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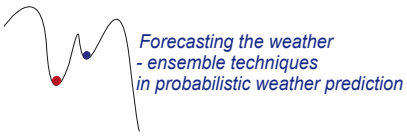

Microclimatic conditions in urban and periurban tick habitats

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The wood tick, Ixodes ricinus, is the main vector of Borrelia burgdorferi sensu lato, the etiological agent of Lyme disease in Europe. For its survival, it must minimize dehydration. Wood ticks, therefore, seek habitats that provide a moist microclimate. Shadowy meadows and ecotonal zones at the edge of a forest or at forest paths, where vegetation growth is lush, characterize suitable habitats. Surprisingly, cities, such as Berlin, offer a variety of different man-made habitat structures that also permit tick populations and their hosts to thrive. Parameters influencing the heterogeneous distribution and activity of ticks in urban or periurban environments are largely unknown. They likely depend on complex interactions between ambient climate and microclimate, habitat structure and host availability. A thorough understanding of these interactions facilitates the development of intervention strategies and serves as basis for decision making in urban planning and management of local recreational facilities. Within the framework of a project on urban system research (MILIEU), we aim to determine the influence of climatic factors on the distribution and activity of questing vector ticks in urban and periurban sites of Berlin. Especially designed „tick-climate-stations“ and additional small data loggers were installed in tick habitats to record meteorological data on a scale relevant to ticks. In selected urban and periurban sites, we relate the spatiotemporal activity of ticks to particular microclimatic measurements as well as to prevailing ambient weather conditions and local habitat structures, each of which may be strongly impacted by anthropogenic influence in the inner-city environment.