

EINLADUNG

Kolloquium
Sommersemester 2021

PD Dr. Sebastian Seibold

Sachgebiet Forschung und Monitoring im
Nationalpark Berchtesgaden
Technische Universität München

hält am Dienstag, den **01.06.2021**, um 16:15 Uhr einen Vortrag über
„Insekten in der Krise - Welche Rolle spielen Land und Forstwirtschaft?“



Over the last 20 years, more and more studies have been published reporting population declines in several insect taxa, such as pollinators, in different countries, particularly from Europe. But despite mounting evidence for a decline in insects, it received little attention until Hallmann et al. published their study in 2017 reporting dramatic declines in insect biomass in protected areas of Northern Germany. Although many authors point to land use as a major driver of insect decline, multi-site time-series of arthropod occurrences across land-use intensity gradients are rare which allow to test for causal relationships. Moreover, we only know little about which land-use types and arthropod groups are affected and whether the observed declines in biomass and diversity are linked to one another and continue.

The Biodiversity Exploratories are a multi-disciplinary research platform to study effects of land use on biodiversity and ecosystem functioning. Here, arthropods have been monitored since 2008 at 150 grassland and 140 forest sites in three regions of Germany. We analyzed trends in biomass, abundance and species richness and found declines in biomass and species richness in both grasslands and forests as well as declines in abundance in grasslands. The decline was consistent across trophic levels and its magnitude was independent of local land-use intensity. However, grassland sites embedded in landscapes with higher cover of agricultural land showed a stronger temporal decline. These results indicate that there are widespread declines in arthropods that concern biomass, abundance and diversity across trophic levels. Declines in forests demonstrate that arthropod loss is not restricted to open habitats. Our results suggest that major drivers of arthropod decline act at larger spatial scales, and are, at least for grasslands, associated with agriculture at the landscape level.

Since 2019, various new local and regional studies were published as well as global meta-analyses which help to further improve our understanding of insect population trends. Globally, the meta-analysis of VanKlink et al. (2020) confirm an overall decline in insects but reported trends of single studies vary strongly depending on study region, taxa and community metrics. While data from many regions of the world are missing, strongest negative trends were reported from regions with intensive land use, such as Central and Western Europe and the North American Midwest. Trends in biomass and richness of the same taxa can differ clearly and even show opposite patterns indicating that one community metric cannot be used as proxy for others. Overall, this highlights that insects are in a concerning state globally, but drivers are complex and thus both research and politics should operate with care.



Einladender: Prof. Dr. Claus Bässler

Dieser Vortrag findet digital per Zoom statt. Über diesen Link kommen Sie zu der entsprechenden Veranstaltung:
<https://uni-frankfurt.zoom.us/j/97678326502?pwd=c2dYWmxTbENPMDFneDM3d0hLbnJCQT09>

Meeting-ID: 976 7832 6502
Kenncode: 204728

