

Human appropriation of the calcium cycle: from rain, land, food, to water

91st Minisymposium of the Centre for Environmental History
11th Rachel Carson Center Lecture

Presentation:

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Rachel Carson Centre Munich

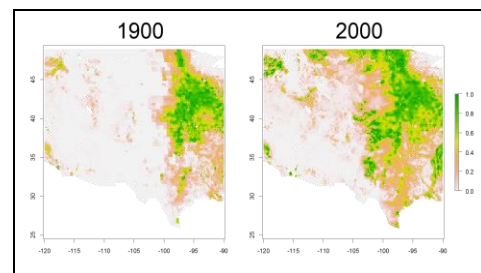
Max Planck Institute for Biogeochemistry, Jena

Moderation:

Assoc.Prof. Mag. Dr. Martin Schmid

Centre for Environmental History

Institute of Social Ecology, BOKU



Proportion of croplands in the U.S. Southern Great Plains
Source: Campbell Lab Data Sharing
<http://portal.nersc.gov/project/m2319/>

Ort: Universität für Bodenkultur Wien | **Standort Schottenfeldgasse 29, 1070 Wien**

Zeit: Thursday, 31 January 2019, 18.15 – 20.00

Abstract:

Conversion of natural forests and grasslands to croplands has been one of the biggest contributors to anthropogenic greenhouse gas emissions, much of which stems from decomposition of organic carbon in plant biomass and soils. However, as agriculture expands into more arid ecosystems where large amounts of carbon is stored in the soils in its inorganic form--caliche--the impact of agricultural conversion on this calcium carbonate mineral and its implications on climate regulation are becoming focal points of scientific inquiry. I will outline my approach to reconstruct how much calcium has moved through the large river systems in the United States Southern Great Plains using historical data on river chemistry, agricultural land acreage, and agricultural inputs from 1900s to present. I use calcium in the rivers as a proxy for carbon to trace carbon movements from atmosphere, to soil and to water. A key player in this story is the limestone, which is made of the same calcium carbonate as the caliche, and for long has been a crucial component in construction and metal-working and more recently in mitigating effects of environmental issues such as acid rain, residential waste water and agricultural soil acidification.

SAVE THE DATE:

12. 3. 2019: **Robert Groß** "Buchpräsentation: Die Beschleunigung der Berge. Eine Umweltgeschichte des Wintertourismus in Vorarlberg/Österreich, 1920-2010"