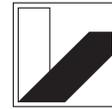


BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

Winter 2021/22



UNIVERSITÄT
BAYREUTH

Donnerstag/Thursday

13.01.2022

12:15 in H8, GEO

Prof. Dr. Jeroen Buters

Zentrum Allergie und Umwelt, TU und Helmholtz Zentrum München

Allergens in the air we breathe: relevance, avoidance and effect of climate change

Allergic diseases have been rising since decades, and about one in 4 to 5 individuals shows some type of allergic disease. The major allergens are proteins from pollen, house dust mite, cat and dog. Climate change affects the reproductive life cycles of plants which has consequences for allergic respiratory diseases depending on the pollen type.

We examined past and future climatic trends (till 2100) in Bavaria showing a trend towards a more continental climate. Birches are sensitive to increased temperatures and summer droughts and we studied if these trees might disappear. Pollen data from 28 monitoring stations in Bavaria were used in this study up to 30 years long. An integrative approach was used to model airborne birch pollen concentrations taking into account tree abundance and pollen production according to different climate change and socioeconomic scenarios. Birch tree abundance till 2100 will decrease in parts of Bavaria, depending on the climate scenario, particularly in current centres of the species distribution (close to Bayreuth). Climate change may increase pollen load but, due to the reduction in birch trees, the amount of airborne pollen will decrease at lower altitudes. Conversely, higher altitude areas will experience expansions in birch tree distribution. The effects on grass pollen are different as these will increase.

