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R03.1 Contribution of climate change to the emergence of West Nile virus in Europe

CLIMATE, HUMAN AND ENVIRONMENTAL IMPACT ON ANIMAL HEALTH

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Abstract

West Nile virus (WNV) is an important mosquito-borne pathogen in Europe and although the causal relationship between climate change and its emergence on the continent has been reported, it has not been formally evaluated. Here, we examine whether WNV establishment in Europe can be attributed to climate change. For this purpose, we train and project ecological niche models for WNV considering historical, future, and counterfactual climate data, the latter corresponding to a hypothetical climate in a world without climate change. We show an increase in the ecologically suitable area for WNV under the historical climate evolution, whereas this area remains largely unchanged throughout the last century in a no-climate-change counterfactual. Our analyses therefore point towards climate change as one of the major drivers of the increased risk of WNV circulation in Europe, and further allows discussing potential scenarios for the future evolution of the areas at risk.

Keywords

West Nile virus
Europe
ecological niche modelling
climate change attribution
future projections

Category

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