

Wintersemester 2010/2011

Gebäude GEO I
Hörsaal H6

BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung

Donnerstag 21.10.2010, 16:15 Uhr, H6

Anschließend Postkolloquium mit Bier und Brezeln im Foyer H6

Prof. Hugh A. L. Henry

University of Western Ontario, Canada

Climate warming and atmospheric nitrogen deposition in temperate systems: do winter processes matter?

Climate warming is expected to alter soil freezing dynamics in northern temperate regions as a result of reduced snow cover. Is it hypothesized that these changes in the frequency and intensity of soil freeze thaw cycles can influence soil nutrient cycling and plant growth. I examined over 30 years of climate data from 31 sites in Canada to explore how average winter temperatures have correlated with the frequency and intensity of soil freeze thaw cycles, and used these data to predict future changes in soil freezing. I also used a range of laboratory experiments and a long-term field experiment to explore interactions between soil freezing, soil nitrogen dynamics and plant growth.

Overall, my results reveal a potential for increased freeze thaw cycles across Canada with climate warming. However, biotic responses to soil freezing appear to be non-linear, with freeze damage only occurring in response to extreme freezing events. I will also compare my results to a recent analysis of freeze thaw cycles in Germany, where changes in soil freezing dynamics in response to climate change are projected to differ substantially from colder regions such as Canada.

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