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Small-scale spatial variability of mosquito abundance in an urban environment in Southern Germany

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The incidence of mosquito-borne diseases is projected to rise across Europe in the context of climate change, as increasing temperatures, altered precipitation patterns, and changes in land use support the expansion of potential vector species. Urban climate adaptation measures like green spaces and water bodies may unintentionally affect mosquito distribution. Here we present findings of mosquito distribution in Augsburg, Southern Germany, and its rural surroundings to conduct a spatially differentiated risk assessment of potential vector occurrence along the urban-rural gradient. In 2024, mosquito trapping was conducted at 20 sites, expanded to 24 sites in 2025. At each trap location temperature and relative humidity are continuously measured. These data are supplemented by wind-measurements and satellite-derived information on vegetation and land use, as well as regional weather data to capture local climate conditions. Initial results show considerable small-scale differences in mosquito abundance between trap sites, even within the same urban area. By combining entomological data with environmental and spatial datasets, the study enables a differentiated risk assessment for mosquito occurrence. The findings contribute to a deeper understanding of urban mosquito ecology and inform targeted strategies for vector monitoring and control in European cities.

Keywords

Mosquitoes, Vector monitoring, Model, Spatial Analysis

Registration ID

155

Professional Status of the Speaker

PhD Student

Junior Scientist Status

Yes, I am a Junior Scientist.

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