old soils shows us how much [carbon](#) soils can store and which parameters are of importance."

The researchers also observed changes in the availability of nutrients for plants and in microbial communities in soils. Microbes play an important part in [carbon storage](#).

Boeckx: "This study allows us to better understand the biological processes in soils and the way they will develop in the long term. This knowledge will help ecologists and biochemists in developing models to predict the amount of CO₂ soils can store and their importance in achieving the Paris climate agreement."

More information: S. Doetterl et al. Links among warming, carbon and microbial dynamics mediated by soil mineral weathering, *Nature Geoscience* (2018). [DOI: 10.1038/s41561-018-0168-7](https://doi.org/10.1038/s41561-018-0168-7)

Provided by Ghent University

Citation: Soil contains one of the keys to climate agreement (2018, July 4) retrieved 25 April 2024 from <https://phys.org/news/2018-07-soil-keys-climate-agreement.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.